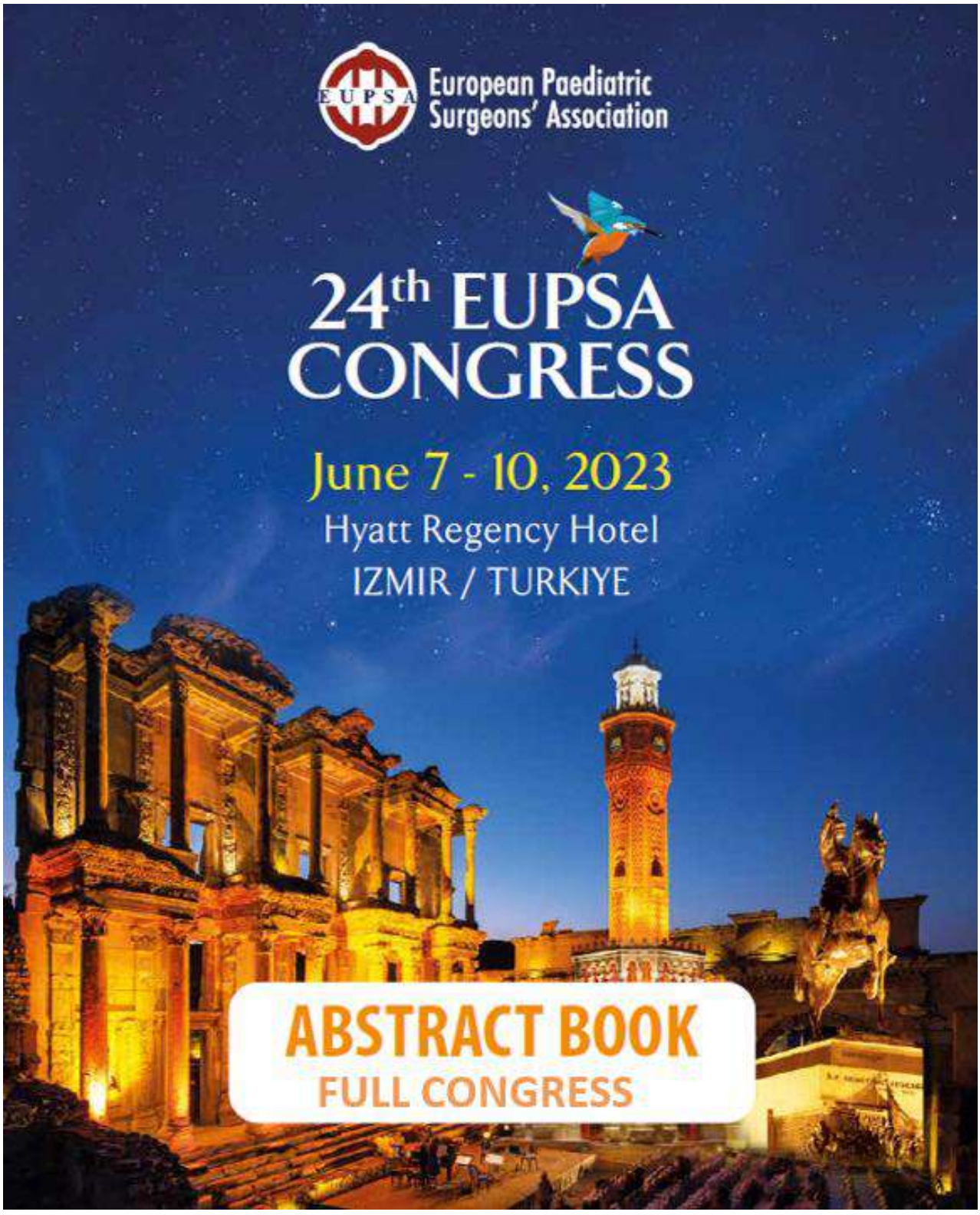
European Paediatric
Surgeons' Association
24th EUPSA
CONGRESS
June 7 - 10, 2023
Hyatt Regency Hotel
IZMIR / TURKIYE
ABSTRACT BOOK
FULL CONGRESS

European Paediatric Surgeons' Association

24th EUPSA CONGRESS

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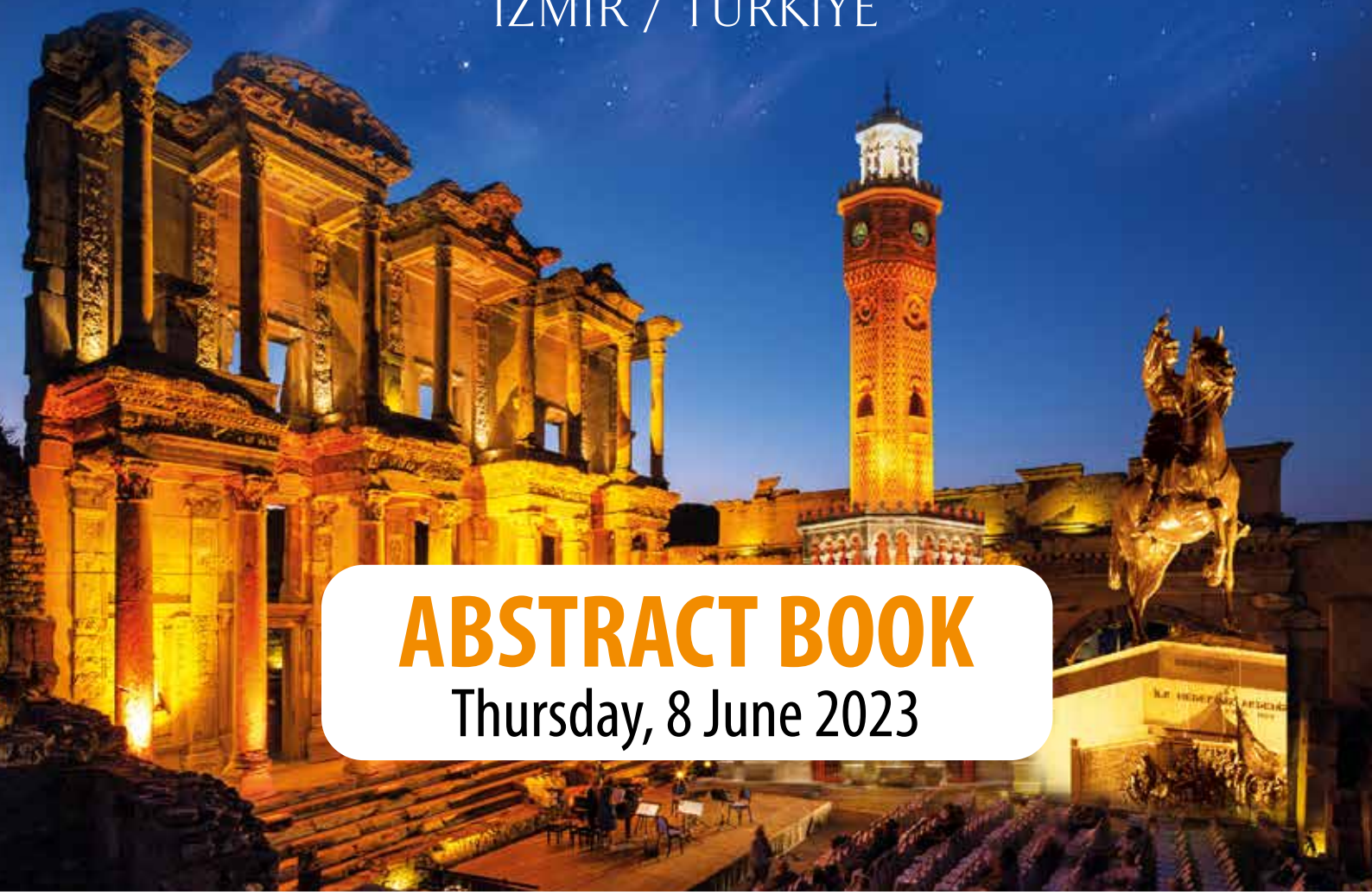
IZMIR / TURKIYE



ABSTRACT BOOK

Thursday, 8 June 2023

ORGANIZATION SECRETARIAT
Topkon Congress & Event Management
Zuhtupasa Mah. Rifatbey Sok. No:24
34724 Kalamış-Kadıkoy-Istanbul
Phone: +90 216 330 90 20 • Fax: +90 216 330 90 05
E-mail: eupsa2023@topkon.com

09:00 - 10:30

Scientific Session 1

Innovations / (M1) Regency 1+2

Chair:

Amulya Saxena (UK)

Orkan Ergün (TUR)

IN01_LO / 09:00 – 09:10

TARGETED SHORT-WAVE INFRARED (SWIR) IMAGING ALLOWS HIGHER CONTRAST AND BETTER DELINEATION OF TUMOUR MARGINS COMPARED TO NEAR-INFRARED I (NIR-1) FLUORESCENCE.

Laura Privitera[1,2], Dale Waterhouse[1], Chiara Da Pieve[3], Marta Barisa[2], Olumide Ogunbiyi[4], J.Ciaran Hutchinson[4], Olumide Ogunlade[5], Neil Sebire[4], Kate Cross[6], Paolo De Coppi[6], Paul Beard[7], Gabriela Kramer-Marek[3], Danail Stoyanov[1], John Anderson[2], Stefano Giuliani[6,2,1]
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Abstract

Aim of the Study: Targeted Fluorescence-guided surgery (FGS) represents a game-changing innovation in surgical oncology. While traditional FGS relies on dyes emitting in the near infrared-1 window (NIR-I,700–950nm), short-wave infrared imaging (SWIR,>1000nm) has the potential to improve tissue penetration and definition of tumour margins and small residuals. Here we highlight the technical and clinical advantages of targeted SWIR FGS.

Methods: Data were obtained with a custom-made NIR-I/SWIR imaging platform based on a deep-cooled InGaAs camera (NIRvana 640 Teledyne Princeton, >85% Quantum Efficiency between 950−1500nm). The system performance was assessed in-vitro on tissue-mimicking phantoms. In-vivo, mice bearing subcutaneous neuroblastoma xenografts were imaged following the injection of a neuroblastoma-specific fluorescent conjugate (Dinutiximab-IRDye800). Mean fluorescence intensity (MFI) and tumour-to-background ratio (TBR) were calculated. Literature on SWIR imaging was reviewed up to January 2023. R&D approval 20DC07.

Main results: Compared to NIR-I fluorescence, SWIR shows negligible autofluorescence, decreased tissue absorption, and reduced photon scattering. This enables deeper tissue penetration, better visualisation of sub-surface structures, and higher TBR (Fig.A). In-vitro, imaging of tissue-mimicking material demonstrated the enhanced depth penetration of SWIR fluorescence, with a sharper signal delineation in the SWIR region compared to NIR-I (Fig.B). In-vivo, the presence of negligible autofluorescence (MFI_{900}= 8.9±2.4; MFI_{1300}= 0.23±0.18) together with a significantly higher TBR (2.2<TBR_{900nm}<3.1 vs 4.1<TBR_{1300nm}<5.8) provided a high-contrast definition and an evident sharper delineation of tumour margins (Fig.C–D). Intraoperative use of SWIR in different cancers will be presented.

Conclusions: SWIR FGS provides high-definition imaging, and it should be translated into the operating theatre.

IN02_LO / 09:10 – 09:20

NATIONAL PEDIATRIC SURGERY HUB – ENSURING NATIOWIDE SHARING OF EXPERTISE IN TREATING RARE AND COMPLEX CONDITIONS

Mikko Pakarinen[1,2], Topi Luoto[3], Arimatias Raitio[4], Esko Tahkola[5], Susanna Nuutinen[6], Janne Suominen[1], Antti Koivusalo[1], Juha-Jaakko Sinikumpu[6]
[1]New Children's Hospital, Helsinki, Finland. [2]University of Helsinki, Helsinki, Finland. [3]Tampere University Hospital, Tampere, Finland. [4]Turku University Hospital, Turku, Finland. [5]Kuopio University Hospital, Kuopio, Finland. [6]Oulu University Hospital, Oulu, Finland

Abstract

Aim of the study: Patient representatives, European Reference Networks (ERN) and decreasing resources are pushing for innovative approaches to ensure equal high-quality pediatric surgical care. We describe a novel approach, National Pediatric Surgery Hub (NPSH), for collaborative nationwide management of rare/complex conditions, follow-up, and research.

Methods: In 2021, pediatric surgeons from all five university hospitals in a country (birthrate:50.000/year) performing neonatal surgery established national expert consortium for seamless communication and dissemination of expertise. Management of individual patients was coordinated by the largest university hospital (CUH), a full member of ERNICA (Figure). When deemed necessary, operations were performed together by local and CUH surgeons either locally or at CUH depending on the surgical condition and intensive care/postoperative requirements. In addition to regular virtual case meetings, national management and follow-up protocols and research projects were initiated to promote continuity of care.

Main results: During 2021-2022, of 26 patients with neonatal surgical conditions managed by NPSH, 16 (62%) were operated locally, including 3 emergency cases where CUH surgeons travelled within 24 hours. One esophageal atresia (EA) patient required subsequent transferal to CUH for intensive cardiopulmonary care after successful delayed primary anastomosis. National protocols for Hirschsprung disease and esophageal atresia were created, and several nationwide registry-based studies and one randomized trial were launched.

Conclusions: While NPSH provided practical and safe framework for dissemination of surgical expertise, seamless continuation of care requires active dialogue and wider engagement of national pediatric surgery community with shared protocols and research. NPSH provides advantageous option for centralization.

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IN03_LO / 09:20 – 09:30

DESIGN, FABRICATION, AND CHARACTERIZATION OF LIVER CHIPS: AN ALTERNATIVE PLATFORM FOR EXPERIMENTAL HEPATOBILIARY RESEARCH

Emil Mammadov[1,2], Buket Baddal[3,2]
[1]Department of Pediatric Surgery, Dr. Burhan Nalbantoğlu State Hospital, Nicosia, Cyprus. [2]Microfluidics Research Group, DESAM Institute, Nicosia, Cyprus. [3]Department of Microbiology, Near East University Medical Faculty, Nicosia, Cyprus

Abstract

Aim of the Study: Microfluidic tissue chips (organ on a chip) enable three-dimensional cell culture in specially designed microfluidic channels which represent complex tissues and allow fine-tuned experiments and analyses which cannot be performed with conventional cell culture or animal models. The aim of this study is to establish and characterize a dynamic microfluidic liver-chip with a physiological secretion function, continuous flow, and compatibility with monitoring toxicity reactions.

Methods: The chip molds were manufactured by CNC milling from aluminium. Two chip parts were molded from polydimethylsiloxane (PDMS) and assembled using Transwell membrane in between as the permeable barrier. After assembly the chip consisted of two micro-channels, an upper channel for hepatocytes, and a lower microvascular channel containing endothelium that can mimic blood circulation (*Figure-1*). For characterization, the liver chips were pre-coated with collagen type I and seeded with HepG2 cells. Cell proliferation and monolayer formation were followed via direct microscopy. Toxicity in monolayer-forming cells was determined by lactate dehydrogenase (LDH) assay. Albumin, alpha-fetoprotein (AFP), ALT and AST secretions were also investigated to determine viability.

Main results: LDH output readings demonstrated that the designed microfluidic chip was non-toxic to HepG2 cells. Albumin, AFP, ALT and AST secretion was detected in output media which showed healthy proliferation of the cells in the chips.

Conclusions: Our study demonstrates the design and fabrication of a physiologically relevant microfluidic liver chip model that can be a potential new platform in hepatobiliary surgical research.

Figure-1: Fabricated microfluidic liver chip (***purple****: upper channel,* ***pink****: lower channel*)

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IN04_LO / 09:30 – 09:40

DEVELOPMENT AND VALIDATION OF AN INANIMATE SIMULATION-BASED TRAINING MODEL FOR OPEN DUODENAL ARTRESIA REPAIR

Julia Govaerts[1], Joyce-Manyi Bakia[1], Guus Bökkerink[2], Ivo de Blaauw[1], Rene Wijnen[3], Sanne Botden[1], Maja Joosten[4]
[1]Radboudumc - Amalia Children's hospital, department of pediatric surgery, Nijmegen, Netherlands. [2]Princess Maxima Center, department of pediatric surgery, Utrecht, Netherlands. [3]Erasmus MC – Sophia Children's hospital, department of pediatric surgery and coordinator of ERNICA, Rotterdam, Netherlands. [4]Zuyderland medisch centrum, department of surgery, Heerlen, Netherlands

Abstract

Aim of the Study: Duodenal atresia (DA) is a rare congenital malformation which requires surgery within the first days of life. To acquire the skills needed for the repair of this rare malformation, especially regarding the complex diamond-shaped anastomosis, training is needed. Therefore, we aimed to develop and validate a new low-budget training model for open duodenal atresia repair.

Methods: First, a partly reusable and affordable open DA-repair model was developed. Next, participants were recruited during the EUPSA congress 2022. They were asked to train on this model and subsequently complete a questionnaire regarding their surgical experience followed by their opinions on the component steps, realism, and usability of the model, rated on a 5-point Likert-scale.

Main Results: A total of 46 participants were recruited, 35 in the target group (consisting of pediatric surgical residents, fellows and less experienced pediatric surgeons) and 11 in the expert group. The model was rated as a suitable training tool for the component steps of open DA repair with a median of 4.0 (IQR 2), by both the target group and experts. All aspects were rated significantly better than a neutral opinion (rated 3 on a 5-oint Likert-scale), with the highest ratings for the practice of the diamond shaped anastomosis (median 5.0, IQR 1).

Conclusions: This study shows that this newly developed DA-repair model was considered to be a suitable training tool for the steps of the duodenal atresia model, using a diamond-shaped anastomosis, by both expert pediatric surgeons and the target group for this training.

Table 1: The rating of the statements on training on the DA-repair model

Statements on training on the DA-repair model *Median (interquartile range)*	Total group *(n=46)*	Target Group *(n=35)*	Expert Group *(n=11)*	P-value*
Training on the model is a valuable use of time	5.0 (1)	5.0 (1)	5.0 (1)	0.899
The model has the appropriate level of difficulty	4.0 (1)	4.0 (1)	4.0 (1)	0.685
The skills learned with the model can be transferred to the clinical setting	4.0 (1)	4.0 (1)	4.5 (1)	0.631
The model is helpful in teaching the diamond-shaped anastomosis	5.0 (1)	5.0 (1)	5.0 (1)	0.576
It provides a structured way to learn the different steps of duodenal atresia repair with poster guidance	5.0 (1)	5.0 (1)	4.5 (1)	0.648
Repeating this exercise in the future would be helpful in the training process	5.0 (1)	5.0 (1)	5.0 (1)	0.859
The model is a valuable addiction as take-home model for repetitive practice	5.0 (1)	5.0 (1)	5.0 (1)	0.621
The model is a suitable exercise to perform during a workshop with expert guidance	5.0 (1)	5.0 (1)	5.0 (1)	0.415

Data are presented as median (interquartile range). The statistical differences in comparing the opinions of the groups were calculated with a Mann-Whitney-U test on a two-tailed significance level of p<0.05.

IN05_LO / 09:40 – 09:50

INITIAL EXPERIENCES OF INTRAOPERATIVE 3D HOLOGRAM SUPPORT WITH MIXED REALITY NAVIGATION IN PEDIATRIC ENDOSURGERY –ULTIMATE IMAGE-GUIDED FUTURE PRECISE SURGERY

Koshiro Sugita[1], Shun Onishi[1], Toshio Harumatsu[1], Maki Sugimoto[2], Nanako Nishida[1], Chihiro Kedoin[1], Ayaka Nagano[1], Masakazu Murakami[1], Takafumi Kawano[1], Mitsuru Muto[1], Satoshi Ieiri[1]
[1]Department of Pediatric Surgery, Research Field in Medical and Health Sciences, Medical and Dental Area, Research and Education Assembly, Kagoshima University, Kagoshima, Japan. [2]Innovation Lab, Teikyo University Okinaga Research Institute, Kagoshima, Japan

Abstract

Aim of the study: The aim of this study was to investigate the potential of an intraoperative 3D hologram, which was a computer graphics anatomy with mixed reality techniques in pediatric endosurgery. The advantage for the application of a hologram for surgical support are: no sterilized display monitor; better spatial awareness and recognition of anatomy; and 3D images shared by all the surgeons. 3D polygon data using preoperative image data was installed into head mount displays, HoloLens (Microsoft Corporation, Redmond, WA).

Case description: In a Wi-Fi-enabled operative room, several surgeons wearing HoloLens succeeded in sharing the same hologram and moving that hologram from respective operators' angles by means of easy gesture-handling. Laparoscopic choledochal cyst excision and hepaticojejunostomy: Patient was 2-year-old girl. Based on preoperative enhanced CT, 3D vascular anatomy and cholangiography were reconstructed and installed HoloLens. This 3D holographic vascular mapping and cholangiography contributed to more accurate reappearance of the anatomy of choledochal cyst (Fig.1a). Thoracoscopic lobectomy: Patients were 1-year old girl with intralobar pulmonary (IPS) sequestration and 8-month-old boy with congenital pulmonary airway malformation (CPAM). Based on preoperative enhanced CT, 3D vascular anatomy and bronchus were reconstructed and installed HoloLens. Thoracoscopic left lower lobectomy for IPS and right lower lobectomy for CPAM were successfully performed using intraoperative hologram (Fig.1b).

Conclusions: Our initial experience suggested that an intraoperative hologram with mixed reality techniques contributed to pediatric endosurgery. The intraoperative hologram might be a new next-generation operation-supportive tool in terms of spatial awareness, sharing, and simplicity.

IN06_SO / 09:50 – 09:55

3D CT-CLOACAGRAM AS A DIAGNOSTIC IMAGING TOOL FOR PREOPERATIVE PLANNING IN PATIENTS WITH CLOACA

Alejandra Vilanova-Sánchez, Montserrat Bret, Leopoldo Martínez, Alba Sanchez Galan, Virginia Amesty, María José Martínez Urrutya
Children's Hospital La Paz, Madrid, Spain

Abstract

Aim of the Study: The multiple anatomical variations of cloacal malformations and the limitation of 2D imaging make preoperative planning of anorectal-vagino-urethroplasty (ARVUP) challenging. The 3D CT-cloacogram (CT-c) is an imaging test previously proposed to identify such variations and guide the surgeon in preoperative planning. We present our experience with CT-c in patients with cloaca.

Methods: Retrospective review (2018-2022) of patients who underwent CT-c prior to ARVUP. We analysed age, common channel and urethral length, mullerian anomalies (MA), rectal pouch location and ARVUP technique: total urogenital mobilisation (TUM) or complete urogential separation (CUS), and need for vaginal replacement.

Main results: We included 8 patients with age at ARVUP of 7 months (6-11). The common channel lenght (3.8±1.2cm) could be measured in all of them, and urethral length (1.4± 0.6cm) in 6 patients. Five MA were identified (4 didelphys uterus, 1 longitudinal septum). The rectal pouch was identified above the pubococcygeal line in 4/8. Based on the findings, TUM was planned in 2 patients and CUS in 6, with associated vaginal replacement in 4 cases (2 ileum and 2 sigma). Intraoperative findings correlated 100% with those of the CT-c.

Conclusions: In our series the pre-stablished surgical planning by CT-c correlated with the surgical technique performed. We recommend CT-c as a guide to plan the type of reconstruction and to anticipate the need for vaginoplasty.

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IN07_SO / 09:55 – 10:00

VALIDATION OF A NEW 3D PRINTED HIGH FIDELITY MODEL FOR SIMULATION IN PAEDIATRIC PIELOPLASTY

Alessandro Raffaele[1], Fabrizio Vatta[2], Valeria Mauri[3], Erika Negrello[3], Stefania Marconi[4], Ferdinando Auricchio[4], Andrea Pietrabissa[5], Giovanna Riccipetitoni[1]
[1]Department of Pediatric Surgery, Fondazione IRCCS Policlinico San Matteo and University of Pavia, Pavia, Italy. [2]Pediatric Surgery Department, Nantes University Hospital, Nantes, France. [3]SC General Surgery II, Fondazione IRCCS Policlinico San Matteo, Pavia, Italy. [4]Department of Civil Engineering and Architecture (DICAr), University of Pavia, Pavia, Italy. [5]SC General Surgery II, Fondazione IRCCS Policlinico San Matteo and University of Pavia, Pavia, Italy

Abstract

Aim of the Study: Learning in pediatric surgery can be limited by lower incidence of some pathologies due to the progressive reduction in birth rate. In addition, minimally invasive surgery presents its own challenges, such as patient sizes and limited workspaces, requiring high technical skills. We recently developed a new 3D printed simulation model for pyeloplasty (patent pending) for surgical training. Aim of this study is to describe the validation process.

Methods: The model was developed starting from a paediatric CT scan including kidney with pyelo-ureteral junction and the polar vessel. A pool of pediatric surgeons and adult urologists were asked to use the model and answer anonymously a specific 5-point Likert scale questionnaire. The variables found in the questionnaire were normally distributed in the Shapiro-Wilk test and were reported as mean ± standard deviation. Statistical analysis was performed using "R" software, version 4.

Main results: 16 surgeons tested the simulation model, each participant performed both laparoscopic vascular hitch and dismembered pyeloplasty. In general, the model obtained validation on all the aspects investigated: anatomical characteristics, realism of the materials and of the experience. Utility of the simulation model in surgical education was evaluated with an average score of 4.94/5.

Conclusions: Our paediatric 3D printed model can be considered a high-fidelity model for advanced simulation both in terms of face and content validity. The model was considered particularly useful as a training tool, to be used in a routine and standardized way in the surgical education.

IN08_SO / 10:00 – 10:05

PEDIATRIC ENDOSCOPIC SUBCUTANEOUS MASTECTOMY (PESMA) WITH LIPOSUCTION IN ADOLESCENTS WITH GYNECOMASTIA: A MULTICENTER EXPERIENCE.

Ciro Esposito[1], Francois Varlet[2], Aurelien Scalabre[2], Benedetta Lepore[1], Mariapina Cerulo[1], Fulvia Del Conte[1], Vincenzo Coppola[1], Roberto Carulli[1], Francesca Carraturo[1], Maria Escolino[1]
[1]Federico II University Hospital, Naples, Italy. [2]CHU de Saint-Etienne, Saint-Etienne, France

Abstract

Aim of the Study: We aimed to describe technical standardization of pediatric endoscopic subcutaneous mastectomy (PESMA) with liposuction.

Methods: All adolescents with primary gynecomastia, operated using PESMA with liposuction over the period June 2014-July 2022, were included. After patient installation, 3 trocars were placed on the mid-axillary line. The technique included 5 steps: (1) subcutaneous injection of lipolysis solution and liposuction; (2) creation of working space using an inflated balloon; (3) gland dissection using 5-mm sealing device; (4) specimen extraction; (5) suction drainage tube placement.

Main results: Twenty-eight boys with Simon's grade 2B and 3 gynecomastia, undergoing PESMA with liposuction over the study period, were included. Mean patient age was 16 years (range 15-18). Gynecomastia was bilateral in 23/28 (82.1%) and unilateral in 5/28 (17.9%). One (3.6%) conversion to open was reported. The mean operative time was 87 minutes (range 98-160) for unilateral and 160 minutes (range 140-250) for bilateral procedure. The mean length of stay was 2.2 days (range 1-4). Patients wore a thoracic belt for 15 up to 30 days postoperatively. Post-operative complications (Clavien 2) occurred in 5/28 (17.9%): 2- or 3-mm second-degree burns in 4/28 (14.3%) and subcutaneous seroma in 1/28 (3.6%). Aesthetic outcomes were very good in 25/28 (89.3%). Three (10.7%) had minimal breast asymmetry, without any patient discomfort.

Conclusions: PESMA combined with liposuction was feasible and safe for surgical treatment of gynecomastia in this selected patient cohort. Although technically challenging, this procedure provided very good aesthetic results, without scars on the anterior thoracic wall.

IN09_SO / 10:05 – 10:10

PHOTOACOUSTIC IMAGING ENABLES HIGH-RESOLUTION DELINEATION OF TUMOUR HETEROGENEITY IN NEUROBLASTOMA

Laura Privitera[1,2], Yong Hu[3], Olumide Ogunlade[3], Olumide Ogunbiyi[4], Ciaran Hutchinson[4], Neil Sebire[4], Paul Beard[3], Stefano Giuliani[1,5]
[1]Cancer Section, Developmental Biology and Cancer Programme, UCL Great Ormond Street Institute of Child Health, London, United Kingdom. [2]Wellcome / EPSRC Centre for Interventional and Surgical Sciences (WEISS), London, United Kingdom. [3]University College London, Department of Medical Physics and Biomedical Engineering, London, United Kingdom. [4]Department of Histopathology, Great Ormond Street Hospital for Children NHS Trust, London, United Kingdom. [5]Department of Specialist Neonatal and Paediatric Surgery, NHS Foundation Trust, Great Ormond Street Hospital for Children, London, United Kingdom

Abstract

Aim of the Study: Neuroblastoma (NB) surgery involves extensive vascular dissection, and surgeons have no tool to differentiate viable tumour from necrotic/fibrotic post-chemotherapy changes. Photoacoustic Imaging (PAI), an emerging optical imaging technique, has been employed to obtain high-resolution 3D reconstruction of tumour vasculature. Our pilot study aims to assess PAI's abilities to differentiate viable and non-viable areas of human NB.

Methods: Human samples taken from primary NB post rapid COJEC chemotherapy were collected. Formalin-fixed 1cm thick slices were scanned with a pre-clinical high-resolution planar Fabry-Perot PAI scanner. Ultrasound gel was used to achieve acoustic coupling between the samples and the scanner. Different excitation wavelengths (620–920nm range) were used for each section to optimise the acquisition of the largest number of features and obtain good tissue penetration. R&D#20BO02.

Main results: Highly heterogeneous NB samples were categorised with heat mapping to obtain visual localisation of viable and non-viable areas (Fig.A). Scans acquired using an excitation wavelength of 620nm allowed a tissue-penetration depth of ≈1.5mm, which was associated with a high-contrast delineation of macroscopically different regions (Fig.B). A tissue-penetration of ≈3mm was achieved using an excitation of 680nm. While this was associated with a reduced imaging resolution, increased penetration enabled a better characterisation of the tumour heterogeneity, with good delineation of different tissue components (Fig.C). PAI images obtained at 920nm allowed delineation of a nodule of viable tumour.

Conclusions: PAI differentiates distinct areas in human NB. Our data must be further validated, but they show potential for translation into the operating theatre.

IN10_SO / 10:10 – 10:15

THE EUROPEAN PEDIATRIC SURGICAL AUDIT (EPSA): IMPROVING QUALITY OF CARE IN RARE CONGENITAL MALFORMATIONS

Nadine Teunissen[1,2], Daniel Rossi[1,2], Michel Wouters[2], Simon Eaton[1,3], Ernest van Heurn[4], René Wijnen[1]
[1]Erasmus University Medical Centre - Sophia Children's Hospital, Rotterdam, Netherlands. [2]Dutch Institute for Clinical Auditing, Leiden, Netherlands. [3]UCL Great Ormond Street Institute of Child Health, London, Netherlands. [4]University of Amsterdam and Vrije Universiteit, Emma Children's Hospital, Amsterdam, Netherlands

Abstract

Aim of the study: The European Pediatric Surgical Audit (EPSA) was initiated in 2014 to benchmark care for Dutch patients with several congenital anomalies. In 2020 the audit became the official registry of the European Reference Network for Inherited and Congenital Anomalies (ERNICA). We aim to provide an overview of the EPSA|ERNICA registry.

Methods: The EPSA is a prospective patient registry covering five conditions: esophageal atresia, congenital diaphragmatic hernia, omphalocele, gastroschisis, and M. Hirschsprung. Data collected comprise baseline characteristics and treatment- and outcome variables, permitting calculation of disease-specific, hospital-level quality indicator results reflecting between-hospital variation. This practice and outcome variation is fed back as actionable information to clinicians on a web-based, real-time dashboard to focus improvement initiatives. In addition, an annual feedback session is organized to reflect on improvement ideas jointly.

Main results: Between 2014 and 2020, coverage of all six Dutch pediatric surgical centers was achieved, cumulatively registering 1098 treated patients. In 2021-2022, nine additional expert ERNICA centers from Finland, Sweden, Denmark, Germany, and Belgium connected to the EPSA, rapidly increasing the number of registered patients to 1522. Currently, the expansion of European hospitals and registered conditions is ongoing.

Conclusions: The EPSA aspires to become an all-encompassing registry, including all European patients treated for various congenital anomalies. Henceforward, the focus will be on further expansion. Additionally, we will encourage local improvement efforts evolved from registry results, expectantly decreasing hospital variation. Finally, realizing joint research initiatives will increase our knowledge of these rare conditions and optimize their care.

IN11_SO / 10:15 – 10:20

MULTIMODALITY IMAGING AND VIRTUAL REALITY TO REDUCE RISK OF INJURY TO THE ARTERY OF ADAMKIEWICZ DURING PARASPINAL THORACIC TUMOUR RESECTION

Arun Kelay[1], Endrit Pajaziti[2], Claudio Capelli[3], Ahmed Ibrahim[1], Tom Watson[1], Fergus Robertson[1], Adam Rennie[1], Premal Patel[1], Dhanya Mullassery[1], Silvia Schievano[3], Stefano Giuliani[1,4]
[1]Great Ormond Street Hospital for Children NHS Foundation Trust, London, United Kingdom. [2]UCL Institute of Cardiovascular Science, London, United Kingdom. [3]UCL Institute of Cardiovascular Sciences, London, United Kingdom. [4]UCL Great Ormond Street Institute of Child Health, London, United Kingdom

Abstract

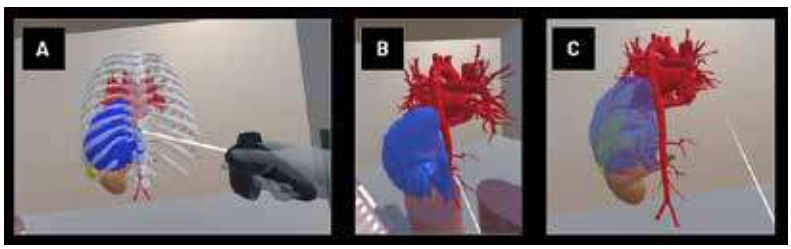
Aim of the Study: Safe resection of left paraspinal thoracic (T8-T12) tumours requires knowledge of the course of the artery of Adamkiewicz (AOA), the main supplier to the anterior spinal artery (ASA). Injury to the AOA can cause paraplegia and bladder/bowel dysfunction. We present the first application of 3D multimodality imaging combined with virtual reality (VR) to assess the relationship between AOA and a large thoracic neuroblastoma.

Methods: A 20-month-old boy with left paraspinal neuroblastoma (T6-L1) underwent thoracic magnetic resonance imaging (MRI) and dedicated spinal computed tomography angiography (CTA) to identify the AOA during preoperative workup (Figure 1). MRI and CT images were post-processed to reconstruct in 3D the AOA and adjacent structures. After obtaining consent, these were imported into an in-house developed VR platform to assess the anatomical relationship between the different structures.

Main results: CTA showed a dominant supply to ASA from AOA at T12. The tumour was reconstructed from MRI and registered to CT reconstructions using anatomical landmarks. VR provided an understanding of the spatial relationship between AOA and the tumour, thoracic aorta, spinal cord, vertebrae, ribs and costovertebral space (Figure 2) by allowing the interactive removal of different structures to follow the course of the AOA.

Conclusions: VR can support surgical planning in paraspinal thoracic tumours by facilitating assessment of the relationship between AOA and tumour, essential to avoid spinal cord injury. We recommend this type of 3D preoperative imaging over traditional cross-sectional imaging and angiography as the level of information is superior, with no procedural risks.

Figure 1.



IN12_SO / 10:20 – 10:25

A DEEP LEARNING BASED APPROACH FROM HISTOLOGICAL SECTIONS OF POST PULL-TROUGH SPECIMENS IN HIRSCHSPRUNG'S DISEASE (HD): PRELIMINARY RESULTS.

Miriam Duci[1], Andrea Pretto[2], Alessia Magoni[2], Piergiorgio Gamba[1], Luisa Santoro[3], Francesca Uccheddu[2], Francesco Fascetti-Leon[1]
[1]Pediatric Surgery Unit, Department of Women's and Children's Health, University of Padova, Italy, Padova, Italy. [2]Department of Industrial Engineering, University of Padova, Italy, Padova, Italy. [3]Surgical Pathology & Cytopathology Unit, Department of Medicine - DIMED, University of Padova, Padova, Italy., Padova, Italy

Abstract

Aim of the study: Hirschsprung's disease (HD) is a rare condition that requires experienced surgeons and pathologists' cooperation for correct diagnosis and treatment. Accurate assessment of ganglion cell density and hypertrophy of nerves in histological sections are the key for planning a correct surgery, needed to remove the non-functioning bowel. Such analysis may be challenging for the pathologist, time-consuming, and prone to errors, in particular in centres with low patients' volume. We present an artificial intelligence-based method to identify and count ganglionic cells and hypertrophic nerves.

Methods: The material used in this research was derived from formalin fixed paraffin embedded tissue. Hematoxylin-eosin stained slides were at X10 magnification. These slides were annotated by expert pathologist to identify ganglionic cells and nerves.

Main results: A pathologist and a surgeon experienced in HD histology evaluated and annotated 108 samples to train a U-NET model. Images were divided into square parts to match the input dimension of the NET and to increase the number of samples. The resulting dataset was then further manipulated with data augmentation techniques. 21600 images of 256x256 pixels are used to train and test the network, and the outputs were compared to the hand counting findings produced by a skilled pathologist. The results show a promising robustness of detection accuracy for ganglion cells of this U-net based technique.

Conclusions: The deep learning-based approach on neuroenteric histology might be the tool for standardizing and streamlining the diagnosis for HD patients and the training of pathologists.

IN13_SO / 10:25 – 10:30

TREATMENT OF PEDIATRIC BENIGN UPPER GASTROINTESTINAL STRICTURES WITH ENDOSCOPIC ELECTROSURGICAL KNIFE INCISION

Ali Ekber Hakalmaz[1], Merve Gokbuget[1], Rahsan Ozcan[1], Pınar Kendigelen[2], Gonca Topuzlu Tekant[1]
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Abstract

Aim of the Study: To evaluate the results of endoscopic electrosurgical knife (ESK) incision technique in management of pediatric benign gastrointestinal tract strictures (GIS).

Methods: Benign GIS cases treated with endoscopic ESK (Olympus Dual-Knife) in our department between June 2019 and January 2023 were reviewed retrospectively.

Main results: The mean age of six cases (3 boys, 3 girls) was 2.8 years (1-5 years). The diagnoses were: Congenital esophageal stenosis in three, antral web in two and pyloric stenosis related to corrosive injury in one. Endoscopic ESK incision was used in all cases as the primary treatment modality. Two of the 3 patients with congenital oesophageal stenosis had oesophageal atresia as an additional anomaly. The average duration of the procedure was 48 minutes (40-65 minutes), the average feeding time after the procedure was 4.8 hours (4-6 hours), and the average hospital stay was 26.2 hours (12-48 hours). A second ESK incision was performed in two of the cases (at the 1st and 30th months postoperatively) due to the ongoing stenosis in the endoscopy. For the antral web patients, the procedure was repeated three times, one month apart. The mean follow-up period was 8.8 months (2-15 months) and on current follow-up all cases are free of complaints and having adequate weight gain.

Conclusions: Endoscopic ESK incision treatment of benign gastrointestinal strictures in the pediatric age group is an effective, painless procedure with short hospital stay and rapid return to normal diet.

11:30 - 13:00

Scientific Session III-I

Basic Science (Parallel Session) /
(M1) Regency 2

Chair:

Nana Nakazawa (JAP)
Agastino Pierro (CAN)

BS01_LO / 11:30 – 11:40

PRENATAL DERIVATION OF PRIMARY FETAL ORGANOIDS OF MULTIPLE TISSUE IDENTITY FROM THE HUMAN AMNIOTIC FLUID

Mattia Francesco Maria Gerli[1], Giuseppe Cala[1], Max Beesley[1], Beatrice Sina[2], Lucinda Tullie[1], Francesco Panariello[3], Federica Michielin[1], Yunyan Sun[1], Joseph Davidson[1], Francesca Russo[4], Brendan Jones[1], Dani Lee[1], Savvas Savvidis[1], Theodoros Xenakis[1], Ian Simcock[5], Anna Straatman-Iwanowska[6], Robert Hirst[6], Anna David[1], Christopher O'Callaghan[1], Alessandro Olivo[1], Simon Eaton[1], Stavros Loukogeorgakis[1], Davide Cacchiarelli[3], Jan Deprest[4], Vivian Li[7], Giovanni Giobbe[1], Paolo De Coppi[1]
[1]Universit College London, London, United Kingdom. [2]Politecnico di Milano, Milan, Italy. [3]TIGEM, Pozzuoli, Italy. [4]KULeuven, Leuven, Belgium. [5]Great Ormond Street Hospital, London, United Kingdom. [6]Leichester University, Leichester, United Kingdom. [7]The Crick Institute, London, United Kingdom

Abstract

Aims of the Study: The aim of this work is to establish a platform that allows the derivation of primary fetal organoids prenatally, starting from amniotic fluids (AF) sampled through routine clinical procedures. Fetal organoids are expanded, characterized for tissue identity, and used to develop advanced predictive prognostic models of congenital diseases.

Methods: The living cell fraction was isolated from human AF, seeded in 3D extracellular matrix gel and cultured in a media permissive for the formation of organoids. AF-derived organoids (AFO) were expanded clonally and characterized for gene and protein expression. Validation was conducted via assays aiming at testing tissue-specific maturation potential, enzymatic activity, and protein function.

Main results: We successfully derived primary organoids from 18 AF samples spanning 10 to 34 gestational age weeks. We expanded and characterized 199 clonal AFO lines through RNA sequencing to assess their tissue identity. AFO manifested intestinal, renal, and pulmonary identity, also confirmed at protein level. When subjected to functional testing, AFO demonstrated differentiation potential, enzymatic activity, and morphological hallmarks of their tissues of origin. Importantly, significant phenotypical alterations were detectable in AFO derived from congenital malformation cases, highlighting their potential use for disease modelling.

Conclusions: This work shows the derivation of primary fetal organoids prenatally through a minimally invasive approach does not require tissue biopsies allowing for the continuation of pregnancy. AFO are autologous to the fetus, and showed intestine, kidney, and lung identity. Functional assays highlighted potential use of AFO to model congenital conditions, implement novel predictive diagnosis and regenerative medicine strategies.

BS02_LO / 11:40 – 11:50

SITE-DEPENDENT ENTERIC NEURAL CREST CELL DIFFERENTIATION FOLLOWING EX-VIVO TRANSPLANTATION INTO AGANGLIONIC MOUSE GUT

Nana Nakazawa-Tanaka[1], Naho Fujiwara[2], Katsumi Miyahara[3], Masahiko Urao[1], Atsuyuki Yamataka[2]
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Abstract

Aim of the Study: In recent years, many published studies have focused on the development of cell therapy for Hirschsprung disease (HD). However, it is still unclear if transplanted enteric neural crest-derived cells (ENCCs) behave normally in aganglionic gut. Thus, we designed this study to investigate ENCC behavior by transplanting ENCCs into different regions of aganglionic gut using endothelin receptor B (*Ednrb*) knockout (KO) mice.

Methods: ENCCs were isolated from Sox10 Venus transgenic mouse gut on embryonic day 18.5 (E18.5) and neurospheres (NS) were generated. Then, NS were transplanted into aganglionic KO and wildtype (WT) gut transected just distal to the ENCC wavefront (KO-wf: n=4, WT: n=10), and into KO transects at a site equivalent to WT (KO-d: n=4) on E12.5. The area of migrated Sox10 positive ENCCs was measured following 24h, 48h and 72h of culture. ENCC differentiation was evaluated using whole-mount immunohistochemistry.

Main Results: In all groups, the transplanted ENCCs migrated to form the myenteric and submucosal plexus (Figure). At 24h and 48h, the areas of Sox10-positive ENCCs were significantly lower in KO-wf compared to the KO-d and WT groups. At 72h, Tuj-1 expression increased in KO-wf, while GFAP expression increased in KO-d (Figure), suggesting neuronal differentiation in KO-wf versus glial differentiation in KO-d.

Conclusions: In this study, altered Tuj-1 and GFAP expression suggests differences in ENCC differentiation depending on the site of transplantation. The successful formation of both the submucosal and myenteric plexus following transplantation into aganglionic gut highlights the future potential of cell therapy for HD.

BS03_LO / 11:50 – 12:00

ALTERED EXPRESSION OF SEMAPHORIN3A AND NEUROPILIN1 IN ENTERIC NEURAL CREST CELLS FOLLOWING TRANSPLANTATION INTO THE AGANGLIONIC GUT

Naho Fujiwara[1], Katsumi Miyahara[2], Nana Nakazawa-Tanaka[3], Chihiro Akazawa[1], Atsuyuki Yamataka[1]
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Abstract

Aim of the Study: The enteric nervous system (ENS) is the network of neurons and glial cells that lies within the gastrointestinal tract and is largely derived from enteric neural crest cells (ENCCs). Disorders that arise due to defective ENCC development are termed neurocristopathies, one example being Hirschsprung's disease (HD). Recent studies have reported that Semaphorin3A (Sema3A), an axon guidance protein, and its receptor, Neuropilin1 (NRP1), are expressed in the rat gut at early postnatal stages and are crucial regulators of ENS connectivity. Thus, we designed this study to investigate Sema3A and NRP1 gene expression in ENCC transplanted into both control and Endothelin-B receptor knockout (*EDNRB* KO) mouse gut *in vitro.*

Methods: ENCC were isolated from the fetal gut of *SOX10*-VENUS + mice, dissected on embryonic day 13.5 (E13.5) and dissociated. They were cultured for 7 days under non-adherent conditions to generate neurospheres, which were subsequently co-cultured with either dissociated control or *SOX10*-VENUS- *EDNRB* KO mice gut, both small intestine and colon, on E13.5 (Figure A). After 4 days of culture, qRT- PCR was performed using transplanted cells to quantify Sema3A and NRP1 gene expression (n=5) (Approval No.#2021213).

Main results: qRT-PCR analysis revealed a significant upregulation of the Sema3A gene in the HD group compared to controls ($p<0.05$), and a significant downregulation in the NRP1 gene in the HD group compared to controls ($p<0.05$) (Figure B).

Conclusions: Altered Sema3A and NRP1 expression in ENCCs transplanted to both control and HD gut may contribute to the disruption of normal ENCC development during gestation.

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BS04_SO / 12:00 – 12:05

EXOGENOUS VEGF SUPPLEMENTATION AMELIORATES PULMONARY HYPOPLASIA IN AN EX-VIVO HUMAN MODEL OF FETAL LUNG MECHANICAL COMPRESSION.

Soichi Shibuya[1,2], Federica Michielin[2], Jessica Allen-Hyttinen[3], Ahmed Alhendi[3], Joe Davidson[2], Francesca Russo[4], Simon Eaton[2], Peter Carmeliet[5], Jan Deprest[4], Marco Nicolic[3], Paolo De Coppi[2,6], Stavros Loukogeorgakis[2,6]
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Abstract

Aim of the study: Reduced levels of VEGF have been detected in animal models of CDH, but the role of VEGF and its therapeutic targeting have not been investigated in a human. We aimed to develop a human ex vivo model of fetal lung compression relevant to CDH to determine the role of VEGF in CDH-associated lung hypoplasia.

Methods: Histological analysis was used to assess epithelial development and VEGF expression in 18-22 post-conception weeks (pcw) postmortem lungs from CDH fetuses. Pulmonary tissue from normal 7-9 pcw human fetuses was used to develop a model of compression, in which a mechanical constraint was added to cultured lung fragments (Figure 1a). Tissue morphology, branching morphogenesis and cell proliferation were assessed. Single-cell RNA sequencing (RNASeq) assessed VEGF expression in different cell types.

Main Results: Lung hypoplasia in CDH fetal tissue was associated with impaired VEGF expression and reduced epithelial cell proliferation. Our model recapitulated impaired branching morphogenesis observed in CDH fetal lungs, and RNASeq revealed reduced expression of the proliferation signature of terminal bud epithelial progenitors with concomitant reduction in expression of VEGF (Figure 1b-c). Importantly, exogenous supplementation of recombinant VEGF in this model induced a significant increase of terminal bud progenitor cell proliferation, comparable to non-compressed control tissue (Figure 1d).

Conclusions: We have developed the first ex-vivo human model mimicking CDH-associated lung hypoplasia. Our work provides the rationale for therapeutic targeting of the VEGF pathway in the lungs of CDH fetuses to rescue pulmonary pathology before birth.

BS05_SO / 12:05 – 12:10

MECHANICAL COMPRESSION DISRUPTS THE HIPPO SIGNALING PATHWAY AND RESULTS IN IMPAIRED VASCULAR DEVELOPMENT IN HUMAN FETAL LUNG EXPLANTS

Rebeca Lopes Figueira, Kasra Khalaj, Fabian Doktor, Lina Antounians, Augusto Zani
The Hospital for Sick Children, Toronto, Canada

Abstract

Aim of the study: The pathogenesis of abnormal vascular development in babies with congenital diaphragmatic hernia (CDH) remains poorly understood. Mechanical compression plays a key role in CDH lungs. The Hippo pathway is essential during lung development and its dysregulation has been associated with disruption of lung branching morphogenesis. Herein, we used a novel *ex vivo* human model of CDH and hypothesized that mechanical compression impairs normal lung vascularization via disruption of the hippo signaling pathway.

Methods: *Lung explants* (IRB#10-0128-E): samples were obtained from terminations of healthy fetuses (n=4, no CDH) at 18-19 weeks of gestation and cultured as explants in 10% Matrigel for 24h. Explants (n=6) were subjected to mechanical compression by applying a directional non-uniform static load with a novel bioengineered system (load=0.22kPa).
Vascular remodeling: groups were compared for mean wall thickness (MWT) of pulmonary arterioles by immunofluorescence and expression of angiogenesis markers (VEGFA/VEGFR1/VEGFR2 by RT-qPCR).
Hippo pathway: lungs were assessed for expression of upstream (SAV1/YAP/TAZ/TEAD) and downstream (CYR6/ANKDR1/CTGF) genes (RT-qPCR).
Statistics: one-way ANOVA (Tukey post-test).

Main results: Compared to non-compressed lungs, explants subjected to mechanical compression had increased MWT (Fig.1A), reduced VEGFA, VEGFR2, and VEGFR1 expression (Fig.1B), and downregulation of all upstream and downstream genes of the hippo signaling pathway (Fig.1C).

Conclusions: Mechanical compression of human fetal lungs causes vascular remodeling and disruption of the Hippo signaling pathway in an *ex vivo* human model of CDH. Targeting this pathway may offer an opportunity to rescue normal fetal lung vascular development and prevent postnatal pulmonary hypertension.

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BS06_SO / 12:10 – 12:15

A NOVEL HORMONAL TREATMENT TO REDUCE GUT AND BRAIN INJURY IN EXPERIMENTAL NEC

George Biouss[1,2], Carol Lee[1], Bo Li[1], Mina Yeganeh[1,2], Andrea Zito[1,2], Felicia Balsamo[1,2], Khosrow Adeli[1], Agostino Pierro[1]
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Abstract

Aim of the study: Necrotizing enterocolitis (NEC) is a devastating disease commonly associated with neurodevelopmental delay. NEC is characterized by feeding intolerance and gastrointestinal dysmotility which suggests impairment of gut hormone secretion. There is emerging evidence that gut hormones, particularly the incretin glucagon-like peptides (GLP), may have a multifaceted role in the gut-brain axis impacting intestinal development and brain resiliency in NEC. Herein, we aimed to understand the effect of GLP1 signaling modulation in promoting recovery from intestinal and brain injury in NEC.

Methods: NEC was induced in postnatal day 5 (p5) mice using hypoxia, gavage feeding (hyperosmolar formula), and oral lipopolysaccharide (4mg/kg). Breastfed pups at p9 served as control. Exendin 4 (Ex4), a GLP1 receptor (GLP1R) agonist, was injected intraperitoneally, twice a day on p7-p9. In the intestine, gene expression (RT-qPCR) of pro-inflammatory cytokines il6 and tnfa and stem cell marker lgr5 was measured. In the brain, protein expression (Western) microglia activation marker CD68 and astrocyte proliferation marker GFAP were evaluated in the hippocampus.

Main results: Following Ex4 (GLP1R agonist) administration, pro-inflammatory cytokines il6 and tnfa were reduced in NEC intestine (Fig. a). Intestinal stem cell marker lgr5 expression was restored after Ex4 administration (Fig. b). In the brain, Ex4 reduced microglia activation and astrocyte proliferation reducing neuroinflammation in the NEC hippocampus (Fig. c).

Conclusions: Administration of Ex4 enhances intestinal stem cell activity and promotes neuroprotection in NEC. This study highlights the therapeutic potential of a novel hormonal treatment to counteract the intestinal and neurological damage caused by NEC.

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BS07_SO / 12:15 – 12:20

HITTING DIFFERENT - DIFFERENTIATION OF INTESTINAL COLONIC ORGANOIDS INFLUENCES THE INTESTINAL BARRIER FUNCTION UNDER PROINFLAMMATORY CONDITIONS

Johanna Hagens, Pauline Schuppert, Clara Isabell Philippi, Hans Christian Schmidt, Zhongwen Li, Laia Pagerols Raluy, Konrad Reinshagen, Christian Tomuschat
University Medical Center Hamburg-Eppendorf, Hamburg, Germany

Abstract

Aim of the Study: Enteroids as a novel model for intestinal barrier investigations can be preserved as stem-cell cultures or differentiated into an *in vivo* like status. Literature often lacks specification about the presence of enteroid differentiation, challenging translation of the results into clinical context. This work aimed to assess possible differences between differentiated and undifferentiated enteroids in response to proinflammatory stimulation, indicated by intestinal barrier integrity.

Methods: Intestinal colonic organoids derived from human ganglionic Hirschsprung (gHIO, n = 10) and healthy control samples (CIO, n = 10) were either cultured in standard growth medium or differentiated using a differentiation medium. Enteroids were stimulated with a proinflammatory cocktail containing human TNFα, IL-1β, and IL-6 to simulate intestinal inflammation in an acute or chronic manner. Intestinal barrier marker expression was quantified in Western Blot. Confocal immunofluorescence microscopy (cIF) and a FITC-dextran permeability assay were used to assess intestinal barrier function.

Main results: After differentiation, CIOs displayed enhanced barrier marker expression that was further increased by acute treatment. A protracted proinflammatory treatment, however, caused a decrease. HIOs already showed a downregulation of all measured barrier markers pre-treatment, which only slightly decreased following stimulation. Corresponding results were detected by cIF and FITC-dextran-assay.

Conclusions: The intestinal barrier's homeostasis is significantly impacted by enteroids' differentiation. This underlines the requirement for differentiation in these cultures to faithfully mimic the *in vivo* situation. The overall decreased barrier marker expression in gHIOs adds further evidence to a possible pre-existing damage of Hirschsprung enterocytes as an explanation for their increased proinflammatory susceptibility.

BS08_SO / 12:20 – 12:25

DEVELOPMENTAL DEFECTS IN LUNG PROGENITOR CELLS FROM CDH PATIENTS AND IN NITROFEN LUNG HYPOPLASIA ARE CHARACTERIZED BY ABERRANT NF-KB ACTIVATION

Richard Wagner[1,2], Gaurang M. Amonkar[2], Florentine Dylong[1], Jan Riedel[1], Nicole Peukert[1], Paula Lieckfeldt[1], Wei Wang[2], Andrew Tse[3], Richard Keijzer[3], Martin Lacher[1], Jan Hendrik Gosemann[1], Patricia K. Donahoe[2], Paul H. Lerou[2], Xingbin Ai[2]
[1]University Hospital Leipzig, Leipzig, Germany. [2]Massachusetts General Hospital, Boston, USA. [3]University of Manitoba, Winnipeg, Canada

Abstract

Aim of the Study: Lung hypoplasia is the leading cause of death in CDH patients, but the pathoetiology remains poorly understood. To overcome difficulties of accessing neonatal lung tissue, we derived airway basal stem cells (BSCs) from neonatal tracheal aspirates and studied common pathways between human CDH and the nitrofen rat model.

Methods: Epithelial progenitor cells were derived from tracheal aspirates of newborns. Basal stem cells (BSCs) from CDH patients and non-CDH controls were analyzed by bulk RNA-sequencing, ATAC-sequencing, and air-liquid-interface differentiation. Lung sections from fetal human CDH samples and the nitrofen rat model served for in vivo assessment and validation. Therapeutics to restore CDH specific lung phenotypes and hyperactive NF-kB were evaluated in human stem cell differentiation and the nitrofen rat model in vivo.

Main results: Transcriptomic and epigenetic profiling of CDH and control BSCs revealed a pro-inflammatory signature that was independent of disease severity and hernia size. Moreover, CDH BSCs exhibit defective epithelial differentiation, with retention of undifferentiated markers, that recapitulates epithelial phenotypes found in fetal human CDH lung samples and fetal tracheas of the nitrofen rat model. Particularly, NF-kB was increased in CDH BSCs and in hypoplastic lungs from nitrofen exposed fetuses at different developmental stages (E15; E21). In vitro and in vivo blockade of NF-κB hyperactivity normalizes epithelial differentiation phenotypes of human CDH BSCs and rescues abnormal lung branching and NF- kB signaling in the nitrofen rat model.

Conclusions: Our findings have identified an underlying pro-inflammatory signature, with significant increase in NF-kB signaling as a potential therapeutic target for airway epithelial defects in CDH.

BS09_SO / 12:25 – 12:30

ESOPHAGEAL REPLACEMENT USING AUTOLOGOUS RECELLULARISED SCAFFOLDS IS SAFE AND FEASIBLE IN A PORCINE MODEL

Natalie Durkin[1], Marianna Scuglia[1], Roberto Lutman[1], Giulia Patera[1,2], Daniele Di Biagio[1], Dominika Borselle[3], Koji Yamada[1,4], Conor McCann[1], Matías Garrido Flores[5], Simon Eaton[1], Paola Bonfanti[5], Paolo De Coppi[1,6], Marco Pellegrini[1]
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Abstract

Aim of the Study: To assess feasibility and short-term safety of esophageal defect replacement in pigs with autologous tissue engineered grafts in vivo.

Methods: Donor pig esophagi were decellularized using established protocols. Autologous myogenic cells were derived from rectus abdominis biopsies in mini pigs (n=8) and delivered to scaffolds via microinjection (n=16) prior to bioreactor culture. Grafts were transplanted orthotopically into 2cm esophageal defects via thoracotomy (at ~10kg) with application of intra-luminal PDS stents and vascularizing pleural flaps. Oral feeding commenced on post-operative day (POD) one without the requirement for gastrostomy or nasogastric tube. Planned study end point was six months, with mid-point results available for n=4. All procedures were ethically approved (PPL: P43EF9FB6).

Main results: There were no early post-operative complications (e.g., anastomotic leak, pneumothorax), with 100% 30-day survival (n=4). Epithelial regeneration and vascularization were noted endoscopically by POD 24 in all animals, together with hyperplastic polyps which resolved with steroid treatment. Stent migration requiring replacement occurred after foreign body obstruction in one animal, which experienced recurrent symptoms and required euthanasia at POD 46. Symptomatic strictures after stent degradation occurred in the remaining three animals (>70 days). Successful treatment with balloon dilatation allowed weight gain in line with non-operated age-matched controls (Figure 1).

Conclusions: Tissue engineered grafts for replacement of esophageal defects are safe and feasible at short-term time points in an in vivo porcine model and resemble that anticipated in clinical practice. Regeneration of muscular, epithelial, and neural structures and stricture incidence will be assessed at the 6-month end point.

BS10_SO / 12:30 – 12:35

DECELLULARIZED STOMACH FOR IN VIVO ENGINEERING

Yusuke Shigeta[1,2], Tarek Saleh[1], Giada Benedetti[1], Jinke Chang[3], Elisa Zambaiti[1], Lei Wu[3], Sahira Khalaf[1], Wulei Song[1], Giovanni Giuseppe Giobbe[1], Paolo De Coppi[1]
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Abstract

Aim of the Study: Patients with microgastria or undergoing subtotal gastrectomy are subject to severe gastroesophageal reflux disease, dumping syndrome or other symptoms that dramatically affect their quality of life. Gastric tissue engineering may offer an alternative solution by using organ decellularization as a different source of biomaterial suitable for transplantation. The aim of this study is to investigate the properties and the effect of the decellularized stomach on the growth and differentiation of human gastric organoids.

Methods: Decellularized gastric matrices were prepared from porcine stomachs. Efficient decellularization was evaluated by means of H&E and immunofluorescence for residual nuclei, and Masson trichrome staining for residual collagens. Additionally, glycosaminoglycan (GAGs) and residual DNA contents were also evaluated. Mechanical tensile tests were performed to investigate whether decellularization affects the strength of gastric specimens. Viability assays were performed to assess cytocompatibility with human gastric organoids.

Main results: Histopathology tests, GAGs and DNA assays confirmed the successful decellularization compared to native tissue ($p<0.001$). Extracellular matrix proteins were preserved, while residual glandular cells and muscle fibers were not found. Importantly, no significant difference was shown between native tissue and decellularized samples regarding their ultimate strength and strain at break by the mechanical tensile tests (control n=6, decellularized n=6). Finally, decellularized stomachs could efficiently support the growth of human gastric organoids.

Conclusions: Decellularized porcine stomach patches could be efficiently generated. The scaffolds support the growth and differentiation of human gastric organoids. In the future engineered stomach could be useful for congenital or acquired microgastria.

BS11_SO / 12:35 – 12:40

ESOPHAGEAL TISSUE ENGINEERING: THE EFFECTS OF ADDING MESENCHYMAL STEM CELLS ON A THREE-LAYER HYBRID MODEL INCLUDING EPITHELIAL AND MUSCLE CELLS

Emre Divarci[1], Dilara Lal[2], Kemal Pekmez[3], Umut Zorlu[1], Ecenaz Battaloglu[2], Gizem Ors Kumluoglu[2], Mert Sahinler[2], Yigit Uyanıkgil[4], Aylin Sendemir[2]
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Abstract

Aim of the Study: We aimed to develop a hybrid product by tissue engineering for esophageal replacement.

Methods: Oral mucosal epithelial cells were isolated from New-Zealand type rabbits. Muscle cells were derived from commercial products. Polycaprolactone (PCL) scaffolds were produced by electrospinning-technique. Mesenchymal stem cells (MSCs) were isolated from newborn rabbit umbilical cord and transformed to neuron cells. Scaffolds including epithelial and muscle cells were cultured in bioreactor. Cell response results under dynamic and static conditions were examined under electron microscopy. Scaffold with muscle cells was implanted to omentum and waited for 2 weeks for vascularization. Three-layer hybrid structure was constructed with one-layer epithelium and two-layer muscle cells. MSCs were implanted in one group. Three-layer structure was transposed to native cervical esophagus. The histological analysis was performed in subject groups after sacrification in one and two weeks.

Main Results: Vascularization was observed in scaffold implanted to the omentum. In three-layer hybrid stricture transplanted for one and two weeks, there was a time proportional increase in thickness and cell density for both epithelial and muscular tissues. Immunohistochemical staining was evaluated with anti-occludin, p63, anti-CD31, anti-desmin, neural differentiation of stem cell-related anti-synaptophysin expressions. The stem cell group had even thicker epithelium and muscle tissue than the stem cell-free group.

Conclusions: A tissue-engineered hybrid structure has been obtained to overcome existing problems such as stricture formation and anastomotic leakage. Adding MSCs resulted with significant positive effects which is the first study with stem cells. This study would guide the studies in the field of esophageal tissue engineering.

BS12_SO / 12:40 – 12:45

3D BIOPRINTED PERSONALIZED ARTIFICIAL TISSUE FOR HYPOSPADIAS AND URETHRAL STRICTURES IN A RABBIT EXPERIMENTAL MODEL

Aivaras Grybas[1], Ramune Zilinskaite Tamasauske[2], Povilas Barasa[3], Egidijus Simoliunas[3], Emilija Baltrukonyte[3], Natalija Krestnikova[3], Darius Dasevicius[4], Arunas Zelvys[1], Daiva Baltriukiene[3], Feliksas Jankevicius[1], Gilvydas Verkauskas[2], Virginija Bukelskiene[3]
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Abstract

Aim of the study: complex hypospadias and urethral strictures are challenging conditions causing serious dysfunction and impaired urinary drainage. The autologous skin or buccal mucosa grafts are usually used for reconstruction, but these tissues are limited, and surgery may cause prolonged morbidity. Study goal was to produce and test the bioengineered artificial tissue for urethral reconstruction in rabbit experimental model in vivo.

Methods: 3D bioprinting technology was used to create multilayer artificial urethral tissue. Biocompatible materials, collagen-silk fibroin hydrogel and polycaprolactone, were chosen to manufacture the scaffold. 4 prototypes were tested: A) pure scaffold, B) scaffold supplemented with antifibrotic drug pirfenidone, C) scaffold with differentiated autologous rabbit stem cells, D) scaffold with pirfenidone and stem cells. Study was approved by the Regional Bioethics Committee. 20 animals were used in the experiment. During 3 months of postoperative follow-up, we evaluated weight, temperature, secretions, behaviour, wound healing, laboratory samples, urethrograms, and final histology.

Main results: Composition of scaffolds was gradually improved optimising tensile strength and sutureability. Urethrograms showed advantage of cell-laden scaffold. Weight loss and leukocyturia were most relevant scarring predicting factors. Histologically intensive inflammatory infiltration in A group and multilayer urothelium formation in C and D groups were confirmed.

Conclusions: 3D bioprinted cell-laden and antifibrotic agent supplemented artificial tissue is a promising alternative to other bioengineered urethral replacement. Further studies are necessary to select best artificial tissue model. This project has received funding from European Regional Development Fund No 01.2.2-LMT-K-718-03-0087 under grant agreement with the Research Council of Lithuania (LMTLT).

BS13_SO / 12:45 – 12:50

AUTOLOGOUS UROTHELIAL MICROGRAFTING FROM A CELLULAR PERSPECTIVE

Nikolai Juul[1], Oliver Willacy[1], Clara Chamorro[2], Magdalena Fossum[1,2]
[1]Laboratory of Tissue Engineering, Department of Pediatric Surgery, Rigshospitalet, Copenhagen, Denmark. [2]Laboratory of Tissue Engineering, Department of Women's and Children's Health, Karolinska Institute, Stockholm, Sweden

Abstract

Aim of the Study: Autologous micrografting holds promising potential for developing tissue engineered transplants for reconstructive surgery in congenital malformations. Whereas mechanisms in skin wound healing are previously well described, the current knowledge on urothelial micrografts for bladder augmentation is limited. We aimed to assess the regenerative potential of urothelial micrografts, and furthermore to evaluate paracrine effects of conditioned medium from micrograft cultures and the role of extracellular signal-regulated kinase (ERK) pathways.

Methods: Dissected urothelium from three porcine bladders was cultured in vitro and subdivided at different fragmentation ratios to quantify the relative differences in cell migration, proliferation, and protein expression. Urothelial cell cultures were stimulated with conditioned medium for comparison with fresh culture medium, and with and without an ERK-specific inhibitor.

Main results: Increasing the fragmentation ratio significantly increased the yield of proliferative cells as well as the cell colony expansion areas. A stimulatory effect from conditioned medium was noticeable on both cell proliferation and migration, and the relative expression of phosphorylated ERK (active form) was increased early after stimulation. Furthermore, the stimulatory effects were clearly reversed by addition of an ERK inhibitor.

Conclusions: To our knowledge, our findings provide novel insights to urothelial micrografting, which could be useful in the ongoing development of tissue engineered transplants for human bladder augmentation and other reconstructive procedures. Furthermore, we demonstrated how ERK activation is associated with increased cell migration and proliferation, and that the application of ERK-specific agents could be part of optimizing bladder wound healing in the future.

BS14_SO / 12:50 – 12:55

NEW STOOL COLOR SCREENING FOR BILIARY ATRESIA USING AI TECHNOLOGY

Masayuki Obatake, Yuki Fujieda
Kochi Medical School, Kochi, Japan

Abstract

Aim of the Study: Color card (CC) screening for early diagnosis of biliary atresia (BA) has been widely recognized in the world, but on the other hand, there are several problems such as BA patients with normal CC diagnosis at the first consultation or color stability by printing. We developed a stool color discrimination system based on AI technology (AI screening) in 2016. We conducted a demonstration study of this system for biliary atresia and investigated the usefulness and future potential of AI screening.

Methods: The diaper with the stool of the day was used as a subject at the baby's health checkups around one month after birth. The stool was taken using an iPad connected via Wi-Fi to a main computer with an AI program. After shooting three types of results were displayed on the screen, “no abnormality”, “necessary observation” and “be careful”. In cases of “necessary observation” and “be careful”, the tablet required 2nd shooting for confirmation.

Main results: Between January 2019 and March 2022, 2463 babies received AI screening. There were 2379 cases (96.59%) in “no abnormality”, 3 cases (0.12%) in “necessary observation” and 82 cases (3.29%) in “be careful”. Two of the 82 cases in “be careful” were diagnosed as BA and PFIC2. The sensitivity and specificity were 100% and 96.7%, respectively.

Conclusions: The wrong diagnosis by AI was considered that lack of learning for the aberrant stool color. By learning further types of stool color in the future AI screening will be available instead of CC for BA screening.

13:30 - 14:30

Poster Presentation Session 1

Innovations / Thoracic I
(M2) Studio 1+2

Chair:
Ozlem Boybeyi (TUR)
Tutku Soyer (TUR)

24th EUPSA CONGRESS
June 7 - 10, 2023
Hyatt Regency Hotel IZMIR / TURKIYE
European Paediatric Surgeons' Association

IN01_PO / 13:30 – 13:35

How many cases of experience do instructor-class surgeons require to obtain autonomy for performing advanced endosurgery? - Nationwide survey in Japan

Shun Onishi[1], Masakazu Murakami[1], Katsuhiro Ogawa[2], Shinichiro Yokoyama[3], Yo Kurashima[4], Go Miyano[5], Tetsuya Ishimaru[6], Hiroshi Kawashima[7], Hiroo Uchida[8], Atsuyuki Yamataka[9], Hiroomi Okuyama[10], Satoshi Ieiri[1]
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Abstract

Aim of the Study: For the safe prevalence of pediatric endoscopic surgery, it is essential to build a training curriculum that includes even advanced pediatric endoscopic surgeries (APES), and a survey of the current situation of endoscopic surgery is necessary as a basis for the safe widespread of endoscopic surgery in Japan. This study aims to investigate efficient training curriculum by clarifying instructor class pediatric surgeons' (ICPS) experiences, including autonomy for performing (APES)

Methods: Nationwide questionnaire survey was conducted among pediatric surgeons who have Endoscopic Surgical Skill Qualification (ESSQ) and board-certified instructors of pediatric surgeons who have skills comparable to ESSQ via an online survey. We investigated their past training experiences, desired training curriculum, and the correlation between surgical experience and the level of autonomy for APES.

Main results: Fifty-two participants responded to the survey (response rate: 86.7%). Only 57.7% of the respondents felt they had received enough pediatric endoscopic surgery training. 65.4% of respondents felt a lack of training when encountering difficult situations. 42.6% of the respondents answered on-the-job training had contributed most to their acquisition of endoscopic surgical skills. Ninety percent of respondents thought an educational curriculum for endoscopic surgery, including off-the-job training, is essential during the training period. ICPS acquired performing autonomy with experience of 2-3 cases for most procedures (fundoplication/splenectomy/Hirschsprung's disease/ anorectal malformation/esophageal atresia/choledochal cyst).

Conclusions: The results of this study are expected to aid in the design of an effective curriculum and system for training in pediatric endoscopic surgery for young pediatric surgeons.

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IN02_PO / 13:35 – 13:40

THE ROLE OF INDOCYANINE GREEN IN PEDIATRIC GASTROINTESTINAL SURGERY: A SYSTEMATIC REVIEW.

Carlos Delgado-Miguel[1,2], Juan Camps[2], Francisco Hernández Oliveros[1]
[1]La Paz Children´s Hospital, Madrid, Spain. [2]Prisma Health Children's Hospital, Columbia, USA

Abstract

Aim of the Study: The use of near-infrared fluorescence (NIRF) imaging with indocyanine green (ICG) is actually considered as a very useful tool in decision-making strategy during challenging surgical procedures with growing evidence in the literature.

Methods: We conducted a systematic review with narrative synthesis in conformity with PRISMA guidelines using PubMed, Medline, and EMBASE databases to identify articles describing the gastrointestinal perioperative use of ICG in children. Two independent authors screened all included articles for eligibility and inclusion criteria. We extracted data on study design, demographics, surgical indications, indocyanine green dose, and perioperative outcomes.

Main results: Eleven articles, including 94 pediatric patients, from 2013 to 2022 met the inclusion criteria for narrative synthesis in our systematic review, of which 6/11 (54.5%) were case reports, 4/11 (36.4%) were retrospective studies and 1/11 (0.1%) were case series. Current clinical applications of ICG in gastrointestinal pediatric surgery included: esophagogastric surgery in 4/11 articles (36.4%), intestinal and pancreatic surgery in 3/11 articles (27.2%) and colorrectal surgery in 4/11 articles (36.4%).

Conclusions: ICG fluorescence in gastrointestinal pediatric surgery is a promising and safe technology that facilitates intraoperative localization of anatomical structures to achieve a more precise dissection and avoid injury to other adjacent tissues. It can be considered as a meaningful tool for assessing intestinal viability, as it provides objective data on tissue perfusion, and can impact the intraoperative decision in reconstructive surgeries requiring anastomosis. Future studies are needed to confirm these initial promising results. The lack of comparative and prospective studies is still the main limitation.

IN03_PO / 13:40 – 13:45

PEDIATRIC SURGERY ON SOCIAL MEDIA

Sergey Minaev[1], Igor Kirgizov[2], Igor Gerasimenko[1], Ramiz Shamil-ogly Poluxov[3], Sergey Timofeev[4], Mihail Akselerov[5], Alina Grigorova[1], Oksana Yachnaya[1], Nikos Samurganov[1]
[1]Stavropol Medical University, Stavropol, Russian Federation. [2]Russian Medical Academy of Postgraduate Education, Moscow, Russian Federation. [3]Azerbaijan Medical University, Baku, Azerbaijan. [4]Far Eastern State Medical University, Khabarovsk, Russian Federation. [5]Tyumen Medical University, Tyumen, Russian Federation

Abstract

Aim of the Study: To evaluate the effectiveness of the bibliometric analysis of scientific medical databases with the analysis of the hashtag system in pediatric surgery.

Methods: Used data for 2010-2019 from scientific medical databases (Thomson Reuters WoS (NY, USA) and PubMed (NCBI, MD, USA)) and social media (Twitter, Facebook, and Google). Besides, the work created infographics using VOSviewer (Leiden University, The Netherlands) using the resource GunnMap (A. Gunn, New Zealand). Researching the analytical system of various hashtags was using The Social Media Analytics Platform for Healthcare.

Main results: Analysis of data from scientific medical databases, 1649 sources were found for the main keywords (surgery, hydatid cyst, liver, and children). The articles that make up the category "Original Research" were - 1130 (68.5%) papers; "Clinical cases" - 430 (26.1%); "Reviews" - 89 (5.4%). The number of open-access documents was 810 (49.1%). The most common hashtags are found on Twitter, a social network based on the exchange of small messages - tweets. The most popular medical hashtags in it are #ILookLikeASurgeon, #SurgTweeting, #some4surgery, #some4pedsurg, #children, etc.

Conclusions: Thus, the use of bibliometric analysis with infographics is not only a promising way to analyze data in pediatric surgery but also a new way to visualize the available diagnostic and treatment approaches. Social media attracts much attention from pediatric surgeons, journals, and professional associations, allowing them to see the opinions and works it generates.

IN04_PO / 13:45 – 13:50

INANIMATE 3D PRINTED MODEL FOR TRAINING THORACOSCOPIC REPAIR OF ESOPHAGEAL ATRESIA WITH TRACHEOESOPHAGEAL FISTULA

Petra Zahradnikova[1], Lenka Fedorová[1], Martin Lindak[1], Tomáš Bernát[2], Pavol Vitovič[3], Jozef Babala[1]
[1]Department of Pediatric Surgery, Faculty of Medicine, Comenius University, National Institute of Children´s Diseases, Bratislava, Slovakia. [2]Faculty of Medicine, Comenius University, Bratislava, Slovakia. [3]Department of simulation and virtual medical education, Faculty of Medicine, Comenius University, Bratislava, Slovakia

Abstract

Aim of the Study: Thoracoscopic repair of esophageal atresia and tracheoesophageal fistula (EA/TEF) is technically demanding. We present a new low-cost inanimate model designed for training minimally invasive skills for thoracoscopic repair of EA/TEF.

Methods: The model consists of two pieces. Neonatal thoracic cavity (segmented from a newborn CT scan), is printed using inexpensive filament-based 3D printer. Covered with a synthetic silicon rubber skin (Figure 1). Esophagus model was created using platinum cured silicon casted into 3D printed mold. The silicone was dyed into two different colors to simulate the muscle layer and mucosa of the esophagus pouches (Figure 2).

Main Results: Cost of materials is under € 150, and the rechargeable esophageal pouches cost under € 20. We proceeded to place the optic, visualizes the first image of esophagus and trachea. After performing a meticulous dissection, the separation of the tracheoesophageal partition is complete. A 5/0 suture is placed around the esophagus, simulating fistula ligation. Then the end-to-end anastomosis using sliding performed (Figure 3,4).

Conclusions: We believe that this completely inanimate, inexpensive, reproducible model aims to meet the training needs in EA/TEF surgery for surgeons in training, as well as senior surgeons who want to improve their minimally invasive surgical technique.

Figure n. 1

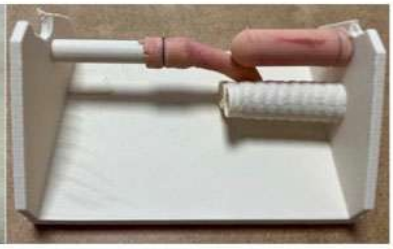

Figure n. 2

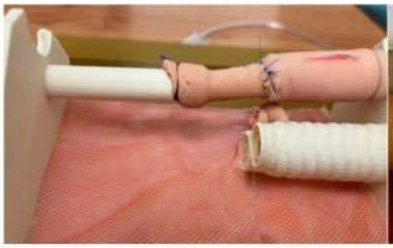

Figure n. 3

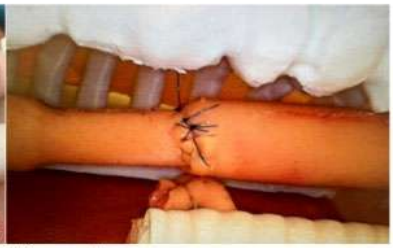

Figure n. 4

IN05_PO / 13:50 – 13:55

RUBINA LENS (ICG FLUORESCENCE TECHNOLOGY SYSTEM): OUR PRELIMINARY EXPERIENCE FOR HEAD AND NECK MASSES EXCISION IN PEDIATRIC AGE

Ciro Esposito, Mariapina Cerulo, Vicenzo Coppola, Roberto Carulli, Benedetta Lepore, Annalisa Chiodi, Francesca Carraturo, Claudia Di Mento, Maria Escolino, Fulvia Del Conte
Federico II University, Naples, Italy

Abstract

Aim of the Study: to report our preliminary experiences in head and neck masses excision guided by Rubina-lens ICG fluorescence technology system.

Methods: We analyzed charters of patients underwent head and neck masses excision between September and November 2022 in our unit using new ICG technology Rubina-lens, which allows to use ICG florescence guidance in open procedures. Data regarding demographics, surgery, and outcome were collected.

Main results: a total of 10 patients were included. 1 nose mass, 1 large neck mass, 4 thyroglossal-duct cysts, 1 pre-auricular cyst, 1 scalp cyst, 2 supraorbital cysts. In all cases ICG was injected inside the lesion intraoperatively. Median intra-operative time was 58.4 min (35-134). No intraoperative complications nor adverse reactions were reported. In 2 cases (neck mass and a thyroglossal duct) we reported a seroma about 3 weeks after surgery. Both cases were managed ambulatory aspirating the liquid. All the masses resulted completely excised at the pathological anatomy report.

Conclusions: the use of ICG technology for head and neck masses allows a safe dissection and makes easier the mass delimitation. Further cases must be performed to enhance Rubina-lens use in pediatric surgical pathologies.

Case	Intraoperative time (min)	ICG administrated (ml)	Postoperative complications
Nose mass	52	1	No
Neck mass	134	5	Seroma
Thyroglossal-duct cyst	47	2	No
Thyroglossal-duct cyst	64	2	No
Thyroglossal-duct cyst	70	2	Seroma
Thyroglossal-duct cyst	58	2	No
Preauricular cyst	39	0.5	No
Scalp cyst	35	1	No
Supraorbital cyst	40	0.5	No
Supraorbital cyst	45	0.5	No

TH01_PO / 14:00 – 14:05

LONG-TERM RESULTS IN ADOLESCENT BREAST MASSES

Melis CEVHERTAS[1], GURDENIZ SERIN[2], ULGEN CELTIK[1], AHMET CELIK[1]
[1]Ege University Faculty of Medicine, Department of Pediatric Surgery, IZMIR, Turkey. [2]Ege University Faculty of Medicine, Department of Medical Pathology, IZMIR, Turkey

Abstract

Aim of the Study: Since breast problems in childhood are rare compared to adults, studies generally consist of limited number of patients obtained over long-periods. We aimed to reveal long-term results, and determine a predictable follow-up protocol for pediatric breast mass.

Methods: Hospital records of patients who're operated for breast mass between 2012-2022 were reviewed retrospectively. Data included demographics, radiological findings, BIRADS classifications, pathological findings and long term follow up. Patients who had at least 2 years postoperative follow-up were included this study.

Main Results: A total of 53 cases (F/M:52/1) with mean age of 14.7± years were included. Most common complaints' palpable mass (50/94.3%) and nipple discharge (3/5.7%) .28 patients had right (multiple masses in 4), 21 left (multiple in 3), 4 bilateral masses. In ultrasonographic evaluation, median long axis of masses was 35.2 (2.6-180) mm.BI-RADS scores and histopathological evaluation summarized in Table. Excision was performed in all. Majority of masses' benign (94.3%). Eleven patients excluded study because of insufficient follow-up period.23/42 patients had recurrence ipsilateral (14) or contralateral (9) in follow-up.21 patients followed with serial ultrasonography, recurrences' low-grade and small lesions, but 2 (8%) patients required reoperation due to suspicious radiological findings and their pathologies found to be same as first one.

Conclusions: Breast masses' rare and mostly benign in pediatrics, with this study, long-term results tried to be presented for first time. Results of 42 patients shows that there's no need for long-term follow-up. However, pathologies with malignant transformation potential may exist, unnecessary invasive procedures should be avoided to prevent possible iatrogenic damage to tissue.

TH02_PO / 14:05 – 14:10

DIAGNOSIS AND MANAGEMENT OF CONGENITAL H-TYPE TRACHEOESOPHAGEAL FISTULA: RESULTS OF A NATIONAL SURVEY.

Cecilia Morchio[1], Alba Ganarin[2], Andrea Conforti[3], Ernesto Leva[4], Giovanni Gaglione[5], Gaia Brenco[6], Elisa Zambaiti[7], Salvatore Fabio Chiarenza[8], Tamara Caldaro[9], Maurizio Cheli[10], Giovanni Boroni[11], Elena Sofia Marcandella[12], Giovanna Riccipetitoni[13,14], Sebastiano Cacciaguerra[15], Vincenzo Di Benedetto[16], Valerio Gentilino[17], Gabriele Lisi[18], Francesco Morini[1], Paola Midrio[2]
[1]Neonatal Surgery Unit, Meyer Children Hospital, Florence, Italy. [2]Pediatric Surgery Unit, Ca' Foncello Hospital, Treviso, Italy. [3]Neonatal Surgery Unit, Medical and Surgical Department of Fetus-Newborn-Infant, Bambino Gesù Children's Hospital, IRCCS, Rome, Italy. [4]Dept. Pediatric Surgery Fondazione IRCCS Ca' Granda - Ospedale Maggiore Policlinico University of Milan, Milan, Italy. [5]UOC Chirurgia Pediatrica, Neonatale e d'Urgenza AORN Santobono-Pausilipon, Naples, Italy. [6]Chirurgia Pediatrica IRCCS GIANNINA GASLINI, Genova, Italy. [7]Department of Pediatric General Surgery, Regina Margherita Children's Hospital, Azienda Ospedaliero Universitaria Città della Salute e della Scienza, Turin, Italy. [8]Department of Pediatric Surgery, San Bortolo Hospital, Vicenza, Italy. [9]Digestive Endoscopy and Surgery Unit, Bambino Gesu Children's Hospital-IRCCS, Rome, Italy. [10]SC Chirurgia Pediatrica Ospedale Papa Giovanni XXIII, Bergamo, Italy. [11]Department of Paediatric Surgery, ASST Spedali Civili di Brescia, Brescia, Italy. [12]Paediatric Surgery Unit, Women's and Children's Health Department, University of Padua, Padua, Italy. [13]Department of Paediatric Surgery, "V. Buzzi" Children's Hospital, Milan, Italy. [14]SC Chirurgia Pediatrica Dipartimento Donna e Materno Infantile, Pavia, Italy. [15]Deparment of Pediatric Surgery, Ospedale Garibaldi-Nesima, Catania, Italy. [16]Policlinico Universitario di Catania G. RODOLICO-San Marco, Catania, Italy. [17]Division of Pediatric Surgery Woman and Child Department "Filippo Del Ponte" Hospital ASST Sette Laghi, Varese, Italy. [18]Pediatric Unit, Santo Spirito Hospital, University of Chieti-Pescara, Pescara, Italy

Abstract

Aim of the Study: National survey to describe diagnosis, management, and outcome of patients with congenital H-type tracheoesophageal fistula (H-TEF).

Methods: Following approval of our National Society, we performed a nationwide survey of all Pediatric Surgery Units and a multi-institutional retrospective study of patients with H-TEF.

Main results: Survey was presented to 65 Units. Seventeen responded with one or more cases: 77 patients were diagnosed with H-TEF between 2010 and 2022. Associated malformations were present in 43%, mostly cardiac (31%). Most frequent symptoms were cough (36%), bronchopneumonia (23%), and dysphagia (19%). H-TEF was detected by tracheobronchoscopy (84%) and/or upper GI (40%) and/or esophagoscopy (27%). Median age at diagnosis was 23 days (1day-15years). Ligation and section was performed in 90%, clip closure and section in 9%, endoscopic cauterization in 1%. Surgical dissection was performed by cervicotomy (76%), thoracoscopy (15%), and thoracotomy (9%). In case of surgical dissection, H-TEF preoperative cannulation was performed in 68%, drain placed in 26%. One month after surgery 13% had mild persisting symptoms, mainly hypophonia. Recurrence occurred in 4 patients after 2 thoracoscopic clips closure, 1 tricloroacetic acid and 1 cervicotomic suture. A second recurrence occurred in 1 patient, following tricloroacetic recurrence treatment.

Conclusions: Incidence of H-TEF was 6 cases/year, consistent with expected rate of 5 cases/year in our Country. Diagnosis was challenging, sometimes delayed and, in most patients, requiring multiple examinations. Surgery was the most frequent treatment, with variable approaches. Long term outcomes are good and recurrence a rare event.

TH03_PO / 14:10 – 14:15

PULMONARY ARTERIOVENOUS MALFORMATION: 10 YEAR EXPERIENCE IN A SINGLE INSTITUTION

Evgeniy Andreev, Zhanetta Tramova, Victor Verovsky, Dionisiy Petrov, Roman Garbuzov, Aleksander Poliayev
Russian Children's Clinical Hospital, Moscow, Russian Federation

Abstract

Aim of the Study: to demonstrate the surgical approach in the management of pulmonary arteriovenous malformation (PAVM) based on 10-year experience.

Methods: the history of 22 patients with PAVM treated between 2012 and 2022 has been analyzed. CT-scan and pulmonary angiography were used to verify the diagnosis. Treatment strategy included endovascular embolisation and surgical removal of malformation using either open or thoracoscopic technique.

Main results: most patients initially presented with recurrent dyspnea, cyanosis and desaturation. Five patients had episodes of pulmonary bleeding. Diagnostic evaluation revealed that the majority of patients (63.6%) had right-side PAVM with almost no difference among upper, middle or the lower lobe. Five patients (22.7%) had left-side PAVM. Only one patient (4.5%) had multiple lesions, the rest of the patients had solitary malformation involving one (90.9%) or several (9.09%) lobes. Sixteen patients undergone surgical interventions. Nine patients (56.25%) went through endovascular embolisation. Among them four patients (44.4%) had relapse of the disease and eventually were recommended surgery. Nine patients had open lobectomy (56.25%), including those after embolisation. Three patients (18.75%) underwent thoracoscopic lobectomy. Six patients remain asymptomatic or have mild symptoms and continue to have timely CT and pulmonary angiography. Thoracoscopic lobectomy compared to open surgery was associated with less pain, shorter stay and faster recovery.

Conclusions: Endovascular embolisation is thought to be a procedure of choice nowadays although it is associated with a risk of relapse. If indications are clear, radical removal can be more beneficial for the patient long-term. Personal surgical strategy is recommended for each patient with PAVM.

13:30 - 14:30

Poster Presentation Session 2

Thoracic II

(M2) Studio 1+2

Chair: Maria Escolino (ITA)

Zafer Dokumcu (TUR)

24th EUPSA CONGRESS
June 7 - 10, 2023
Hyatt Regency Hotel IZMIR / TURKIYE
European Paediatric Surgeons' Association

TH04_PO / 13:30 – 13:35

CONGENITAL LUNG MALFORMATIONS IN ADULTS FROM THE PEDIATRIC SURGEON'S POINT OF VIEW. A SYSTEMATIC REVIEW

Noemi Pasqua[1], Ilia Bresesti[2], Salvatore Zirpoli[3], Valerio Gentilino[1], Federica Pederiva[4]
[1]Division of Pediatric Surgery, Woman and Child Department, "F. Del Ponte" Hospital, ASST Settelaghi, Varese, Italy. [2]Division of Neonatology, Woman and Child Department, "F. Del Ponte" Hospital, ASST Settelaghi, Varese, Italy. [3]Department of Radiology, "Vittore Buzzi" Children's Hospital, Milano, Italy. [4]Department of Pediatric Surgery, "Vittore Buzzi" Children's Hospital, Milano, Italy

Abstract

Aim of the study: Although there is agreement among pediatric surgeons to surgically remove symptomatic congenital pulmonary malformations (CPM), the appropriate management of asymptomatic cases remains controversial. Conservative treatment of asymptomatic patients has been suggested. In the perspective of transitional care, we aimed to have an insight into the management of adults with CPM.

Methods: According to PRISMA guidelines, a systematic review searched all studies reporting adult (≥15 years) patients with CPM.

Main results: Of 7976 studies reviewed from 1947 to 2022, 1902 were analyzed, and 225 meeting the inclusion criteria were considered. Overall, 581 patients were included: 194 congenital pulmonary airway malformations (CPAM), 247 intralobar sequestration (ILS), 43 extralobar sequestration (ELS), 92 bronchogenic cyst (BC), 5 hybrid lesions (HL=CPAM+ILS/ELS). In 96.6% of the cases CPM were surgically treated. Overall, in 16.5% of the cases an associated tumor was discovered at histology (table). Conservative treatment was offered to patients not fit for surgery (n=10) or when they refused surgery (n=10).

Conclusions: Thoracic surgeons recommend surgical resection as treatment of choice in all adult patients with CPM, even in asymptomatic cases, concerned with the susceptibility to infections and the risk of malignant transformation, that was confirmed in 16.5% of the cases described in literature. Conservative treatment was offered only when surgery was not feasible. Pediatric surgeons should keep in mind these results when treating children with CPM.

	CPAM n=194		ILS n=247		ELS n=43		BC n=92		HL n=5	
Age at surgery (years, mean±SD, range)	34.3±8.5 (15-80)		38.8±4.2 (15-75)		37.7±5.2 (17-70)		42.3±2 (19-75)		24±8.4 (16-36)	
SYMPTOMS (%)										
Pneumonia	20.7		6.5		-		6.6		-	
Dyspnea	9.3		1.2		16.2		20.6		-	
Hemoptysis	7.7		12.5		-		26		-	
Cough/respiratory infections	31.4		60.8		51.2		24		80	
Shortness of breath on exertion	1.5		-		-		-		-	
PNX	4.1		0.4		-		-		-	
Chest pain	-		3.6		14		2.2		20	
Asymptomatic	25.3		15		18.6		20.6		-	
TREATMENT (%, C=conservative; S=surgery)										
	C	S	C	S	C	S	C	S	C	S
	2.6	97.4	3	98	0	100	7.6	92.4	0	100
Association with malignancy (%)	23.7		6.5		2.8		28.2		20	

TH05_PO / 13:35 – 13:40

RESPIRATORY AND ORTHOPEDIC LONG-TERM OUTCOMES AFTER RESECTION OF PULMONARY CONGENITAL CYSTIC ADENOMATOID MALFORMATION (CCAM) IN NEWBORNS, INFANTS, AND TODDLERS

Matteo Busti[1,2], Angelo Zarfati[1,2], Laura Valfré[1], Andrea Conforti[1], Pietro Bagolan[1,2]
[1]Newborn surgery Unit, Bambino Gesù Children's Hospital, IRCCS, Rome, Italy. [2]Department of Systems Medicine, University of "Tor Vergata", Rome, Italy

Abstract

Aim of the Study: Limited evidence exists on long-term follow-up (FU) of patients surgically treated for congenital cystic adenomatoid malformation of the lung (CCAM) in early life, particularly about respiratory and orthopedic outcomes. The aim of the study was to evaluate respiratory and orthopedic long-term outcomes after surgical management of CCAM in newborns, infants, and toddlers.

Methods: Retrospective analysis of prospectively recorded data of consecutive patients (newborns, infants, toddlers) with CCAM treated at our tertiary referral center (January-2000 to December-2015). Clinical, radiological, and surgical data, as well as FU were revised. After discharge, patients were followed at planned time-point by a multidisciplinary team.

Main results: Seventy-seven patients were included in the present series. Patients were followed-up for a median of 8years after surgery (range 1-19years), until a median age of 8years (range 2-19years). Thirty patients (39%) developed wheezing and 21 (27%) had lower tract respiratory infections (LRTI) within four years of age. However, more than 50% of patients with respiratory symptoms underwent remission in the following 4years. Thirty-one patients (40%) developed at least one musculoskeletal deformity, including also minimal ones. Eighteen (23%) had scoliosis, 17 (22%) thoracic asymmetry, 10 (12%) pectus excavatum, 5 (6%) winged scapula.

Conclusions: newborns, infants, and toddlers operated for CCAM, had a good functional outcome despite the association with pulmonary and skeletal problems after surgical treatment. We support the role of elective surgical, even in absence of symptoms paying maximal attention to minimally invasive (open or thoracoscopic) approach to avoid sequelae.

TH06_PO / 13:40 – 13:45

ROBOT-ASSISTED THORACOSCOPİC SURGERY VERSUS THORACOSCOPIC SURGERY FOR TREATMENT OF PEDIATRIC THORACIC NEUROGENIC TUMORS WITH IMAGE-DEFINED RISK FACTORS (IDRF)

Zafer Dokumcu, Merve Karayazili, Ulgen Celtik, Coskun Ozcan, Ata Erdener
Ege University Faculty of Medicine, Department of Pediatric Surgery, Izmir, Turkey

Abstract

Aim of the Study: Thoracoscopic surgery (TS) is shown to be effective for the treatment of pediatric thoracic neurogenic tumors (TNT), however, robot-assisted thoracoscopic surgery (RATS) may also be preferred. We aimed to compare the results of TS and RATS in TNT with IDRF.

Methods: We reviewed hospital records of patients with IDRF-positive TNT who underwent thoracoscopic resection through May 2019 and November 2022. Demographics, tumor diameters, surgical results, and durations of surgery, anesthesia, chest tube drainage and hospital-stay and treatment costs were evaluated. Statistical analysis was performed with Independent Samples T-Test.

Results: There were 5 patients in RATS and 9 patients in TS groups. Characteristics of both groups is depicted in Table 1. Median age was smaller in TS group ($p<0.05$). One patient required conversion in TS group due to major vascular injury. Total resection was achieved in all intra-thoracic tumors. Complication were Horner syndrome (n=2) in RATS and chylothorax (n=4) in TS groups ($p>0.05$). RATS was associated with shorter chest tube drainage and hospital-stay time ($p<0.05$). There was only one recurrence (out of the radiotherapy site) in a patient with grade 4 high risk neuroblastoma in a median follow-up time of 25.5 months (3-44 months).

Conclusions: Despite the limited number of patients in our series, RATS seems to be associated with significantly reduced time for hospital-stay and postoperative recovery with similar complication rates and financial burden compared to TS. We think that this approach should be the first choice in patients with IDRF-positive TNT.

Table 1. Characteristics of groups

	RATS group	TS group	p
n	5	9	
Median age (month)	83 (16-139)	31 (2-76)	<0.05
Localization			
Apical/Upper thoracic	5	3	
Thoracoabdominal	0	6	
Median tumor diameter (cm)	7 (4.1-8)	8 (3.6-9)	>0.05
Histology			
Ganglioneuroma	3	0	
Ganglioneuroblastoma	0	1	
Neuroblastoma	2	8	
Conversion	0	1	
Complication	2	4	>0.05
Horner Syndrome	2	0	
Chylothorax	0	4	
Median chest tube drainage time (days)	2 (1-3)	10 (1.5-19)	<0.05
Median hospital-stay time (day)	3 (2-7)	11 (4-33)	<0.05
Hospital cost (Euro)	2.500 (1.379-2.500)	2.102 (1.161-4.862)	>0.05
Follow-up time (months)	5 (3-22)	36 (3-44)	

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TH07_PO / 13:45 – 13:50

THORACOSCOPIC INTERNAL TRACTION REDUCES HOSPITAL STAY IN LONG GAP ESOPHAGEAL ATRESIA

Dominika Borselle[1], Joseph Davidson[2], Stavros Loukogeorgakis[3,4], Dariusz Patkowski[1], Paolo De Coppi[3,4]
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Abstract

Aim of the Study: Management of long gap esophageal atresia (LGOA) is controversial. This study aims at comparing the management of LGOA between two high volume centers.

Methods: We included patients with LGOA (type A and B) between 2010 and 2022. Demographics, surgical methods, and outcomes were collected and compared.

Main Results: The table below describes surgical approach, including initial and definitive management, as well as outcomes and complications in Centre A and B. The age at esophageal continuity was 44 days in Centre A and 110 days in Centre B. Moreover, the time between initial procedure and the esophageal anastomosis was 26 days in Centre A and 92 days in Centre B

Conclusions: Definitive management of LGOA remains controversial. Thoracoscopic internal traction technique reduces hospital stay and the need for esophageal substitution while maintaining a similar early complication rate.

	Centre A (n=28)	Centre B (n=24)
Initial approach		
Thoracoscopic completed	28	3
Open	0	19
Conversion	0	2
Initial Management		
Primary esophageal anastomosis	1	7
Esophageal lengthening	27	1
Internal traction	26	0
External traction	1	1
Gap assessment alone	0	10
Gap assessment + oesophagostomy	0	6
Gastrostomy	16	14
Definitive management		
Delayed esophageal Anastomosis	25	8
Esophageal replacement - Gastric Tube	1 Collis-Nissen procedure as the final stage	9
Complications		
Early mortality	2/28 due to accompanying malformations	0
Anastomotic leakage	4/26 treated conservatively, all patients had a contrast study	0/24, 1 case of pleural effusion, no routine contrast study
Recurrent strictures	13/26	7/15

TH08_PO / 13:50 – 13:55

CHEST WALL ABNORMALITIES IN CONGENITAL DIAPHRAGMATIC HERNIA PATIENTS: PREVALENCE OF PECTUS EXCAVATUM

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Abstract

Aim of the study: To evaluate the prevalence of chest wall abnormalities in patients with congenital diaphragmatic hernia (CDH).

Methods: Retrospective study on CDH patients operated at our Centre between 2012-2019. Patients on regular follow-up with ≥1 clinical evaluation within the last 3 years were included; chest wall abnormalities as pectus excavatum (PE), pectus carinatum (PC), thoracic asymmetry, scoliosis, and kyphosis at objective examination were recorded. Results were analyzed with Fisher's test, considering diaphragmatic defect side and size, liver position, diaphragmatic and abdominal patch use during surgery.

Main results: During the study period, 105 CDH patients were operated at our Centre (survival rate 72%). Sixty-eight patients were included (62% males, mean follow-up time 6.9±2.2 years). PE was described in 33 (49%) and was prevalent in patients with liver up hernias (67%, p=0.07), right CDH (78%, p=0.15), type C and D defect (61%, p=0.20), diaphragmatic (74%, p=0.20) and abdominal patch (67%, p=0.61) correction. Two (3%) patients presented PC. In 27 (40%) cases an asymmetry of the thorax was noted (42% of PE) and was prevalent in patients with liver up hernias (52%, p=0.19), right CDH (44%, p=1), type C and D defect (65%, p=0.004), diaphragmatic (65%, p=0.004) and abdominal patch (67%, p=0.56) correction. Kyphosis and/or scoliosis was present in 7 patients (18% of PE).

Conclusions: Prevalence of chest wall abnormalities among CDH patients is substantial. Implementing CDH follow-up with objective measurement of PE and PC can aid clinical assessment and might guide prenatal counselling and future treatments.

TH09_PO / 13:55 – 14:00

RIGHT-SIDED DIAPHRAGMATIC HERNIA AFTER LIVING DONOR LIVER TRANSPLANTATION AND EXTENDED RIGHT HEPATECTOMY, IN CHILDREN

Sumeyye Sozduyar[1], Pari Khalilova[2], Ergun Ergun[2], Elvan Onur Kirimker[3], Suat Fitoz[4], Deniz Balci[3], Meltem Bingol-Kologlu[2]
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Abstract

Aim of the Study: We aimed to present six pediatric cases who developed diaphragmatic hernia (CDH) after living donor liver transplantation (LDLT) and extended right hepatectomy (ERH) for hepatoblastoma.

Methods: In 15years, 4(5.6%) of 71patients underwent LDLT 2 (6.8%) of 29patients who underwent right or extended right hepatectomy and developed acquired right-sided DH. LDLT with left or left lateral sector grafts was performed in four patients, and ERH was performed in two patients due to pretext three hepatoblastoma. DH developed in the mean of 4.5months (1-12) after LDLT or ERH. Four patients presented with strangulation of the herniated viscera, while in 2patients, DH was detected in follow-up imaging studies.

Main results: Diaphragmatic defect was repaired by laparotomy in four patients with an acute presentation and thoracoscopically in two asymptomatic patients. Prosthetic mesh reinforcement was done in 4patients. Recurrence occurred in an LDLT patient three months following initial thoracoscopic repair without prosthetic mesh reinforcement. No other recurrences were encountered during the 31months of mean follow-up period.

Conclusions: In children who underwent LDLT with left-sided grafts or ERH, the right diaphragm is exposed to surgical trauma with extensive mobilization of the right lobe of the liver, use of thermal surgical devices, phrenic nerve injury and ligation of diaphragmatic veins. Thoracoscopic repair of acquired DH following LDLT or ERH in uncomplicated patients is a safe, effective, and technically feasible approach. Depending on our experience, we recommend prosthetic mesh reinforcement in all patients with acquired DH following LDLT or ERH.

TH10_PO / 14:00 – 14:05

CHRND VARIANT IN A PATERNALLY INHERITED ESOPHAGEAL ATRESIA AND TRACHEOESOPHGAGEAL FISTULA: REPORT OF A CASE

Tutku Soyer[1], Özlem Boybeyi[1], Beren Karaosmanoğlu[2], Ekim Taşkıran[2], Özlem Pelin Şimşek Kiper[2], Gülen Eda Utine[2]
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Abstract

Aim of the Study: The familial occurrence of esophageal atresia and tracheoesophageal fistula (EA-TEF) is very rare and some genetic variants have been reported in syndromic cases. The genetic basis behind the isolated familial cases have not been identified. A male infant born with EA-TEF and his affected father were evaluated with whole genome sequence to define a genetic causative variation in paternally inherited EA-TEF.

Case description: A male infant was born to a 29-years-old, gravida 1, para 1 women by normal vaginal delivery. The patient was diagnosed as Type-C EA-TEF. In his family history, his father was also operated for EA-TEF during neonatal period. He had no associated anomaly despite patent foramen ovale (PFO). On the second day of life, the patient underwent primary esophageal anastomosis and ligation of TEF. The postoperative follow-up was uneventful, and he was discharged from the hospital at 12th postnatal day. Genomic DNAs were extracted from peripheral blood of the patient and the father. When causative genes responsible for EA-TEF were filtered out, four different variants in NOTCH2, SAMD9, SUPT20H and CHRND were found. Except the variant found in CHRND (NM_000751.2, c.381C>G, p.(Tyr127Ter)), other three variants were not found to be segregated with the father who has EA-TEF also. This nonsense variant was not found in GnomAD database.

Conclusions: CHRND variant found in both EA-TEF patient, and his affected father suggest that CHRND variant can be considered as one of the likely pathogenic genetic variants in familial isolated EA-TEF patients.

TH11_PO / 14:05 – 14:10

SPONTANEOUS PNEUMOTHORAX IN CHILDREN AND ADOLESCENTS WITH MARFAN SYNDROME

Angelo Zarfati[1,2], Simone Frediani[1], Valerio Pardi[1], Ivan Pietro Aloi[1], Silvia Madafferi[1], Antonella Accini[1], Arianna Bertocchini[1], Alessandro Inserra[1,2]
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Abstract

Aim of the Study: Marfan syndrome (MS) is a systemic disease of connective tissues consisting of a variable combination of anomalies. These patients have an increased risk of spontaneous pneumothorax (SP). However, specific pediatric literature regarding management is scarce and no guidelines exist. Our aims were to compare the management of spontaneous pneumothorax in children and adolescents with Marfan syndrome, syndromic and non-syndromic patients.

Methods: Retrospective review of pediatric patients (<18 years) with a diagnosis of SP (January-10, June-22) at our tertiary pediatric hospital, with particular emphasis on diagnosis, treatment, and follow-up (FU).

Main results (Table): Sixty-six patients with SP were identified: nine (13%) had MS. The groups showed no significant differences regarding baseline and diagnosis characteristics such as age at diagnosis, sex, asthma, symptoms, and side. The groups were also comparable in terms of first-line treatment and hospitalization length. The patients with MS showed significantly more first-line treatment failures needing further surgery (44% (4) vs 14% (8), p=0.049). During the FU the groups had a similar incidence of ipsilateral recurrence. During the FU Marfan patients had significantly more contralateral occurrence (55% vs. 8%, p = 0.002) and required surgery or a chest drain (66% vs. 29%, p = 0.050).

Conclusions: Management of patients with Marfan syndrome and spontaneous pneumothorax is challenging for the higher rate of first-line treatment failure. Even if they have a similar ipsilateral recurrence rate during the FU, they experience more contralateral occurrences and require surgery, or a chest drain more frequently during the FU.

TH12_PO / 14:10 – 14:15

FLANK BULGE AFTER CDH REPAIR: AN UNDERSTIMATED ENTITY

Rim Kiblawi, Mikal Obed, Benno Ure, Jens Dingemann
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Abstract

Aim of the study: Flank bulge (FB) is a rare postoperative complication of retroperitoneal operations through flank incisions. FB is characterized by anterolateral relaxation of the abdominal wall muscles. The favored pathomechanism is iatrogenic injury of intercostal nerves T11/T12. During CDH-repair, dissection and sutures at this thoracic level are necessary and nerve injury with consecutive FB appears to be a possible complication. We aimed to assess the incidence and risk of FB in a consecutive series of patients with CDH.

Methods: We retrospectively analyzed charts of all patients after CDH-repair (2007-2022) with a follow-up of ≥ 3 months, focusing on FB. FB was diagnosed during clinical follow-up examinations and defined as protrusion of abdominal wall muscle with no sign of hernia. Surgical variables and their association with FB were evaluated (open vs. thoracoscopic, type of incision, patch repair, costal anchor stitches). For statistical analysis, Pearson's and student's T-Test were used. (Ethical approval nummer:10732_BO_K_2023)

Main results: Fifty-four patients undergoing CDH-repair with completed follow-up were included (70% left CDH, 41% liver up, 68% open CDH repair, 41% patch repair). FB was diagnosed in five patients (9%). All had undergone open patch repair (open vs. thoracoscopic, $p > 0.05$; patch vs. direct suture, $p=0.0046$). In 4 of 5 patients with FB, costal anchor sutures were documented.

Conclusions: This is the first report on FB following CDH-repair. FB seems to be associated with CDH-repair of larger defects. Given the rare nature of this condition, further studies are needed to identify associated risk factors.

TH13_PO / 14:15 – 14:20

PERCUTANEOUS COIL EMBOLIZATION OR SURGICAL TREATMENT: PEDIATRIC MANAGEMENT OF PULMONARY ARTERIOVENOUS MALFORMATIONS (PAVMS) IN HEREDITARY HEMORRHAGIC TELANGIECTASIA (HHT).

Claire Dagorno[1], Ralph Epaud[2], Pascal Lacombe[3], Nicolas Vinit[1], Christophe Delacourt[1], Sabine Sarnacki[1], Naziha Khen-Dunlop[1]
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Abstract

Aim of the Study: Hereditary Hemorrhagic Telangiectasia (HHT) is a autosomal dominant vascular disease (1/6000 births) with ubiquitous arterio-venous malformations (AVM). Pulmonary location occurs in 30-55% and their management is poorly described in children. They can be asymptomatic, but also lead to acute hemorrhagic events. The aim of this study was to evaluate the symptoms and management of pulmonary HHT in a pediatric population.

Methods: We conducted a monocentric retrospective observational study in a French reference center (1990-2020). Medical records were reviewed, including diagnostic, genetic mutation, family history, symptoms, CT-Scans results, acute events, and management.

Main Results: 77 children were included, with a mean age of 15,5±6.1 years. 24 had pulmonary AVM (31%), with 10 girls and 14 boys, and a mean age of 17±4.9 years. Mean age at diagnosis on CT scan was 4,8±4 years. Associated locations were 18 epistaxis (75%), 13 telangiectasia (54,2%), 7 cerebral malformations (29%) and one liver location (4,1%). Considering respiratory signs, 7 (29%) had bronchial hyperreactivity, 5 (21%) hypoxemia, 4 cyanosis (17%), 3 dyspnea (12.5%) and one hemoptysis (4,1%). Bleeding risk was based on CT scan imaging. Embolization was proposed in 9 cases (37,5%), with 4 successes, but complementary surgery was needed in 5 cases. A lobectomy by thoracotomy was performed in all cases, leading to a shunt regression and a significative decrease hypoxemia (91,8± 6,7 vs 98,8 ±2,1%, $p<0,05$).

Conclusion: Although technically difficult and challenging, a lobectomy is an option to decrease bleeding complications and increase saturation rates. However, its place requires referred centers.

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TH14_PO / 14:20 – 14:25

CONTRIBUTION OF IMAGING METHODS TO CLINICAL DIAGNOSIS AND TREATMENT OPTIONS IN PEDIATRIC THORACIC TRAUMA: AN EXPERIENCE OF PEDIATRIC TRAUMA CENTER

Recep Kar[1], Doğuş Çalışkan[2], Can İhsan Öztorun[2], Ahmet Ertürk[1], Elif Emel Erten[1], Süleyman Arif Bostancı[1], Vildan Selin Çayhan[1], Emrah Şenel[2], Müjdem Nur Azılı[2]
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Abstract

Aim of the Study: Increased use of chest computed tomography (CCT) for pediatric trauma (PT) leads to radiation exposure. We aimed to evaluate the frequency of imaging methods and determine if the increased rate of diagnosis with imaging studies had an impact on treatment options.

Methods: This is a retrospective study of 819 patients under 18 years old who had thoracic trauma (TT) between January 2015 and December 2018 out of a total of 11.532 trauma patients. TT group was defined as those confirmed with positive physical findings, positive signs in the posterior-anterior chest X-ray (CXR) or CCT, and/or with an interventional procedure. The statistical relationship between the pathologic findings at physical examination, imaging studies, and clinical results of cases was analyzed.

Results: TT group included 819 of 11,174 traumas (7.3%). The most prevalent pathology observed by CXR (n = 650) was clavicle fracture at 21%, followed by pneumothorax at 4%. Lung contusion (54%) and pneumothorax (45%) were the most common pathologies detected by CCT(n=492). A statistically significant difference was found between CCT and CXR results in terms of recognizing a pathological finding. Despite the higher rate of CCT diagnosis, it was shown that it had no effect on management of TT (p 0.001).

Conclusions: We found that the rate of establishing a pathological finding is low with CXR, which is the most used imaging method in TT, and higher with CCT more than with CXR; however, increased diagnosis rate of CCT did not contribute to the choice of treatment.

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TH15_PO / 14:25 – 14:30

CONGENITAL BRONCHIAL ATRESIA: HOW DO WE TREAT IT? A SYSTEMATIC REVIEW.

Noemi Pasqua[1], Ilia Bresesti[2], Salvatore Zirpoli[3], Michele Ghezzi[4], Valerio Gentilino[1], Federica Pederiva[5]
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Abstract

Aim of the study: There are no guidelines for the management of congenital bronchial atresia (CBA) as isolated entity, expecially for the asymptomatic cases. We therefore analyzed all cases of CBA in children and adults to envision future treatment guidelines.

Methods: According to PRISMA guidelines, a systematic review searched all studies reporting pediatric (<15 years) and adult (≥15 years) patients with CBA.

Main results: Of 3686 studies reviewed from 1965 to 2022, 527 were analyzed, and 101 (295 patients) meeting the inclusion criteria were considered. In most cases, both children and adults were treated surgically when symptomatic, except for non-recurrent upper respiratory infections in children, and conservatively when asymptomatic. However, 1/3 of asymptomatic patients in both groups received surgery (Table).

Conclusions: Pediatric and adult thoracic surgeons seem to agree to perform surgery in symptomatic cases, and to treat conservatively the asymptomatic ones. The reason for performing surgery in 1/3 of asymptomatic patients in both groups was not stated and should be further investigated.

	Children (<15y) n=191			Adults (≥15y) n=104		
Age at diagnosis (years, mean±SD, range)	3.5±4 (0-14)			32.5±4 (15-74)		
Age at surgery (years, mean±SD, range)	1±3 (0-14)			32.3±4 (16-63)		
SYMPTOMS AND TREATMENT (%, C=conservative; S=surgery)						
	tot	C	S	tot	C	S
Perinatal respiratory distress	9.4	0	100	0		
Upper respiratory infections	21	82.5	17.5	30	29	71
Pneumonia	34.5	3	97	12.5	0	100
Dyspnea	2.1	0	100	5.8	33.3	66.7
Shortness of breath on exertion	1.6	33	67	10.6	36.4	63.6
PNX	0			6.7	42.9	57.1
Asymptomatic	31.4	68.3	31.7	34.6	72.2	27.8

13:30 - 14:30

Poster Presentation Session 3

Basic Science

(M2) Studio 1+2

Chair: Natilie Durkin (UK)

Christian Tomuschat (GER)

BS01_PO / 13:30 – 13:35

HYDROGELS DERIVED FROM PIGLET AND HUMAN SPLEEN FOR REGENERATIVE MEDICINE

Tarek Saleh[1], Yusuke Shigeta[1,2], Joe Davidson[1], Alessandro Pellegata[1], Giulia Nucci[3], Giovanni Giuseppe Giobbe[1], Simon Eaton[1], Stavros Loukogeorgakis[1], Paolo De Coppi[1]
[1]Stem Cells and Regenerative Medicine Section, Developmental Biology and Cancer, Great Ormond Street Institute of Child Health, University College London, London, United Kingdom. [2]Department of Pediatric General and Urogenital Surgery, Juntendo University, Tokyo, Japan. [3]Italian Institute of Technology, Polytechnic University of Milan, Milano, Italy

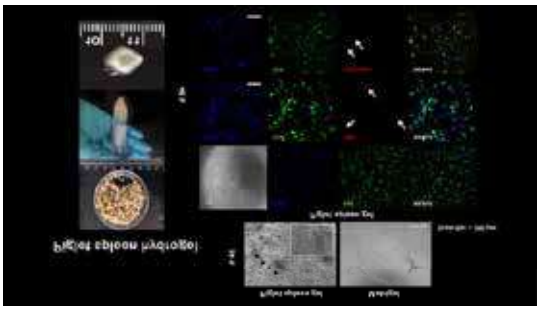
Abstract

Aim of the Study: Organ-derived hydrogels mimicking tissue-specific extracellular matrices are relevant in the context of tissue regeneration. As they are derived from native tissue, these may have favourable specificity and biocompatibility compared to synthetic polymers. We aimed to produce hydrogels from decellularized piglet or human spleen and evaluate their cytocompatibilities for regenerative propose.

Methods: Spleens were obtained from healthy piglets or paediatric patients with secondary splenomegaly. Samples decellularized and milled to obtain ECM powder. Hydrogels were produced by solubilization, neutralization and self-gelation. Analysis of structural, biochemical, physical, and mechanical parameters was performed. BM-MSCs, human endothelial and human liver cells were seeded on hydrogels and cytocompatibility was investigated both in vitro and in vivo.

Main results: Decellularization was shown to be optimal in all samples. Following solubilization, hydrogels were successfully prepared from both piglet and human spleens. Interestingly, viscoelastic and cytocompatibility properties of these hydrogels were comparable to those of Matrigel. Furthermore, spleen hydrogels could support the viability and growth of BM-MSCs, human endothelial cells, and human liver cells.

Conclusions: Deriving hydrogels from native organs may allow for the use of such materials in generation of autologous cell-based therapy. Splenic hydrogels represent a promising alternative to conventional culture methods with fewer obstacles for in vivo delivery of products.



BS02_PO / 13:35 – 13:40

DELETION OF THE INFLAMMATORY GATEKEEPER A20 REVERSES SEPSIS-INDUCED ILEUS IN MICE.

Johannes Duess, Carla Lopez, Maame Sampah, Asuka Ishiyama, Koichi Tsuboi, Daniel Scheese, Steve Steinway, Thomas Prindle, William Fulton, Sanxia Wang, Meghan Wang, Peng Lu, Chhinder Sodhi, David Hackam
Division of Pediatric Surgery, Department of Surgery, Johns Hopkins University School of Medicine, Baltimore, USA

Abstract

Aim of the Study: Development of ileus in septic children is a major cause of morbidity, in part because molecular pathways mediating ileus remain unknown. Inflammatory gatekeeper A20 is a crucial regulator of abdominal sepsis, suggesting that A20 may also regulate sepsis-induced ileus. We hypothesize that A20 exerts cell-specific effects on impairing gastro-intestinal motility and inducing ileus during intra-abdominal sepsis in mice.

Methods: Ileus was induced in male mice at 2-3 weeks of age by intra-peritoneal injection with gram negative bacterial lipopolysaccharide (LPS, 1-5mg/kg) for 6h. Motility was measured after oral administration of fluorescent tracer FITC (100µL), following which serial sections from stomach to colon were divided into 1cm sections, from which FITC fluorescence revealed Geometric motility center. Terminal ileum was harvested for expression of sepsis cytokine (TNF-α) by qRT-PCR and morphology by H&E staining. Cell-specific roles for A20 were determined by genetically deleting A20 from intestinal epithelium by crossing $A20^{loxP}$ with $villin^{cre}$ mice (A20-mice).

Main results: Following treatment with LPS, A20-mice appeared severely lethargic with a significantly higher expression of TNF-α in intestinal epithelium as compared with wild-type mice ($p<0.05$). H&E staining revealed significant inflammation and mucosal disruption in septic A20-mice. Strikingly, LPS-induced sepsis significantly reduced intestinal motility in A20-mice compared to wild-type mice ($p<0.05$), confirming that A20 expression in intestinal epithelium regulates sepsis and ileus response. There was no difference between LPS-treated and non-treated wild-type mice.

Conclusions: Intestinal A20 regulates development of sepsis-induced ileus in mice, suggesting that cell-specific A20-therapies may improve outcomes in septic children.

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BS03_PO / 13:40 – 13:45

IN VITRO EVALUATIONS OF A RAPIDLY ASSEMBLED TISSUE ENGINEERED CONDUIT FOR A NEOURETHRA

Nikolai Juul[1], Fatemeh Ajalloueian[2], Oliver Willacy[1], Carmen Almendras[1], Clara Chamorro[3], Magdalena Fossum[1,3]
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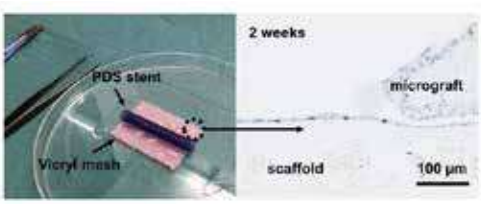
Abstract

Aim of the Study: Reconstructive surgery is often impeded by lack of native tissue. We expanded autologous urothelial micrografts onto an accessible and easy-to-use scaffold for primary surgical reconstructive surgery. The aim of this study was to perform in vitro evaluations of a conduit designed for reconstructing a neourethra.

Methods: The mucosal layer of three porcine urinary bladders was dissected and minced into 1 mm^2 micrografts and seeded onto scaffolds consisting of Vicryl® mesh and compressed collagen at concentrations of 60% or 80%. The scaffolds were cultured up to 4 weeks. Cell proliferation, permeability, and biomechanical properties were evaluated weekly. Furthermore, one scaffold was tubularized to a biodegradable PDS stent and cultured for one month.

Main results: The collagen scaffolds were evenly populated by single-layered urothelium after two weeks, and multilayered (>3 layers) urothelium with a well-defined basement membrane after four. After one week, 60% collagen revealed a higher permeability, while permeability markedly decreased in both groups after three weeks, as cells expanded. Biomechanical tensile tests demonstrated higher strength and extensibility properties of the mesh, compared to the native urethras of the pigs.

Conclusions: We have designed a conduit based on autologous tissue fragments that were integrated in an easy-to-use scaffold. The conduit performed well in terms of cell proliferation, barrier function and biomechanical strength in vitro. The conduit has the potential of serving as a tubular graft for future reconstruction of a neourethra, and further in vivo animal studies are ongoing.



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BS04_PO / 13:45 – 13:50

ATTENUATED LPS-INDUCED PRO-INLFAMMATORY RESPONSE BY β–CATENIN STABILIZATION IS NOT MEDIATED VIA DIRECT β-CATENIN-P65 PROTEIN INTERCATION IN IEC-6 CELLS

Florentine Weise, Nicole Peukert, Steffi Mayer, Martin Lacher, Jan Riedel
University Leipzig, Leipzig, Germany

Abstract

Aim of Study: Impaired intestinal endotoxin tolerance is seen in human preterms suffering from necrotizing enterocolitis (NEC), but the underlying mechanism remains unknown. The cell adhesion molecule β-catenin plays a crucial role in transcriptional activation of proliferation and cell growth in intestinal epithelial cells (IECs) and is reduced in intestinal tissue of NEC patients. The study aims to elucidate the effects of stabilized β-catenin on the LPS-induced pro-inflammatory signaling of IECs.

Methods: To stabilize β-catenin, we treated IEC-6 cells with the commercial GSK3-β inhibitor CHIR99021 (10µM) under serum free conditions overnight and subsequent LPS stimulation (0.1µg/mL). The activation status of NFκB-p65 was assessed by Western Blot and Immunofluorescence after 30min and gene expression levels by RT-PCR after 3hrs. Co-Immunoprecipitation was performed to evaluate p65-β-catenin protein interaction.

Main results: We observed a reduction in the phosphorylation status of p65 (A) and a diminished p65 nuclear accumulation upon LPS stimulation after β-catenin stabilization (B). We detected an attenuated transcriptional activity of p65 as seen by a reduced expression of TNF-α (C). Co-Immunoprecipitation did not reveal a direct p65-β-catenin protein interaction (D).

Conclusions: The stabilization of β-catenin inhibits the LPS-induced p65 activation and nuclear translocation associated with a decreased TNF-α mRNA expression. The repressive state of p65 is not associated with an influence of stabilized β-catenin through direct protein interaction with p65 in IEC-6 cells. This renders β-catenin to be a suitable pharmaceutical target for attenuation of pro-inflammatory conditions as seen in NEC patients.

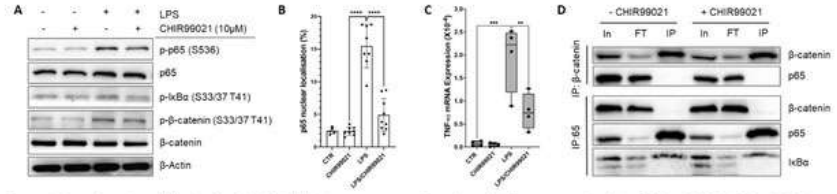


*Figure 1: Beta-Catenin stabilization by GSK3-β inhibition attenuates p65 mediated inflammatory signaling (****p<0.0001; ***p=0.0001; **p<0.005)*

BS05_PO / 13:50 – 13:55

DECELLULARIZED HUMAN HEALTHY AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) LUNG TISSUE TO MODEL AT2 PROGENITORS ENGRAFTMENT AND DIFFERENTIATION.

Yusuke Shigeta[1,2], Soichi Shibuya[2], Tarek Saleh[1], Sahira Khalaf[1], Zoe C Frazer[3], Darrell N Kotton[4], Federica Michielin[1], Paolo De Coppi[1]
[1]Stem Cells and Regenerative Medicine Section, Developmental Biology and Cancer, Great Ormond Street Institute of Child Health, University College London, London, United Kingdom. [2]Department of Pediatric General and Urogenital Surgery, Juntendo University, Tokyo, Japan. [3]Department of Surgery and Cancer, Imperial College London, London, United Kingdom. [4]Center for Regenerative Medicine of Boston University and Boston Medical Center, Boston, Boston, Massachusetts, USA

Abstract

Aim of the Study: Chronic lung diseases such as chronic obstructive pulmonary disease (COPD) affect both children and adults. However, the lack of relevant COPD human in vitro models prevents to identify effective therapeutical strategies to promote lung regeneration. Human lung tissue decellularization is a useful technique to study the engraftment and differentiation of lung alveolar progenitor cells on lung-specific matrices. The aim of this study is to develop an in vitro model to study the interaction of alveolar lung progenitors with healthy and COPD-specific extracellular matrix (ECM).

Methods: Human lung tissue collected from lobectomies and segmentectomies were resected macroscopically, cannulated and perfused with decellularization reagents. Characterizations were performed by immunofluorescence to investigate the microscopic differences between normal and decellularized human lungs. HiPSC-derived epithelial type 2 progenitor cells (iAT2) were expanded in a 3D organoid culture, dissociated at single-cell, and further cultured on 50µm-thick decellularized human lung slices in air-liquid interface (ALI). After 7 days, cell phenotype was assessed by qPCR and immunostaining analysis.

Main results: Decellularized lung scaffolds retained huge amounts of lung extracellular matrix, with no residual cells. We observed iAT2 engraftment on both healthy and emphysematous decellularized lung slices. Additionally, the lung-specific matrix promoted iAT2 differentiation towards both type 1 and type 2 mature alveolar cells.

Conclusions: Human healthy and emphysematous lung tissue was successfully decellularized, preserving the ECM components and structure. We observed engraftment and differentiation of iAT2 on both lung scaffolds, providing a proof-of-concept model to investigate lung regeneration in COPD lungs.

BS06_PO / 13:55 – 14:00

CIRCULATING ENDOTHELIAL CELLS AND ENDOTHELIAL PROGENITORS' IDENTIFICATION IN INFANTILE HEMANGIOMAS PRE- AND POST ORAL PROPRANOLOL ADMINISTRATION: A PROSPECTIVE COHORT STUDY.

Maria Enrica Miscia[1,2], Pasquale Simeone[3], Gabriele Lisi[1,2], Laura Pierdomenico[3], Giulia Catitti[3], Domenico De Bellis[3], Dacia Di Renzo[2], Giuseppe Lauriti[1,2], Marco Marchisio[3], Paola Lanuti[3]
[1]Department of Medicine and Aging Science, "G.d'Annunzio" University, Chieti-Pescara, Chieti, Italy. [2]Pediatric Surgery Department, "Spirito Santo" Hospital, Pescara, Italy. [3]Center for Advanced Studies and Technology (C.A.S.T.), "G. d'Annunzio" University, Chieti, Italy

Abstract

Aim of the study: Infantile Hemangioma (IH) is a benign vascular tumor whose evolution is affected by propranolol administration through unknown mechanisms. Circulating Endothelial Cells (CEC) and Circulating Endothelial Progenitor cells (EPC) are biological markers of endothelial activity/disfunction and may play a pivotal role in the evolution of IH. Our aims were to detect variations in CEC and EPC concentration: 1. in IH versus healthy controls; 2. in IH before and after propranolol administration.

Methods: Thirty-four children (26 cases; 8 controls) from our Department underwent peripheral blood sampling to study CECs and EPCs via cytofluorimetry (based on flowSom algorithm of the Flowjo software). Statistical analyses were performed using XLSTAT ver. 2014.5.03 and GraphPad Prism ver. 8.0. Data were expressed as mean ± standard deviation.

Main Results: 1. Number of CEC and HSC was higher among cases than controls, even if not statistically significant (36,5 ± 43,55, range 1,96-159,8versus 8,732 ± 8,783, range 0-20,17; p=0.1444 for CEC; 4866 ± 5359, range 647,4-18983 versus 1503 ± 1713, range 79,39-45,46; p=0.1549 for HSC). Number of CEC decreased with the evolution of the hemangioma (Δ decrease=78%). 2. Four/26 cases underwent a blood sample after oral propranolol administration. A population of Endothelial Progenitor Cells (EPC) expressing CD309 was detected in patients (5% +/- 0.4 of CD34+ cells) and disappeared after treatment. Nonetheless, a population of Annexin V + CEC (about 5% of Total) apperead after oral propranolol administration (figure).

Conclusions: CECs may represent a marker of progression of disease. Interestingly, propranolol might impact on EPC inducing cell apoptosis, thus stimulating IH regression.

BS07_PO / 14:00 – 14:05

TISSUE ENGINEERED CONDUITS FOR URINARY DIVERSION IN MINIPIGS: A PROOF-OF-PRINCIPLE PILOT STUDY

Nikolai Juul[1], Oliver Willacy[1], Jørgen Thorup[2], Clara Chamorro[3], Magdalena Fossum[1,3]
[1]Laboratory of Tissue Engineering, Department of Pediatric Surgery, Rigshospitalet, Copenhagen, Denmark. [2]Department of Pediatric Surgery, Rigshospitalet, Copenahgen, Denmark. [3]Laboratory of Tissue Engineering, Department of Women's and Children's Health, Karolinska Institute, Stockholm, Sweden

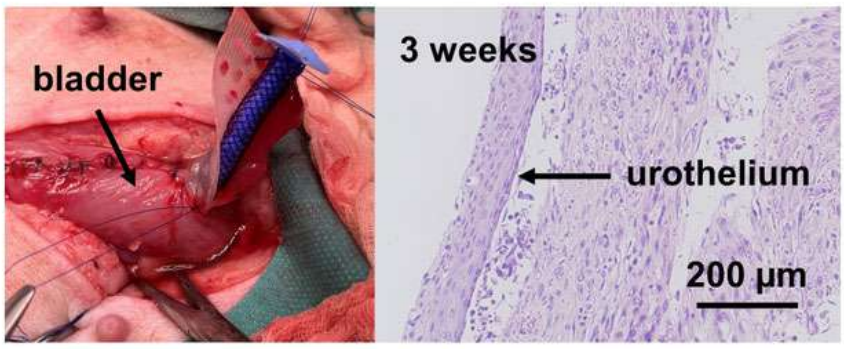
Abstract

Aim of the Study: Long-term urinary diversion may be used in patients with anatomical or neurogenic bladder dysfunction. Today, the conventional techniques used for creating conduits are associated with complications including infections, stone formation, and intraperitoneal adhesions. We aimed to surgically evaluate the performance of a tissue engineered scaffold for reconstruction a neourethra in vivo in a minipig model.

Methods: A conduit was constructed perioperatively, using collagen gel reinforced with Vicryl® mesh and a PDS stent. Healthy bladder mucosa from the pig's native bladder was seeded to the luminal side of the conduit as minced micrografts. The conduit was anastomosed to the anterior bladder dome and closed distally in the subcutis close to the skin surface. After three weeks, the animals were euthanized, and the conduit specimens were surgically removed for histological evaluation.

Main results: Conduits were successfully implanted in 3/3 animals, which all did well and regained normal habitus quickly after the surgery. Upon autopsy, the conduit appeared patent and without macroscopic signs of rejection or infection. Three-week histology revealed well-defined, multilayered urothelium in the proximal, middle, and distal sections of the conduit in all three minipigs. Furthermore, neurovascular ingrowth was demonstrated in all animals.

Conclusions: The method proved histologically successful in all three animals. The findings have justified the initiation of a larger minipig study including radiology and functionality testing, as well as control animals without autologous micrografts on the scaffold. Our minipig model will be useful to develop a tissue engineered urinary diversion without laparatomy.



BS08_PO / 14:05 – 14:10

BILIATRESONE AND BILIARY ATRESIA – DISEASE MODELING IN C57BL/6J MURINE NEONATES.

Hans Christian Schmidt, Johanna Hagens, Pauline Schupert, Clara Philippi, Zhong Wen Li, Laia Pagerols Raluy, Birgit Appl, Magdalena Trochimiuk, Konrad Reinshagen, Christian Tomuschat
University Medical Center Hamburg-Eppendorf, Department of Pediatric Surgery, Hamburg, Germany

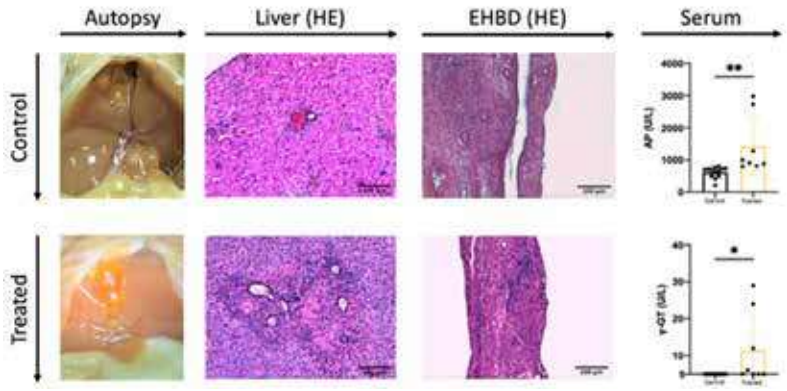
Abstract

Aim of the study: Biliary atresia (BA) is an inflammatory and fibrotic affection of the extrahepatic bile duct (EHBD). Biliatresone is an isoflavonoid known to cause a reduction of Glutathione levels and SOX17 (transcription factor) downregulation. Biliatresone effectively altered EHBD development in sheep, zebrafishes, BALB/c mice and human cholangiocyte organoids. In this study we examined the effect of biliatresone in C57BL/6J mouse.

Methods: Following ethical approval (N045/21), Biliatresone or control solution were injected intraperitoneally in C57BL/6J mice (n=39) within the first 36 to 48 hours of life. Serum was analyzed by photometry, and harvested livers and EHBDs were stained with hematoxylin and eosin (HE).

Main results: The injection of 70 µg Biliatresone in C57BL/6J mice (n=19) resulted in clinical signs of BA in 42 % (n=8). Affected neonates exhibited jaundice, ascites, clay-colored stools, yellow urine, and impaired weight gain. The gallbladders of jaundiced neonates were hydropic and EHBD were twisted and enlarged. Serum and histological analysis proved cholestasis. No anomalies were seen in the liver and EHBD of control animals.

Conclusions: With our study we join a chain of evidence confirming the BA-inducing effect of biliatresone. We want to draw attention to plant toxins and microbiota that can digest common food ingredients to toxic structures like biliatresone. Further evaluating animal models and clinical studies are necessary for final confirmation.



BS09_PO / 14:10 – 14:15

ENTERIC NEUROSPHERES DERIVED FROM PATIENTS WITH HIRSCHSPRUNG'S DISEASE SHOW ALTERED INTERLEUKIN-6 EXPRESSION UNDER PROINFLAMMATORY CONDITIONS

Pauline Schuppert, Johanna Hagens, Hans Schmidt, Laia Pagerols Raluy, Magdalena Trochimiuk, Zhongwen Li, Konrad Reinshagen, Christian Tomuschat
University Medical Center Hamburg-Eppendorf, Hamburg, Germany

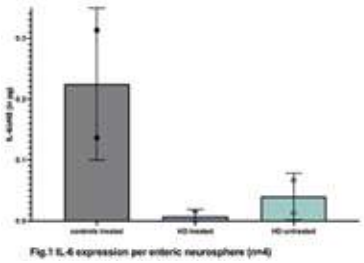
Abstract

Aim of the Study: Enteric neurospheres (eNS) have been of interest for laboratories investigating Hirschsprung's disease (HD) for years. However, the role of the enteric nervous system in proinflammatory activity of the intestinal immune system has mainly been studied in the context of infectious diseases. In this study, we look at the proinflammatory response of eNS derived from ganglionic tissue of patients with HD.

Methods: Following ethical approval, myenteric plexus was isolated by overnight digestion (controls n=2, HD n=2). Neurospheres arose within 24 to 48 hours and were stressed with 100ng/ml lipopolysaccharides for 22 hours. Supernatant was collected and screened for different proinflammatory cytokines such as Interleukin-6 (IL-6) by Sandwich-ELISA. For HD samples supernatant of untreated eNS was collected additionally.

Main results: eNS derived from ganglionic tissue of patients with HD expressed lower levels of IL-6 after lipopolysaccharides treatment compared to controls. Interestingly, the supernatant of untreated eNS from both HD samples showed higher levels of IL-6 than their corresponding treated eNS.

Conclusions: Although additional samples are required, these findings might support two very different hypotheses in HD research: Firstly, they encourage the approach to HD as a systemic disease rather than a condition strictly confined to the aganglionic segment of the gut, as all samples were derived from ganglionic intestine. Secondly, they might be a hint towards the mostly unknown pathophysiology behind Hirschsprung-associated enterocolitis.



BS10_PO / 14:15 – 14:20

THE EFFECTS OF DİFFERENT SUTURE MATERİALS ON İNTESTİNAL ANASTOMOTİC HEALİNG: AN EXPERİMENTAL STUDY

Osman Uzunlu[1], Erdem Comut[2], Esin Avcı[3], Hande Senol[4]
[1]University of Pamukkale, Faculty of Medicine, Department of Pediatric Surgery, Denizli, Turkey. [2]University of Pamukkale, Faculty of Medicine, Department of Pathology, Denizli, Turkey. [3]University of Pamukkale, Faculty of Medicine, Department of Biochemistry, Denizli, Turkey. [4]University of Pamukkale, Faculty of Medicine, Department of Biostatistics, Denizli, Turkey

Abstract

Aim of the Study: This experimental comparative study was to evaluate the local effects of three different suture materials on intestinal anastomosis healing.

Methods: Ethical approval was obtained from the University Ethical Committee (E-60758568-020-176720). A prospective, experimental comparative analysis was conducted on 24 rats. They were divided into three equal groups; group 1 underwent colonic anastomosis with vicryl suture material, group 2; underwent colonic anastomosis with polypropylene suture and group 3; underwent colonic anastomosis with polydioxanone (PDS) suture. The second operation underwent the 7th postoperative day. Adhesion score, anastomotic leakage, anastomotic bursting pressure, hydroxyproline levels and histopathologic examination were evaluated.

Results: All animals survived, and no leakage, intestinal obstruction, or wound infection was observed during the experiment. The adhesion score was evaluated according to the Diamond classification and same in all groups. Median anastomotic bursting pressure was 125.75 mmHg (10-241) in the vicryl group, 159.25 mmHg (113-190) in the polypropylene group and 154.50 mmHg (20-212) in the PDS group. Hydroxyproline tissue concentrations were in the vicryl group 1699.92 ± 220.8 ng/mg (range: 1509.81 - 2186.47), in the polypropylene group 1126.24 ± 607.12 ng/mg (range: 53.22 - 1815.63) and 1547.86 ± 335.2 ng/mg (range: 973.66 - 1973.2) in PDS group. There was no difference among groups regarding the inflammatory response evaluated by histopathology. There was no statistical significance in all variables evaluated.

Conclusions: This experimental study demonstrates that; suture materials did not worsen tissue healing on intestinal anastomosis, both absorbable and non-absorbable suture materials could be used safely in every situation.

13:30 - 14:30

Poster Presentation Session 4

Upper Gastrointestinal I

(M2) Studio 1+2

Chair: Ausra Lukosuite-Urboiene (LIT)

Michal Rygl (CZE)

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UG01_PO / 13:30 – 13:35

IDENTIFICATION OF POSSIBLE FACTORS FOR EOSINOPHILIC ESOPHAGITIS ONSET IN ESOPHAGEAL ATRESIA PATIENTS

Camilla Pagliara[1], Chiara Zanettin[1], Elisa Zambaiti[1,2], Luca Maria Antoniello[1], Piergiorgio Gamba[1]
[1]Pediatric Surgery, Department of Woman and Child Health, Padova, Italy. [2]Pediatric Surgery, Regina Margherita Pediatric Hospital, Torino, Italy

Abstract

Aim of the Study: During esophageal atresia (EA) follow-up, gastro-esophageal reflux (GER) and dysmotility play a major role in long-term morbidity. Recently, the presence of Eosinophlic Esophagitis (EoE) in EA patients has been described; however, missing this diagnosis may worsen morbidity of these patients, increasing dysmotility and eventually leading to esophageal stricture. We therefore aimed to identify clinical characteristics predisposing EoE onset in EA patients.

Methods: Observational retrospective monocentric study was conducted, and all patients diagnosed with EA underwent from 01.01.2010 to 12.31.2022 to an endoscopy with esophageal biopsies were included. For each patient, demographic, clinical and histopathological data were collected, comparing EA/EoE patients with overall EA population.

Main results: Of the 103 EA patients in follow-up in the study period, 18 had EoE (EA/EoE group, 17,5% of the total). Median age at EoE onset was 3 years (IQR 1.4-10.1) and common symptoms were regurgitation (66.7%), food intolerance (55,6%) and food impaction (50%). Comparing the two groups, AE/EoE had a higher prevalence of long-gap EA (47%vs17%, p=0.009) and need for gastrostomy placement (38.9%vs16,7%, p=0.03), reactive airway disease (55.6%vs15.5%, p=0.0002), frequent food impaction (33%vs13%, p=0.03) and presence of GER disease non-reponder to medical therapy needing anti-reflux procedure (50%vs21.7%, p=0.01) compared to general EA population.

Conclusions: EoE should always be investigated during follow-up of EA patients, especially if predisposing factors are present, such as an history of long-gap EA, need for gastrostomy or GER surgery, or in case of new symptoms onset, as frequent food impaction or reactive airway disease.

UG02_PO / 13:35 – 13:40

THE IMPACT OF VACTERL ASSOCIATION AND CHROMOSOMAL ANOMALIES ON ESOPHAGEAL ATRESIA OUTCOMES: RESULTS FROM EUPSA ESOPHAGEAL ATRESIA REGISTRY

Tutku Soyer[1], Federica Pederiva[2], Luca Pio[3], Mohit Kakar[4], Nigel Hall[5], Francesco Morini[6]
[1]Hacettepe University Faculty of Medicine, Department of Pediatric Surgery, Ankara, Turkey. [2]Department of Pediatric Surgery, "Vittore Buzzi" Children's Hospital, Milano, Italy. [3]Department of Surgery, St. Jude Children's Research Hospital, Memphis, USA. [4]Department of Pediatric Surgery, Riga Stradins University & Children's Clinical University Hospital, Riga, Latvia. [5]University Surgery Unit, Faculty of Medicine, University of Southampton, Southampton, United Kingdom. [6]Neonatal Surgery Unit, Meyer Children's Hospital IRCCS, University of Florence, Florence, Italy

Abstract

Aim of the Study: To evaluate the impact of VACTERL association and chromosomal anomalies (VACTERL-CA) on outcome of children with esophageal atresia (EA).

Methods: All EA patients enrolled in the EUPSA Esophageal Atresia Registry from 2014 to 2017 were included. Patients with at least three VACTERL and/or any chromosomal anomaly were grouped as VACTERL-CA. Demographic features, treatment options and outcomes of patients with and without VACTERL-CA were compared.

Results: 82/372 (22.0%) patients had VACTERL-CA. The VACTERL-CA group had significantly lower median (range) gestational age [36 (34-38) vs 38 (36-39) weeks], birth weight [2332 (1846-2784) vs 2800 (2145-3202) grams], length [46 (43-49) vs 48 (44-50) cm] and APGAR scores [8 (6-9) vs 9 (8-9) @5 minutes; 9 (8-10) vs 9 (9-10) @10 minutes] ($p<0.05$). The two groups had comparable rate of primary and delayed esophageal anastomosis and complications. The rate of discharge home from hospital after completed treatment (68/82 vs 271/290) and body weight at discharge [2927 (2587-3522) vs 3340 (2892-3886) grams] were significantly lower in the VACTERL-CA group ($p<0.05$). Mortality rate was significantly higher in VACTERL-CA cases (14.6% vs 5.2%; $p<0.05$). However, EA-related mortality was higher in non-VACTERL cases (1.0% vs 0%; $p<0.05$), whereas mortality related with associated anomalies was more common in VACTERL-CA patients (25.6% vs 9.0%; $p<0.05$).

Conclusion: Despite the high incidence of associated anomalies in VACTERL-CA patients, outcomes strictly related to surgical treatment of EA were similar to those without VACTERL. Mortality rate is significantly higher in VACTERL-CA cases and almost completely due to associated anomalies.

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UG03_PO / 13:40 – 13:45

THE BENEFICIAL EFFECTS OF THE TRANS-ANASTOMOTIC FEEDING TUBE IN THE MANAGEMENT OF CONGENITAL DUODENAL OBSTRUCTION: A META-ANALYSIS

Serkan Arslan, Mustafa Azizoğlu
Dicle University Department of Pediatric Surgery, Diyarbakır, Turkey

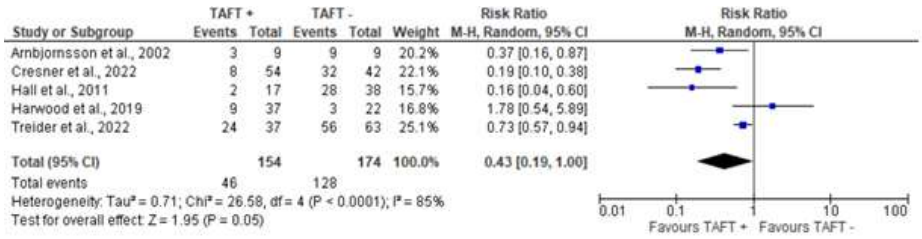
Abstract

Aim of the Study: In several recent studies, placement of a transanastomotic tube has been associated with early feeding and a reduced risk of sepsis. To assess the evidence on the efficacy and safety of TAFT in neonates with CDO, we conducted a systematic review.

Methods: Using the databases EMBASE, PubMed, and Cochrane, we carried out a thorough literature search up to 2022. Studies comparing TAFT + and TAFT - for CDO were included.

Main results: 505 CDO patients (223 TAFT and 282 no-TAFT) who met the inclusion criteria were selected. The TAFT + group had a shorter time to reach full feeds (WMD -6.63, 95% CI -8.83 to -4.43; P<0.001) and had significantly less CVC insertion (I2=85%), (RR: 0.43, 95% CI 0.19 to 1.00; P<0.05). Fewer patients in the TAFT + group received PN (I2=78%) (RR: 0.43, 95% CI 0.20 to 0.95; P<0.05). Anastomotic leakage was not significantly different across the groups (I2=0%) (RR: 2.81, 95% CI 0.50 to 15.90; P>0.05). There was no statistically significant difference in terms of the development of sepsis (I2=37%) (RR: 1.35, 95% CI 0.52 to 3.46; P>0.05). No statistically significant difference was observed in terms of length of stay (I2=82%) (WMD 2.22, 95% CI -7.59 to 12.03; P>0.05) and mortality (I2=0%) (RR: 0.55, 95% CI 0.07 to 4.34; P>0.05).

Conclusions: The use of the transanastomotic tube resulted in early initiation of full feeding, less CVC insertion, and less need for PN.



UG05_PO / 13:50 – 13:55

ESOPHAGEAL STENTING IN CATASTROPHIC COMPLICATIONS AFTER ESOPHAGEAL ATRESIA REPAIR: OUR EXPERIENCE AND LITERATURE REVIEW

GABRIELA VALLEJO CHAMORRO, JUAN CARLOS DE AGUSTIN ASENCIO
Department of Pediatric Surgery, Gregorio Marañón Hospital, MADRID, Spain

Abstract

Aim of the Study: Difficult cases of Esophageal Atresia (EA) develop intractable complications. The use of esophageal stents in these children is still uncommon, especially due to the limited stent sizes available for infants. The aim of our study is to propose a guideline for the correct choice of material and size stent for paediatric age.

Methods: We present a retrospective study and literature review of pediatric cases of Esophageal Atresia complications treated with Silicon covered nitinol stents, as there is no small esophageal stents designed for infants. Relevant clinical and demographic data are analyzed. Patients were very ill to sustain a surgical operation to treat complications, so temporal stenting were offered.

Main results: They were 11 patients, 7 males and 4 females, range of age from 20 days to 5 years. Eight of them initially had TEF and the other three had pure EA with no fistulae. Indications for stenting were recurrent TEF, stenosis and perforation. Size of the stent ranged from 10 to 20 mm in diameter and from 30 to 80 mm in length. The duration of placement was from 15 days to 9 weeks. Further dilatation was needed in four, TEF recurrence in three. Three cases died.

Conclusions: Temporally esophageal stenting after catastrophic EA complications allowed resolution of severe dehiscence and recurrent TEF. Using this simple procedure can be lifesaving. Esophageal stents can play a role in managing these patients, especially as a bridge therapy to surgical repair. The choice of material and size stent is essential to avoid added complications.

UG06_PO / 13:55 – 14:00

CAUSTIC INGESTION: IS EARLY ENDOSCOPIC EVELUATION NECESSARY?

Kamuran Tutuş, Şeref Selçuk Kılıç, Selcan Türker Çolak, Önder Özden, Murat Alkan, Recep Tuncer
Çukurova University Faculty of Medicine Department of Pediatric Surgery, Adana, Turkey

Abstract

Aim of the Study: Endoscopic evaluation in a short time after caustic ingestion is still a contentious topic. We aimed to present our patients outcomes who were treated without early endoscopic evaluation.

Methods: The patients with caustic ingestion, between 2012-2022, who followed without an early endoscopy and evaluated upper GI radiographs three weeks after ingestion, were enrolled into the study. Demographic and clinical data of the patients in the study were recorded.

Main results: There were 101 patients who met the study criteria. Of the patients in the study, 64 (61%) were male, 31 (39%) were female and their median age was 2.5 (1-17) years. Most of the caustic substances were alkaline (57%). Thirty-two of the patients had oropharyngeal hyperemia, three had lip edema, and one had oropharyngeal burn. Six patients had respiratory distress and stridor. The median initiation of oral feeding was 1 (1-15) day, and the median hospitalization time was 2 (1-40) days. Upper GI radiography was normal in 96 (95%) of the patients, and 5 had esophageal stenosis. Dilatation therapy was applied to patients with esophageal stenosis.

Conclusions: It may be safe to follow up with upper GI radiography at the 3rd week after caustic ingestion without endoscopy in the early period after caustic ingestion. This conservative approach may help the patient avoid the risks and costs of anesthesia and upper GI endoscopy.

UG07_PO / 14:00 – 14:05

OMEGA FEEDING JEJUNOSTOMY IN PEDIATRIC POPULATION- A COMPARATIVE STUDY OF 10 YEARS SINGLE CENTER EXPERIENCE

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Abstract

Aim of the Study: Children with feeding problems oftentimes require a gastrostomy (GT) +/-a fundoplication. However, this procedure is associated with high complications and morbidity rates. Omega Jejunostomy (OJ) is a relatively novel feeding method using a pouched-jejunal loop that enables insertion of a ballooned tube and avoids the need for an antireflux procedure. We aimed to compare these procedures.

Methods: A retrospective cohort of 49 consecutive children who underwent GT or OJ procedures at our institution between 2012-2022. Operating time, length of hospitalization (LOS), complications and feeding goals achievement were compared.

Main results: We included 12 OJ (3 male) and 37 GT (20 males) procedures. Median age at surgery was 5.5mo (range 0-168mo) for OJ, and 39mo (range 0-228mo) for GT (p=0.09). Gastroesophageal reflux was present in 42% of OJ and 38% of GT patients (p=0.75). Five OJ patients had previously failed GT+/-fundoplication. Mean operating times were comparable (OJ=47.7±11.6min vs. GT=38.5±12.8min, p=0.29), and LOS (OJ=37.9±40.7d vs. GT=26.7±24.7d, p=0.31). Overall complications included dislodgment (OJ=5 GT=8) and leak (OJ=2 GT=5), however mucosal ectropion (n= 2) and bowel obstruction (n=1) were exclusive for GT. Early (OJ=9%, GT=15%), and late (OJ=62%, GT=40%) complications were comparable (p>0.05). At discharge, 89% OJ and 82% GT patients achieved their feeding goals (p>0.05), and at 1-year 100% of the patients were adequately fed.

Conclusions: OJ provides a reasonable alternative for feeding. It is technically easier to perform, has minimal surgical complications, and can provide durable feeding access and achievement of goal feeds.

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UG08_PO / 14:05 – 14:10

SYSTEMATIC REVIEWS OF OUTCOMES IN THE REPAIR OF LAPAROSCOPIC HIATUS HERNIA IN CHILDREN

Timurs Zurmutaī[1,2], Zane Ābola[1,2], Amulya Saxena[3]
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Abstract

Aim of the Study: This systematic review analyzed the reported outcomes of laparoscopic hiatus hernia repair in children.

Methods: The literature was reviewed for articles published during 2003- 2023 on PubMed with search terms “hiatus hernia”, “children”, "laparoscopy", '''outcome', and analyzed according to PRISMA 2020 criteria. Bias was minimized, as the articles selection was performed by 2 reviewers.

Results: The review identified and selected 7 articles with 261 children with ages ranging from newborns-17 years that underwent laparoscopic hiatal hernia repair along with fundoplication. There were three reports with >10 patients. All patients received fundoplication, Nissen (n=185), Thal (n=74) and Toupet (n=2). The laparoscopic approach was associated with 4 (1.5%) conversions. There were 68 (26%) postoperative complications: esophageal stenosis (n=30), dysphagia (n=11), gastroesophageal reflux (n=1) and surgical site infection (n=1). There were 20 (7.6%) recurrences, and re-do surgery was performed predominantly through laparoscopy (n=19/20; 95%) with only open requiring the open approach. Utilization of patches for repairs is low (n=6), with 2 patients requiring a patch repair during the primary procedure; and 4 requiring patches on redo surgery (4/20; 20%). Patch materials employed were synthetic meshes (n=3), porcine small intestine submucosa (SurgisisTM) (n=2) and expanded polytetrafluoroethylene (ePTFE; GoreTex™) (n=1).

Conclusions: Hiatal hernia repair in children using the laparoscopic approach is successful in >90% cases with an extremely low rate of conversion; however postoperative morbidity remains high and affects ¼ cases. Application of patches remains low in primary repairs, but have found increased application of 20% in redo procedures.

UG09_PO / 14:10 – 14:15

HEALTHCARE COSTS ASSOCIATED WITH JEJUNAL TUBE FEEDING (JTF) IN PAEDIATRIC POPULATION

Olugbenga Awolaran, Rakesh Vora, Oliver Peatman, Manasvi Upadhyaya
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Abstract

Aim of the Study: JTF is increasingly utilized in children with chronic feeding difficulties. Frequent tube changes are needed (elective & emergency). Hospital and patient costs of JTF is poorly documented. Our aim was to assess these costs.

Methods: A retrospective review of JTF at a tertiary paediatric center (2011–2020) was performed. Intervention radiologists performed most of the tube changes (AMT G-JET® balloon or Freka® PEG-J devices) under general anesthesia. Overnight admissions cost more than day-case (£800vs£416). Increased comorbidity scores and younger age (<1year) attracted higher tariffs. Lower limit of the tariff bracket was used. Patients' journey details were calculated using Google maps® and GOV.UK advisory fuel rate.

Main results: 288-hospital visits for jejunal tube changes in 55-children were reviewed over a median duration of 25 months (2-110). Median number of tube change per patient was 2/year (1-7). 45% were emergency procedures. 55% needed overnight admission. The commonest complications were displaced (45%), blocked (15%) and damaged (13%) tubes. 5/55(9%) had major complications requiring further surgical interventions (gastric ulceration/bleeding-1, jejunal perforation-1, buried bumpers-3). The minimum median admission cost per patient per year was £12,246 (£3,899–44,224). Total annual hospital cost for tube changes in this cohort was at least £815,599. Patients travelled a median distance of 27miles (1-78). Median return travel duration was 134 minutes (12-294) by car and up to £27 fuel expenses per visit.

Conclusions: JTF is associated with significant hospital and patient costs. Better training to improve care of the tubes, facilitating scheduled changes as day-case and, ideally, locally could reduce costs.

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UG10_PO / 14:15 – 14:20

OUTCOMES OF STAGED REPAIR IN EXTREMELY LOW BIRTH WEIGHT INFANTS WITH ESOPHAGEAL ATRESIA/DISTAL TRACHEOESOPHAGEAL FISTULA

Alexandra Varga[1], Dishana Dookhun[2], Tamás Kovács[1]
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Abstract

Aim of the Study: Surgical management of extremely low birth weight (ELBW) neonates with esophageal atresia/distal tracheoesophageal fistula (EA/TEF) is challenging and remains controversial. The aim of this study was to evaluate the outcomes of staged repair with postponed gastrostomy in these patients.

Methods: Data of neonates with EA/TEF and birth weight <1000 g in our tertiary center were analyzed retrospectively (2017-2022). Descriptive analysis was used to summarize the outcomes.

Main results: Four ELBW infants with EA/TEF [M:F=3:1, mean gestational age 28.5 (27-31) weeks, mean birth weight 702 (650-760) g] were included. All had additional malformations. Because of their poor general condition primary repair was not feasible. To reduce the operative trauma, they underwent early open TEF ligation [mean age 2 (1-3) day of life (DOL)] followed by postponed gastrostomy [mean age 10.6 (6-23) DOL]. One infant with multiple developmental and cardiovascular disorders died one day after gastrostomy due to intraventricular hemorrhage, the remaining three had delayed open primary reconstruction (mean age 74.7 (69-79) DOL] after appropriate weight gain (>2.5 kg). All three infants survived (75%). Mean follow-up was 3.4 (2.7-4.8) years. Anastomotic leakage occurred in one and stricture in two cases requiring balloon dilatations. At present, all patients swallow without difficulties and thrives well. Table 1 summarizes the outcomes.

Conclusions: Staged repair of EA/TEF completed with postponed gastrostomy seems to be a beneficial treatment option for unstable ELBW infants, although further long-term studies on larger number of cases can provide more information.

Patient	Gestational age (weeks)	Birth weight (g)	Associated problems	Procedure (DOL)	Outcome	Follow-up (years)	Complications
1	27	650	PDA, PFO, Polydactyly Fused renal ectopia, hypospadia, cryptorchidism	Fistula ligation (2) Gastrostomy (23) Anastomosis (79)	Survived	4.8	Chest wall deformity
2	31	700	Multiple developmental and cardiovascular disorders	Fistula ligation (3) Gastrostomy (7)	Death	—	—
3	29	700	Situs inversus thoracis PDA Forearm deformity	Fistula ligation (2) Gastrostomy (8) Anastomosis (76)	Survived	2.8	Leakage Stricture
4	27	760	PDA, ASD	Fistula ligation (1) Gastrostomy (6) Anastomosis (69)	Survived	2.7	Stricture Tracheomalacia

Table 1. Demographics, operative data and follow up details
(DOL – day of life, PDA – patent ductus arteriosus, PFO – patent foramen ovale, ASD – atrial septal defect)

UG11_PO / 14:20 – 14:25

Endoscopic management of pancreatic pseudocysts

Andreea Moga, Iancu Gari, Laura Balanescu
Grigore Alexandrescu Children's Hospital, Bucharest, Romania

Abstract

Aim of the Study: Pancreatic pseudocysts (PP) are rarely encountered in the pediatric population. They are usually the result of pancreatic insult with ductal disruption and when conservative treatment fails, they require surgical drainage. Endoscopic drainage of PP is the standard of care in adult patients, but there are few studies that report the use of this technique in the pediatric population. The aim of this study is to report our initial experience using endoscopic drainage in pediatric patients.

Methods: Data of all patients with pancreatic pseudocyst who were admitted to our hospital from 2019 to 2022 and who underwent endoscopic drainage were analyzed retrospectively.

Main result: Ten patients with PP underwent endoscopic drainage. Mean age of children 12.7 years (5–17 years). Majority of children had idiopathic pancreatitis (7 patients), followed by trauma-related (2) and gallstone-related pancreatitis (1). Median size of PP was 88/70mm (61–175). Endoscopic drainage was successfully completed in 8 patients. Clinical success was achieved in 80 (%) children. Stents were left in place for a mean of 42 days. No recurrences were noted.

Conclusions: Endoscopic drainage of PP is safe and effective in pediatric patients, with a decrease in size of the PP. However more studies with larger cohorts are required.

UG12_PO / 14:25 – 14:30

NEONATAL SEGMENTAL VOLVULUS – A SYSTEMATIC REVIEW AND META-ANALYSIS

Maria Casalino[1], Maria Enrica Miscia[2,3], Giuseppe Lauriti[2,3], Estelle Gauda[4], Elke Zani-Ruttenstock[5,6]
[1]Department of Family Medicine, Queen's University, Kingston, Canada. [2]Department of Pediatric Surgery, Santo Spirito Hospital, Pescara, Italy. [3]Department of Medicine and Aging Science, "G.d'Annunzio" University of Chieti, Pescara, Italy. [4]Division of Neonatology, Hospital for Sick Children, Toronto, Canada. [5]Division of General and Thoracic Surgery, Hospital for Sick Children, Toronto, Canada. [6]Developmental and Stem Cell Biology Program, Hospital for Sick Children, Toronto, Canada

Abstract

Aim of the Study: Intestinal volvulus in the neonate is a surgical emergency either caused by midgut volvulus (MV) with intestinal malrotation or less commonly, by segmental volvulus (SV) without intestinal malrotation. The aim of our study was to investigate if MV and SV can be differentiated by clinical course, intra-operative findings, and postoperative outcomes.

Methods: Using a defined search strategy, two investigators independently identified all studies comparing MV and SV in neonates. PRISMA guidelines were followed, and meta-analysis was performed using RevMan5.3.

Main Results: Of 1,026 abstracts screened, 104 full-text articles were analyzed, and 3 comparative studies were selected (112 patients). There were no differences in gestational age (37 vs. 36 weeks), birth weight (2,989 vs.2,712 grams), age at presentation (6.9 vs.3.8 days). Preoperatively, SV was more commonly associated with abdominal distension (32% vs.77%; $p<0.05$), whereas MV with a whirlpool sign on ultrasound (57% vs.3%; $p<0.01$). Bilious vomiting had similar incidence in both (88±4% vs.50±5%). Intraoperatively, SV had a higher incidence of intestinal atresia (2% vs. 19%; $p<0.05$) and need for bowel resection (13% vs. 91%; $p<0.00001$, Figure). There were no differences in postoperative complications (13% MV vs. 14% SV), short bowel syndrome (15% MV vs. 0% SV; data available only from 1 study), and mortality (14% MV vs. 4% SV).

Conclusions: Our study highlights the paucity of studies on SV in neonates. Nonetheless, our meta-analysis clearly indicates that MV and SV are two separate entities with different clinical features and intra-operative findings.

13:30 - 14:30

Poster Presentation Session 5

Upper Gastrointestinal II

(M2) Studio 1+2

Chair: Kristiina Kryklund (FIN)

Rene Wijnen (NED)

UG13_PO / 13:30 – 13:35

LAPAROSCOPIC-ASSISTED POLYPECTOMY: DO YOU NEED TO FEEL IT? SEE IT, EXCISE IT, SORTED!

Ayman Goneidy, Andrew Ross, Warren Hyer, Muhammad Choudhry
Chelsea and Westminster hospital, London, United Kingdom

Abstract

Aim of the study: Small and large bowel polyps are commonly associated in children with Peutz-Jeghers syndrome (PJS) and juvenile polyposis Syndrome (JPS). A promising technique was described to identify polyps' locations laparoscopically without the need for digital palpation. The aim of this study is to report our center's experience in applying this laparoscopic-assisted polypectomy technique (LAP).

Methods: Prospectively maintained institutional data for patients <18 years who underwent LAP in a 10-year period was reviewed. Data collected included demographics, Diagnosis, post-operative complications, histopathology, and follow-up details. Patients >18 years and/or those who had endoscopic polypectomy were excluded.

Main results: Fifteen patients underwent 16 LAPs between 2011 and 2022 at a Median age of 11.8 years. M:F = 3:12. Twelve patients presented with PJS and 3 presented with JPS. All Patients underwent endoscopic assessment and were considered unsuitable for advanced-skill polypectomy based on size, location, or risk of perforation from invaginated muscularis mucosa. LAP was performed in 13 patients and laparoscopic-assisted right hemicolectomy in 2 presenting with caecal polyps. Polyps were easily identified intra-operatively with associated serosal indentation/invagination or previous tattooing (n=3). There were no conversions to open, and no post-operative complications encountered. Median hospital stay was 5 days. Histopathology was benign, except in one JPS patient where it showed Tubulo-villous adenoma.

Conclusions: LAP is a safe and efficient approach for excision of intestinal polyps that have a higher perforation risk if removed endoscopically. It decreases the chance of adhesions in case further operations are required.

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UG14_PO / 13:35 – 13:40

OUTCOMES IN LAPAROSCOPIC REPAIR OF CONGENITAL DUODENAL OBSTRUCTION IN THE LAST DECADE; A SYSTEMATIC REVIEW

Harmit Ghattaura[1,2], Andrew Ross[1,2], Bashar Aldeiri[1,2], Amulya Saxena[1,2]
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Abstract

Aim of the Study: A systematic review was conducted to investigate recent technical approaches and outcomes in the laparoscopic repair of congenital duodenal obstruction (LRCDO).

Methods: Cochrane, MEDLINE and EMBASE were searched using the terms 'duodenal atresia', 'congenital duodenal obstruction', 'laparoscopic', 'MIS', 'duodeno-duodenostomy', 'duodenoduodenostomy' and 'robot' between 2012–2022. Articles describing LRCDO and operative outcomes were selected using the PRISMA 2020 criteria. Non-English language articles were excluded. Data collected included demographics, surgical repair technique, duration of surgery, complications, and conversion to open surgery.

Main results: The initial search identified 844 articles. 21 articles met inclusion criteria (15 retrospective reviews, four case report/series and two databases). Four-hundred and eighty-one neonates (50% male, 50% female) were included for analysis. The operative techniques employed are listed in Table 1* (Double-diamond, side-side and stapled) with variations in ports, scopes, insufflation pressure, flow and traction sutures. The mean duration of surgery was 142 minutes (50-308). Complications were reported in 64 (13.3%) neonates with infection being the most reported (n=14), followed by serosal injury/leaks (n=8) and stricture (n=8). The rate of conversion to open surgery was 16.2%; the most common reasons cited were poor visualization/inadequate exposure, duodenal injury, and bleeding. Overall mortality was <1%.

Conclusions: Recent management of LRCDO employs one of three types of anastomotic techniques; however, variation in intra-operative parameters still exists. Mean operative time is 2.5 hours. Morbidities are reported in 12% of cases. Anastomotic complications (leaks and strictures) are uncommon <2%. The rate of conversion in LRCDO is around 16%.

UG15_PO / 13:40 – 13:45

A SIMPLE MACHINE LEARNING APPROACH FOR PREOPERATIVE DIAGNOSIS OF ESOPHAGEAL BURNS AFTER CAUSTIC SUBSTANCE INGESTION IN CHILDREN

Emrah Aydın[1], Narmina Khanmammadova[1], Birol Aslanyürek[2], Nafiye Urgancı[3], Merve Usta[3], Ayşe Parlak[4], Şeymanur Kaya[4], Arif Nuri Gürpınar[4], Tamer Sekmenli[5], Mehmet Sarıkaya[5], Fatma Özcan Sıkı[5], Ufuk Ateş[6], Murat Çakmak[6], Tülin Öztaş[7]
[1]Tekirdağ Namık Kemal University, Tekirdağ, Turkey. [2]Yıldız Teknik University, İstanbul, Turkey. [3]Şişli Etfal Training and Research Hospital, İstanbul, Turkey. [4]Uludağ University School of Medicine, Bursa, Turkey. [5]Selçuk University School of Medicine, Konya, Turkey. [6]Ankara University, Ankara, Turkey. [7]Diyarbakır Gazi Yaşargil Training and Research Hospital, Diyarbakır, Turkey

Abstract

Aim of the Study: The unresolved debate about the management of corrosive ingestion is a major problem both for the patients and healthcare systems. This study aims to demonstrate the presence and the severity of the esophageal burn after caustic substance ingestion can be predicted with complete blood count parameters.

Methods: A multicenter, national, retrospective cohort study was performed on all caustic substance cases between 2000 and 2018. The classification learner toolbox of MATLAB version R2021a was used for the classification problem. Machine learning algorithms were used to forecast caustic burn.

Main results: Among 1839 patients included 142 patients (7.7%) had burn. The type of the caustic and the PDW values were the most important predictors. In the acid group, the AUC value was 84% while it was 70% in the alkaline group. The external validation had 85.17% accuracy in the acidic group and 91.66% in the alkaline group.

Conclusions: Artificial intelligence systems have a high potential to be used in the prediction of caustic burns in the pediatric age group.

UG16_PO / 13:45 – 13:50

DETERMINANTS OF MOTOR FUNCTION IN CHILDREN BORN WITH ESOPHAGEAL ATRESIA

Anne-Fleur RL van Hal[1], Sophie de Munck[1], Tabitha PL Zanen - van den Adel[1,2], John Vlot[1], Joost van Rosmalen[3,4], Hanneke IJsselstijn[1], Leontien Toussaint – Duyster[1,2]
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Abstract

Aim of the study: Children born with esophageal atresia (EA) are at risk for impaired motor function (Harmsen, 2017), yet longitudinal data are lacking. We aimed to longitudinally assess motor function and its determinants between 5 and 12 years.

Methods: All patients with EA born between November 2001 and April 2010 who were routinely seen at ages 5, 8, and 12 as part of our structured prospective longitudinal follow-up program were included. Children were assessed with the Movement Assessment Battery for Children (version 1 or 2). Total z-scores were used in a linear mixed model for longitudinal analysis.

Main results: Fifty-four children were evaluated at all three ages. Motor function was significantly below the norm at each age. Total mean (95% CI) z- score at age 5: -0.63 (-0.87 - -0.39), age 8: -0.30 (-0.57 - -0.03), age 12: -0.53 (-0.83 - -0.24), only the scores between ages 5 and 8 differed significantly ($p<0.01$). Duration of anesthetic exposure (in minutes) in the first 24 months of life was negatively associated with total z-score (B -0.001, $p=0.046$, univariable analysis). Gestational age at birth, surgical technique (thoracotomy versus thoracoscopy) or length of primary hospital stay were not associated with motor function.

Conclusions: Children born with EA are at risk for motor impairment throughout childhood. In the search for risk factors focus should be on the duration of anesthetic procedures, combined with long-term follow up of these children into adolescence.

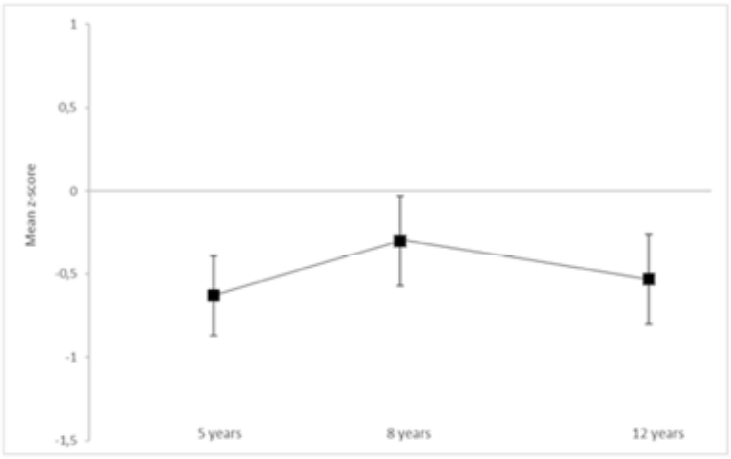

Figure 1. Longitudinal motor performance in children born with esophageal atresia

UG17_PO / 13:50 – 13:55

ANTIBODY DEFICIENCY IN PATIENTS WITH ESOPHAGEAL ATRESIA AND/OR TRACHEOESOPHAGEAL FISTULA

Fatma Ozcan Siki, Ilknur Kulsah Celik, Mehmet Sarikaya, Metin Gunduz, Tamer Sekmenli, Hasibe Artac, Ilhan Ciftci
selcuk university faculty of medicine, Konya, Turkey

Abstract

Aim of the study: Gastroesophageal reflux, tracheomalacia and dysphagia are included in the etiology of recurrent lung infections after esophageal atresia and/or tracheoesophageal fistula surgeries. We aimed to draw attention to the fact that immunodeficiency may also be an important risk factor.

Methods: The records of patients who were operated on with the diagnosis of esophageal atresia and/or tracheoesophageal fistula in our clinic between January 2010 and January 2022 were reviewed retrospectively. We examined the 306patients who were hospitalized frequently due to postoperative recurrent pneumonia and were treated in the pediatric allergy-immunology clinic.

Main results: 49 patients were operated for esophageal atresia and/or tracheoesophageal fistula. It was observed that 31 (63.2%) of these patients were boys and 18 (36,8%) were girls. It was observed that 20 of the patients (17 boys; 3 girls) (43.4%) were hospitalized due to frequent lung infections Hypogammaglobulinemia was found in 10 (8 boys; 2 girls) (50%) of these 20 patients who also needed intensive care.

Conclusions: Revealing immunodeficiency in patients with esophageal atresia and/or tracheoesophageal fistula repair is important for treating life-threatening infections and preventing frequent hospitalizations.

UG18_PO / 13:55 – 14:00

SAFETY AND EFFICACY OF THORACOSCOPY VERSUS THORACOTOMY REPAIR OF ESOPHAGEAL ATRESIA.

Sara Monje Fuente, Laura Pérez Egido, María Antonia García Casillas, Samuel Dan Israel, Isabel Bada Bosch, Javier Ordoñez, Agustín Del Cañizo, María Fanjul, David Peláez Mata, Julio Cerdá, Juan Carlos De Agustín
Hospital General Materno Infantil Gregorio Marañón, Madrid, Spain

Abstract

Aim of the study: The aim is to study the safety and results of patients treated for esophageal atresia (EA) comparing thoracoscopy versus thoracotomy.

Methods: A retrospective and analytical study was conducted including patients treated for EA between 2012 and 2022. Two groups were formed according to the surgical technique. Epidemiological, surgical, clinical and complication data were collected. Analytical studies were carried out using SPSS.

Main results: We collected data from 46 patients and excluded 5 patients who died due to polymalformative syndromes. Thoracotomy was performed in 53.7% and thoracoscopy in 46.3%. Groups were similar in terms of sex, age, type of atresia and weight. Eighty-five-point four percent were type 3 and 14.6% type 1. Twenty-nine-point three percent were "long gap". No differences were found in the incidence of early dehiscence (7 in the thoracoscopic group vs. 6 in the thoracotomy group), refistulization (2 vs. 1), admissions for respiratory infection (8 vs. 10), anastomotic stenosis (12 vs. 14), recurrent stenosis (9 vs. 11) or number of dilatations (mean 4.42 vs. 5.67) ($p>0.05$). The ratio of leakage/number of dilatations during the first year of age was higher in the thoracoscopic group (7/44 vs. 1/72) ($p<0.05$). No differences were found in the initiation of enteral nutrition (mean 22 vs. 38 days), need for gastrostomy (3 vs. 5) or number of impactions (mean 0.39 vs. 0.47) ($p>0.05$).

Conclusions: Thoracoscopic treatment of EA appears to be a safe option compared to the thoracotomy approach in centers with thoracoscopic experience.

UG19_PO / 14:00 – 14:05

THE RESULTS OF LONG-TERM FOLLOW-UP OF INFANTILE HYPERTROPHIC PYLORIC STENOSIS

Orkhan Farzaliyev[1], Umut Ece Arslan[2], Tutku Soyer[1], Ozlem Boybeyi[1]
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Abstract

Aim of the Study: The long-term results of patients with infantile hypertrophic pyloric stenosis (IHPS) are not clearly known. Therefore, a prospective study was conducted to evaluate the long-term nutritional habits and to investigate the presence of functional intestinal disorders in the cases underwent surgery for IHPS.

Methods: After ethical approval, patient records were accessed from hospital archive system. IHPS cases were recruited in the study group (SG). Healthy volunteers were included in the control group (CG). Each group was divided into subgroups as 4-10 years of age and 10 years old and over. The Eating Behavior Questionnaire (EBQ) and the ROMA III-Turkish version questionnaire were applied to cases by mail. Survey data were recorded, and groups were compared.

Results: There was not statistically significant difference between CG (n=52) and SG (n=52) in all age groups in terms of height and weight values, body mass index, height, and weight percentiles for age ($p>0.05$). There was no statistically significant difference between CG and SG for all parameters of EBQ ($p>0.05$). According to the ROME III (for both age groups) survey results; the epigastric pain was seen significantly higher in SG compared to CG ($p<0.05$). According to ROME III criteria, functional gastrointestinal disorder was not found in all cases with epigastric pain.

Conclusion: There was no significant difference between cases with IHPS and healthy controls regarding the anthropometric measures and eating behaviors in long-term follow-up. Although IHPS cases experience epigastric pain in long-term, none of them seems to develop gastrointestinal functional disorder.

UG20_PO / 14:05 – 14:10

SELECTIVE EARLY CLOSURE OF GASTRO-CUTANEOUS FISTULA AFTER GASTROSTOMY REMOVAL

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Waikato Hospital, Hamilton, New Zealand

Abstract

Aim of the Study: The Gastro-cutaneous fistula (GCF) after gastrostomy removal causes leakage, pain and skin excoriation while waiting for spontaneous closure within three months. We aim to identify patients who may benefit from early surgical closure (SC).

Methods: All patients undergoing gastrostomy were identified from 1996 to 2022. The patients who had its removal were studied for demographics, type of gastrostomy (percutaneous, laparoscopic or open), length of time since insertion, and time between removal and surgical closure. The chi-square test for independence was used for statistical analysis.

Main results: A total of 257 patients with gastrostomy were identified with male to female ratio of 1.5:1. (Ethnicity) are overrepresented (27.25%) compared to the general population (23.9%). Forty-seven were excluded due to poor records or relocation. The remaining 210 had 61 SC of GCF. Of the 149 who did not have surgical closure, 35 had spontaneous closure (SpC), 79 still have the gastrostomy and 35 are deceased with the tube in situ. Nissen fundoplication was associated with 19% of the surgical closure group and 6% of the spontaneous closure group. Percutaneous gastrostomies closed spontaneously more frequently (49%) than laparoscopic gastrostomies (27%). Laparoscopic gastrostomies required closure more frequently than PEG (51% vs 16%) p=0.00001. The mean duration of gastrostomy was 28.7 and 45.5 months in SC and SpC, respectively.

Conclusions: The duration of gastrostomy does not affect spontaneous closure. Laparoscopic, open and those associated with Nissen fundoplication should be offered SC of GCF early to reduce the morbidity of gastric acid leakage.

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UG21_PO / 14:10 – 14:15

EOSINOPHILIC OESOPHAGITIS (EoE) IS COMMON IN COELIAC DISEASE (CD) BUT IS NOT CORRELATED WITH tTG LEVEL.

Eliza Cowley[1], Paul Jenkins[1], David Croaker[1,2]
[1]Australian National University, Canberra, Australia. [2]The Canberra Hospital, Canberra, Australia

Abstract

Aim of the Study: The authors aimed to discover the rate of co-existent EoE in CD in our population and to test the idea that the degree of gastrointestinal inflammation in CD as measured by Marsh grade and the presence of co-existent EoE would correlate with tTG level.

Methods: Retrospective case review by reviewing and correlating serological, pathological and endoscopic reports from a single institution over 15 years. Statistical tests using SPSS version 28.0.1

Results: Between 2005 and 2020 CD serological screening was performed on 9,247 paediatric patients. 361 went on to have endoscopy and biopsy in our institution. 12 patients (3.2%) had associated EoE. There was no correlation between presence or absence of EoE and the level of tTG expressed as a percentage of the upper limit of normal. CD patients were ranked into four groups by severity. 41 of 361 had complete villous atrophy, but neither was there a correlation between tTG level and severity of villous atrophy by Spearman's rank order correlation. In addition, villous atrophy was not more severe in those with EoE by Mann-Whitney U test.

Conclusions: Serology alone is insufficient to predict severity and complications of CD. EoE is significantly more common than background in CD, and endoscopy remains useful in investigation.

UG22_PO / 14:15 – 14:20

DOES TIME AFFECT PARENTAL SATISFACTION AND HEALTH-RELATED PROBLEMS IN CHILDREN WITH GASTROSTOMY TUBE FEEDING?

Inga Dekeryte, Roberta Dievine, Arturas Kilda, Ausra Lukosiute-Urboniene, Dalius Malcius
Lithuanian University of Health Sciences Department of Pediatric Surgery, Kaunas, Lithuania

Abstract

Aim of the study: To evaluate the parental perspective of the benefit of gastrostomy tube feeding in children and assess if it changes with time.

Methods: It was a questionnaire-based study. Participants were caregivers of children with gastrostomy (GS). They were allocated to groups according to how long their child had GS – less than 1 year (early group) or more than 1 year (late group). Data about GS placement, infections, complications, child's, and parents' well-being were obtained. Ethical approval No. BEC-MF-75. Statistical analyses were performed using SPSS software. A Chi-square test was performed to evaluate the qualitative data.

Main results: The study included 100 parents. There were 32 respondents in the early and 68 in the late group. In the late group, parents reported a decrease in respiratory infection rate (42 (66.7%) cases), while in the early group, this was observed in only 6 patients (28.6%) (p=0.006). According to parents, accessibility to psychological health is better within the first year after GS placement (23, 74.2% vs 33, 51.6%), p=0.036. However, the child's (10 (31.3%) ◊ 29 (43.9%)) and parents' (17 (53.1%) ◊ vs 43(65.2%)) well-being improved significantly after GS placement without differences between early and late groups, p>0.05.

Conclusions: According to parents, the respiratory infection rate tends to decrease later after gastrostomy placement. Even though accessibility to psychological health is better within the first year after surgery, parents and their child's well-being improve immediately after GS placement and time doesn't affect it.

13:30 - 14:30

Poster Presentation Session 6

Urology I

(M2) Studio 1+2

Chair: Mujdem Nur Azili (TUR)

Salvatore Cascio (IRE)

UR01_PO / 13:30 – 13:35

THE EXPERIENCES AND CHALLENGES FACED BY PARENTS OF CHILDREN WITH DISORDERS OF SEXUAL DEVELOPMENT: A QUALITATIVE STUDY

Zeynep Hazal Baltacı[1], Sinem Öztürk[1], Furkan Oruç[1], Hassan Haidar[1], Şevket Girgin[2], Ahsen Karagözlü Akgül[3], Seyhan Hıdıroğlu[2], Dilşad Save[2]
[1]Marmara University Faculty of Medicine, IStanbul, Turkey. [2]Marmara University School of Medicine, Department of Public Health, Public Health, IStanbul, Turkey. [3]Marmara University, School of Medicine, Department of Pediatric Surgery, Division of Pediatric Urology, Paediatric Urology, IStanbul, Turkey

Abstract

Aim of the Study: Disorders of Sexual Development (DSD) occurs as a result of a malfunction in the gender development. The aim of this study is to evaluate the experiences and challenges faced by the families of patients with DSD.

Methods: Parents (n=12) of patients with DSD who were operated in our hospital were included. An in-depth, semi-structured, face-to-face interview method was performed. After taking permission first, all interviews were audiotaped. The qualitative data-analysis software Atlas.ti was used to perform coding and thematic content analysis. Relevant code-categories were created. Subsequently, after all coding of all transcripts was complete, themes and sub-themes were created. Ethical committee approval was obtained.

Main results: The first theme was the experiences of parents about disease. Parents had similar concerns about their child's development and future. The second theme was the individual experiences. All participants experienced negative emotions while learning the diagnosis and sharing with the child. The third was the social experiences. While some of them kept it within the family, some shared it with their close relatives and got support from them. The society's prejudice against the disease has been an important source of concern for the families, however, meeting with families with similar diagnosis was an important source of support. Teacher support was also reported in this study.

Conclusions: All parents experienced negative emotions at the time of diagnosis and emphasized the importance of society's prejudice. It is very important to eliminate social prejudices and improve the knowledge of the society on this issue.

UR02_PO / 13:35 – 13:40

USEFULNESS OF EXTRACORPOREAL SHOCK WAVE LITHOTRIPSY IN PEDIATRIC POPULATION. OUR EXPERIENCE

Julio César Moreno Alfonso[1,2], Borja Moraleda de Heredia[1], Aldo Meza Huamán[1], Marina Sazatornil Escuer[1], Inés Bezana Abadia[1], Maite Miqueleiz Legaz[1], Tamara Ortega Garrido[1], Lucía Bermúdez Cameo[1], Marta María García Ruiz[1], Zaloa Amelibia Álvaro[1], Francisco Lozano Uruñuela[1], Ada Molina Caballero[1], Alberto Pérez Martínez[1]
[1]Hospital Universitario de Navarra, Pamplona, Spain. [2]Universidad Pública de Navarra, Pamplona, Spain

Abstract

Aim of the Study: This study aims to analyze the characteristics of pediatric patients treated with extracorporeal shock wave lithotripsy (ESWL) in our center.

Methods: Retrospective study of pediatric ESWL procedures in a tertiary referral hospital. We studied the variables of sex, age, size, location, laterality, number, energy used, number of waves, treatment times, need for retreatment, resolution, and associated complications, between others.

Main results: A total of 5909 ESWLs were studied between 2008 and 2022. One percent were performed in the pediatric population (n=59): median age was 7 years, 50% were women. The median size was 1 cm (range 0.8-4) and 78% of the patients had 1 stone, while 8.5% had 4 or more. 61 % were renal. The mean duration of treatment was 45.8 ± 18.2 minutes. The mean number of waves was 2135 ± 1739, with a maximum power of 8.24 ± 3. The fluoroscopy time was 4.27 ± 3.2 minutes, and the radiation dose was 11 ± 10.5 Gy/cm2. 15 patients required retreatment with a mean of 1.67 ± 1 additional session. In the 38 patients that we have been able to follow, the resolution rate was 84%, with no differences between the age subgroups (p = 0.109), and with a rate of minor complications of 10%.

Conclusions: In our experience, pediatric ESWL is effective and safe in all age groups.

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UR04_PO / 13:45 – 13:50

SAFETY AND EFFICACY OF ANDERSON-HYNES DISMEMBERED PYELOPLASTY FOR URETEROPELVIC JUNCTION OBSTRUCTION IN INFANTS ≤12 MONTHS OF AGE: A COMPARATIVE STUDY.

Irene Paraboschi[1], Letizia Maria Ippolita Jannello[1], Marcello Carlucci[2], Venusia Fiorenza[2], Michele Gnech[1], Erika Adalgisa De Marco[1], Dario Guido Minoli[1], Girolamo Mattioli[2], Gianantonio Manzoni[1], Alfredo Berrettini[1]
[1]Department of Pediatric Urology, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milano, Italy. [2]Department of Pediatric Surgery, IRCCS Istituto Giannina Gaslini, Genova, Italy

Abstract

Aim of the study: To compare the outcomes of open (OP), laparoscopic (VLS), and robotic-assisted (RALP) Anderson-Hynes dismembered pyeloplasty in infants ≤ 12 months of age.

Methods: A two-institution retrospective study was performed comparing surgical and radiological outcomes of infants aged ≤ 12 months who underwent OP, VLS, or RALP between 2013 and 2022.

Main results: Among 121 patients, 91 (75%) underwent OP, 23 (19%) VLS, 7 (6%) RALP. As a baseline, OP patients were significantly younger (median age: 133 days) and smaller (median weight: 7 kg) than VLS (243 days; 8.3 kg) and RALP (308 days; 8.5 kg) (p-value:<0.0001; p-value:<0.01, respectively). Regarding surgical outcomes, RALP procedures were significantly longer (median: 155 minutes) than VLS (80 minutes) and OP (90 minutes) (p-value:<0.01). While OP procedures were burdened by lower postoperative complications (6/91; 7%; Clavien-Dindo I-II: n=3; III-IV: n=3) compared to VLS (8/23; 35%; Clavien-Dindo I-II: n=6; III-IV: n=2) and RALP (4/7; 57%; Clavien-Dindo I-II: n=3; III-IV: n=1) (p-value:<0.0001) and by shorter hospital stay (OP: 2 days; VLS: 6 days; RALP: 4 days; p-value:<0.0001), the need for re-do surgeries was similar (OS: 5/91; 5%; VLS=2/23; 9% RALP=1/7; 14%; p-value:0.6025). Regarding radiological outcomes, similar improvements in renal pelvis dilatation (OS:-15 mm; VLS:-17 mm; RALP: -17 mm; p-value:0.5524) and kidney function (OS: +1%; VLS:0%; RALP:+9%; p-value:0.2036) were recorded.

Conclusions: While OP traditionally represents the standard of care in infants ≤ 12 months of age, minimally invasive approaches can be considered attractive and effective alternatives in high-volume centers.

UR05_PO / 13:50 – 13:55

SUCCESSFUL OUTCOMES WITH PELVIC FLOOR EXERCISE AND CATAPLEXY DRUGS IN GIGGLE INCONTINENCE

Fulya Beceren, Ibrahim Berkan Usta, Fatma Bilgecan Simsek, Faruk Beci, Can Taneli
Manisa Celal Bayar University, Department of Pediatric Surgery, Division of Pediatric Urology, Manisa, Turkey

Abstract

Aim of the study: To evaluate the effectiveness of pelvic floor exercises in combination with cataplexy drugs in the treatment of giggle incontinence.

Methods: Between 2017-2022, 8 female patients presenting with complaints of urinary incontinence during laughing were included in the study. The patients did not show any abnormality in their physical and neurological examinations. Giggle incontinence was diagnosed when involuntary complete bladder emptying in response to laughter at least 2 times per day, but not associated nocturnal incontinence. In all patients lower urinary tract symptom score, bladder diary, voiding frequency chart and giggle incontinence number per day was assessed before and after the treatment.

Results: All patients had normal curve with uroflow and no increase in pelvic floor activity during voiding. Two girls were prescribed methylphenidate 10mg/day and 6 girls were prescribed imipramine 25mg/day. All patients were instructed to perform pelvic floor exercises using ball and pilates elastic bands. At the end of 3 months of combined therapy, all cases achieved complete success. After six months of treatment, no relapse was observed in any patients. The cataplexy medication appears to prevent spontaneous activation of pontine micturition center in response to laughter, eliminating the cascade of events that results in complete bladder emptying. The purpose of pelvic floor exercises is to recognize and strengthen these muscles.

Conclusion: Giggle incontinence etiology whether either mostly neurologically mediated or mostly bladder and pelvic floor dysfunction needs to be further elucidated. Pelvic floor exercises and cataplexy medications seem to be an effective combination in the treatment of giggle incontinence.

UR06_PO / 13:55 – 14:00

Effect of bladder sex on subureteric injection material: A rat model

Sevim Ecem Unlu Balli[1], Hatice Surer[2], Pelin Secken[3], Gokhan Berktug Bahadir[1], Gulcin Şimşek[4], İlhami Surer[5]
[1]Health Sciences University Gulhane Medical Faculty Pediatric Surgery, ANKARA, Turkey. [2]Ankara Training and Research Hospital, Medical Biochemistry Laboratory, ANKARA, Turkey. [3]Health Sciences University Gulhane Medical Faculty Pathology, ANKARA, Turkey. [4]Health Sciences University Gulhane Medical Faculty Pathology Department, ANKARA, Turkey. [5]Health Sciences University Gulhane Medical Faculty Pediatric Surgery Department, ANKARA, Turkey

Abstract

Aim of the Study: In cases when first attempt failed, that treated with endoscopic subureteric injection method at second look cases, mostly no residue belonging to the previous injection material was found. While clinical observation rate rereflux was higher in girls than boys suggests that bladder gender may affect the stability of the injection material. This study aims to demonstrate the possibility of such an effect.

Methods: 20male, 20female Wistar Albino rats were divided into 4equal groups. The experimental group consisted of 10 male,10 female rats that1dz dextranomerhyaluronic acid was injected submucosally. Also, 1dz isotonic NaCI solution was injected to10male,10female rats as a control group. All subjects were sacrificed at 60 post injection days and the intact bladder tissue next to the injection sites was excised, the tissue hyaluronidase activity was measured biochemically with the ELISA method. The marked injection sites were evaluated histopathologically and immunohistochemically by applying CD31,CD34RabbitMonoclonalAntibody.

Main Results: Biochemically, the tissue hyaluronidase activities in female groups were statistically significant higher than male groups. There were no-significant differences histopathologically between the genders and the experimental vs control groups regarding formed fibrosis. In the study conducted with the CD31antibody, all females, regardless of the study control group, were angiogenesis found at a statistically significant higher levels when compared with the males. On examination withCD34antibody, there was no difference between the sexes, but the difference in both the study vs control groups was significant.

Conclusion: Biochemically, the higher activity of hyaluronidase in the female rat bladder results due to a faster breakdown of hyaluronic acid compound in the injection material. This two-way reaction to the injection material in the female population is thought to contribute to unsuccessful injection attempts.

UR07_PO / 14:00 – 14:05

SURGICAL MANAGEMENT OF UNDESCENDED TESTICLES BETWEEN 6 AND 12 MONTHS: A LONG MESSAGE TO DELIVER

Souha Laarif, Cyrine Saadi, Aida Daib, Rabiaa Ben Abdallah, Asma Jabloun, Fatma Trabelsi, Youssef Hellal, Nejib Kaabar
Pediatric Surgery Department of Habib Thameur Hospital, Tunis, Tunisia

Abstract

Aim of the Study: The neglect of undescended testis exposes to a high risk of infertility and testicular cancer in adulthood. In our practice, we have observed consultations beyond the recommended ages. This lack of knowledge can have significant consequences. To determine the knowledge of general practitioners and pediatricians about the risks of this pathology and the management modalities.

Methods: An epidemiological study was carried out based on a questionnaire.

Main results: 130 physicians participated in our questionnaire. The results showed that practitioners referred patients between the ages of 1 and 2 years in 37.3% of cases and as soon as the diagnosis was made in 23% of cases. Only 56.3% of practitioners routinely examined the external genitalia of patients during a routine consultation, and a significant number of ultrasounds were prescribed by practitioners (58.3%). Cryptorchidism is an anomaly of testicular migration that should not be confused with ectopic testis, oscillating testis, or anorchidism. About 72% of practitioners believe to know the difference between these entities, and more than 80% consider that management differs based on knowing these definitions. Approximately 90% of the physicians referred their patients with suspected migration anomalies to pediatric surgeons. A further 37.8% believed that spontaneous remission could occur. The risks related to this pathology were known.

Conclusions: These results show that practitioners need to be updated on the timing of surgical management of undescended testicles, the lack of interest of ultrasound in ambulatory medicine, and the need for testicular surveillance until puberty.

UR08_PO / 14:00 – 14:10

CONTINENT CATHETERIZABLE CONDUITS: THE 20-YEAR EXPERIENCE OF A TERTIARY CENTRE

Sara Fernandes, Leonor Carmo, Inês Teixeira, Carolina Soares-Aquino, Joana M Monteiro, Carlos Mariz
Department of Pediatric Surgery, Centro Hospitalar Universitário São João, Porto, Portugal

Abstract

Aim of the Study: Adequate bladder drainage in children with severe bladder dysfunction is crucial to attain social continence and preserve renal function. Continent catheterizable conduits (CCC) are an alternative solution for these patients. This study aims to review the outcomes of CCC at our centre and to assess its long-term durability.

Methods: Retrospective review of the patients submitted to any kind of CCC at our centre between 2002 and 2022, concerning the indications, the type of CCC, complications, and their management and conduit durability.

Main Results: Twenty patients were included with a median age at CCC creation of 14,2 years (12-15,5). Three-quarters of the patients had an underlying neurogenic bladder, with spinal dysraphism as the most common diagnosis. The appendix was used in most cases (n=14, 70%), followed by ileum (n=4, 20%) and tabularized detrusor flap (n=2, 10%). Complications were encountered in 40% and occurred at a median time of 5 months (1,5-48). The most common was conduit stenosis (50%), followed by false passage (20%), superficial cutaneous complications (20%), and obstruction of the urinary catheter (10%). Surgical revision was needed in 5 (62,5%) of these patients and was mostly endoscopic/supra-fascial procedures (75%). At a median time of follow-up of 2,6 years (2,1-5,7), all patients continued to use the CCC and no leaks were observed.

Conclusions: CCC are an effective and durable option for urethral catheterizations. However, patients and caregivers should be aware that there is a significant risk of complications and that to maintain a functional conduit, surgical revisions may be needed.

UR09_PO / 14:10 – 14:15

TESTICULAR TORSION: HOW TO MAKE IT ON TIME?

Alba María Hernández Pérez, Mariela Dore, Irene Martínez Castaño, Carlos De la Sen Maldonado, Valentina Diaz Diaz, Maria Gabriela Toro Rodríguez, Patricia Deltell Colomer, Alejandro Encinas Goenechea, Jerónimo Gonzálvez Piñera
Hospital General Dr. Balmis, Alicante, Spain

Abstract

Aim of the Study: Early diagnosis and treatment in testicular torsion (TT) is essential to prevent infertility and testicular loss. Our aim is to determine which time factors influence testicular viability in patients with TT.

Methods: A retrospective study of patients <15 years diagnosed with TT from 2012 to 2022 was performed. Perinatal torsions were excluded. Demographic variables and time factors: clinical (symptom-onset to first medical assessment), healthcare (first medical assessment to surgery) and total time (clinical healthcare) were analyzed. Testicular viability was defined as the outcome variable based on whether an orchidectomy was performed.

Main results: Fifty-two patients aged 12 years (0.3-13.9) and a clinical time of 5 hours (0.5-96) were included. Clinical time accounted for 58% (7.3-92.9) of total time. Healthcare time was 2.9 hours (1.08-8). Orchiectomies were performed in 25% in non-viable testis (NVT:13) compared to 75% orchidopexies in viable testis (VT:39). Significant differences were found in total time as well as clinical time between VT and NVT (6.3hours (2.4-77.5) vs 50.2hours (3.6-100.4); $p<0.05$) and (5.7hours (0.5-72) vs 48hours (2-96), $p<0.05$), respectively. However, no differences were found in healthcare time: VT: 2.8hours (1.08-7.58) vs NVT: 3.5hours (1.21-8), $p>0.05$).

Conclusions: A delay in ER consultation has more influence than door-to-treatment time in patients with TT. Although healthcare protocols that minimize setbacks are essential, patient-family education to raise awareness is also warranted.

UR10_PO / 14:15 – 14:20

FEMINIZING GENITOPLASTY IN CONGENITAL ADRENAL HYPERPLASIA: WHAT IS THE PROPER AGE?

Borko Stojanovic[1,2], Marta Bizic[1,2], Marko Bencic[1,2], Miroslav Djordjevic[1,2]
[1]University Children's Hospital, Belgrade, Serbia. [2]School of Medicine, University of Belgrade., Belgrade, Serbia

Abstract

Aim of the Study: The aim of feminizing genitoplasty in congenital adrenal hyperplasia (CAH) is good cosmetic and functional result. However, proper age for surgery is still controversial. We evaluated our experience with long-term outcomes.

Methods: From January 2010 to June 2022, 19 patients with CAH, aged from 1 to 23 years, underwent feminizing genitoplasty, which included clitoroplasty and urogenital sinus repair. Reduction clitoroplasty was performed at an early age (12-24 months) or later (22-23 years) in 17 and 2 patients, respectively. It included clitoral disassembly with complete removal of cavernosal bodies. Urogenital sinus repair was done at prepubertal (10-12 years, Group I) or an early age (1-5 years, Group II) in 11 and 8 cases, respectively. Urethra was divided from anterior vaginal wall and lengthened to reach the anatomical position of the meatus. Perineal and labial skin flaps were used to create wide vaginal introitus.

Main results: Follow-up ranged from 3 to 296 months. One-stage clitoroplasty at an early age has excellent cosmetic outcome with preserved sensation. An average number of surgical procedures for urogenital sinus repair was 1.2 in Group I and 2.5 in Group II. All patients who engaged in sexual intercourse reported satisfaction with good psychosexual outcome.

Conclusions: Feminizing genitoplasty in CAH has good outcomes. The aim of urogenital sinus repair is to achieve anatomical relationships with normal voiding, and to enable menstrual bleeding and sexual function in the future. According to our experience, it should be done as a one-stage surgery in prepubertal age.

UR11_PO / 14:20 – 14:25

COVID19 IMPLICATION: THE DELAYED TREATMENT OF UNDESCENDED TESTIS, EXPERIENCE OF SINGLE CENTRE

Silvia Perin[1,2], Chiara Costantini[1,2], Giada Morgani[1,2], Riccardo Guanà[1], Fabrizio Gennari[1], Federico Scottoni[1]
[1]UOC Chirurgia Pediatrica, PO Ospedale Infantile Regina Margherita, Città della Salute e della Scienza, Torino, Italy. [2]UOC Chirurgia Pediatrica, Woman and Child Health Department, University of Padua, Padova, Italy

Abstract

Aim of the Study: Surgical timing for cryptorchidism has been stated to be between 6-18 months of age. Worldwide, Covid-19 had a major impact on public health, but recognition of delays in routinary practice has not been fully determined yet. Delay in cryptorchidism treatment exposes to a higher risk of subfertility and potential degeneration.

Methods: We analyzed the median age at surgery before and during Covid-19 period.

Main results: Orchidopexy, for undescended or partially retained testis, performed under 3 years of age between 2017-2022 were considered. Patients were divided into two groups: pre-covid group (Group I, 2017-2019) and pandemic-period treated group (Group II, 2020-2022). Data were elaborated with a univariate statistical analysis. In Group I 229 patients were identified, 207 in Group II. In Group I 47.16% patients (107) were treated within 18 months of age and 52.84% (121) between 18-36 months of age. In contrast, in Group II only 37.2% of patients (77) were treated within 18 months of age resulting in a statistically significant reduction of standard of care (p-val= 0.04, Fisher's exact test). The median age at surgery was 563 days in Group I and 622 days in Group II, with a statistically significant median delay of 59 days (p-val= 0.004, Mann-Whitney test). Moreover, among children undergoing surgery within 18 months of life a statistically significant median delay of 41 days was evidenced (p-val< 0.0001, Mann-Whitney test).

Conclusions: Covid-19 increased age at surgery for patients with undescended testis. Further studies are needed to better understand the burden of this delay in treatment.

UR12_PO / 14:25 – 14:30

DO POSTERIOR URETHRAL VALVES INFLUENCE GROWTH?

Filippo Dagnino, Somita Sarkar, Irene Paraboschi, Pankaj Mishra, Joanna Clothier, Massimo Garriboli
Evelina London Children's Hospital, London, United Kingdom

Abstract

Aim of the Study: Posterior urethral valves (PUV) are a congenital condition affecting 1:5000 to 1:8000 boys. They can be associated with renal impairment and boys are often required multiple hospital appointment and medical/surgical intervention. We aimed to evaluate if a history of PUV leads to abnormal growth rates compared to the normal population.

Methods: We retrospectively collected information, including demographics, comorbidities, height, weight, and BMI at age 5, 10 and 15 years of all boys born with PUV between 1995 and 2021 that are looked after at our institution.

Main results: 152 boys were included of which 85% had no other medical problems. 5 boys were born premature and 17 had other comorbidities (including chromosomal). Average height, weight, and BMI at 5 years of age was 113.3cm (range 97.9 to 137.7), 21.20kg (range 13.24 to 41.40) and 16.4 (range 12.5 to 24.7). Average Z-score at age 5 was -0.1 for height and 0.1 for weight. Average height, weight, and BMI at 10 years of age was 137.6cm (range 109.8 to 159.6), 36.7kg (range 17.75 to 69.9), and 19.1 (range 12.7 to 34.3), respectively. Average Z-score was 0.0 for height and 0.5 for weight. Average height, weight, and BMI at 15 years of age was 163.4cm (range 138.5 to 186), 59.9kg (range 30.18 to 123), and 22.1 (range 15.3 to 39.6) respectively. The average Z-score was 0.0 for height and 0.5 for weight.

Conclusions: Our results show that boys born with PUV grow at similar rates of the normal population.

13:30 - 14:30

Poster Presentation Session 7

Urology II

(M2) Studio 1+2

Chair: Shilpa Sharma (IND)

Diane De Caluwe (UK)

UR13_PO / 13:30 – 13:35

URETERAL VALVE AS A DIAGNOSTICALLY DIFFICULT CONGENITAL DEFECT OF THE URINARY TRACT SYSTEM.

Joanna Cybulska, Joanna Samotyjek, Beata Jurkiewicz
Clinical Department CMKP of Pediatric Surgery, Dziekanów Leśny, Poland

Abstract

Aim of the study: The aim of our work is to present the diagnosis and treatment in patients with congenital ureteral valve.

Case description: Congenital ureteral valve is a rarely recognized cause of ureteral stenosis, which may lead to deterioration of renal function. In more than 50% of patients it coexists with other defects of the urinary tract system. In our Clinic in 2015-2022 two patients were diagnosed with ureteral valve. In one of them, during URSL, a valve was visualized, which prevented further endoscopic examination of the ureter. In the second patient, during the diagnosis of abdominal pain, hydronephrosis with ureter dilatation up to 2/3 of its length was described in the ultrasound examination. Additional examinations such as urography, computed tomography and pyelography revealed perivesical stenosis of the ureter. Both patients underwent ureteral reimplantation using the Politano-Leadbetter technique. One of them due to megaureter longitudinally resecting the dilated ureter, Hendren's method was performed. The diagnosis of ureteral valve was confirmed intraoperatively and in histopathological examination which showed the presence of smooth muscles in the transverse folds of the ureter mucosa. In the follow-up scintigraphy after the procedure, the improvement of the kidney function was obtained, no enlargement of the renal calyceal system was observed.

Conclusions: The ureter valve should be considered during the diagnosis of hydronephrosis and megaureter. Endoscopy or cystoscopy with pyelography should be the examination of choice. Surgical treatment is fully effective and prevents further kidney damage, nevertheless patients must be under constant urological care.

UR14_PO / 13:35 – 13:40

COMPARISION OF FISTULA RATES AFTER URETHROCUTANEOUS FISTULA VERSUS PRIMARY HYPOSPADIAS REPAIR FOR DISTAL HYPOSPADIAS

Pari Khalilova, Ergun Ergun, Gulnur Gollu, Ufuk Ates, Meltem Bingol-Kologlu, Aydin Yagmurlu, Murat Cakmak
Ankara University, Faculty of Medicine, Department of Pediatric Surgery, Ankara, Turkey

Abstract

Aim of the Study: The rate of fistula development after hypospadias surgery varies between 5-50% depending on the type and level of hypospadias, whether there is a curvature, whether the child has had previous surgery, whether there is sufficient tissue and the technique used. In this study, it is aimed to present fistula formation after distal hypospadias repair and recurrence rate after fistula repair during our 15-year clinical experience.

Methods: Postoperative fistula development rates of patients who underwent primary distal hypospadias repair between the years 2007-2022 were analyzed. The rates of recurrence of fistula after fistula repair were examined.

Main results: A total of 417 patients were included in the study. Fistula developed in 54 patients (13%) after the first surgery. The mean age of the patients at the time of the first operation was 48 months. It was observed that there was fistula approximately 10 months after the operation. Re-fistula formation was observed in 14 (25%) of 54 patients who underwent fistula repair. The most common fistula location after the first operation was the coronal level (53%), with 28 patients.

Conclusions: In patients who develop fistula after distal hypospadias repair, the risk of developing a fistula after the repair is higher than the risk of developing a fistula after the primary repair. These results may be related to the techniques and methods used in primary repair.

UR15_PO / 13:40 – 13:45

UROLOGICAL ANOMALIES IN PATIENTS WITH ANORECTAL MALFORMATIONS: A RETROSPECTIVE COHORT STUDY

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Amsterdam UMC, Amsterdam, Netherlands

Abstract

Aim of the Study: In children with anorectal malformations (ARM), additional anatomical and functional urological anomalies might be present with potential consequences for treatment. Therefore, the aim of this study was to assess both anatomical and functional urological anomalies (UA) identified in our cohort of ARM patients.

Methods: A retrospective mono-center study was performed. All ARM patients born between January 2000 and December 2022 were eligible for inclusion. Urological anomalies were classified as anatomical (e.g., mono-kidney, urethral valves) and functional anomalies (e.g., symptoms of a urinary tract infection). Data were presented with descriptive statistics.

Main results: In total, 268 patients were included in this study (128 female, 140 male), with a median age of 6.0 years (IQR 2.25-12.0) at follow-up. In 135 patients (50.4%), urological anomalies were identified (i.e., solely anatomical (n=42, 31.1%), solely functional (n=32, 23.7%), and both (n=63, 46.7%)), most often occurring in patients with recto-perineal and recto-urethral fistula (n=34, 25.5%, respectively). In multivariable analysis, sex (OR 2.63, 95% CI 1.34-4.16, p=0.003) and presence of syndromes or VACTERL-association (OR 3.29, 95% CI 1.78-6.10, p<0.001) were independently associated with UA. An overview of treatment consequences can be found in Table 1.

Conclusions: UA were present in 50% of ARM patients, both in simple as well as more complex ARM types. Therefore, screening for UA is important for all ARM patients, regardless of ARM type. The pediatric urologist plays a crucial role in the multidisciplinary team of ARM patients. Early extensive screening might be beneficial for early identification and treatment of UA.

Table 1. Treatment consequences in ARM patients with urogenital anomalies (n=135)

	n (%)
Urinary tract infection	67 (49.6)
In first year of life	32 (23.7)
Requiring antibiotic treatment	58 (86.6)
Clean intermittent catheterisation	35 (25.9)
Start before ARM correction surgery	12 (34.3)
Start after ARM correction surgery	23 (65.7)
Surgical intervention by pediatric urologist	50 (37.0)
Follow-up by pediatric urologist	99 (73.3)
Once	20 (20.2)
Yearly	79 (79.8)

ARM= anorectal malformation. n= number.

UR16_PO / 13:45 – 13:50

LOW GRADE INJURY IN ORCHIECTOMY SPECIMENS FOLLOWING TESTICULAR TORSION: A MULTICENTER STUDY

Emine Burcu Cigsar Kuzu[1], Sibel Tiryaki[1], Neslihan Güney[2], Kamer Polatdemir[3], Yasemin Çakır[4], Ahsen Karagözlü Akgül[5], Muhammed Hasan Toper[6], Güngör Karagüzel[7], Murat Uçar[8], Cumhur İbrahim Başsorgun[9], Şeyhmus Kerem ÖZEL[10], Şeyma Özkanlı[11], Gül Şalcı[12], Sevdegül Aydın Mungan[13], Mehmet Uğur Yılmaz[14], Berna Aytaç Vuruşkan[15], İsmail Yağmur[16], Emine Zeynep Tarini[17], Meltem Kaba[18], Canan Tanık[19], Furkan Adem Canbaz[20], Özge Hürdoğan[21], İdil Rana User[22], Diclehan Orhan[23], Ahmet Atici[24], Didar Gursoy[25], Emin Aydın Yağmurlu[26], Duygu Enneli[27], Şeref Selçuk Kılıç[28], Şeyda Erdoğan[29]
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Abstract

Aim of the study: Previous studies suggest that preservation of the torted testis may result in contralateral testicular damage. Therefore, orchiectomy is frequently employed when perioperative findings give the impression of non-viability. The aim of this study is to investigate grade of injury in orchiectomies, and its association with clinical findings.

Methods: This multicenter retrospective study (IRB#:2022/11-34) involved analysis of patient files and reassessment of pathological specimens using Mikuz classification in which grade 1 refers to reversible injury and grade 3 complete necrosis.

Main Results: This study included 237 patients among 289 from 14 centers (Figure1). Twenty-three of 237 patients had grade 1 injury. These 23 patients were compared to 214 with higher grades. The only significant difference between groups was duration of symptoms (p<0.001); however, range was wide in both groups. Median duration was 24(4-96) hours for grade one, and 72(2-720) hours for higher grades. There was no statistically significant difference in terms of age (median 14 for both, p=0.118), pain (22/23 vs, 194/208, p=0.660), swelling (16/22 vs 173/202, p=0.125), absence of flow in doppler US (18/22 vs 168/202, p=0.773), degree of torsion (median 720° for both, p=0.345), or any other variable.

Conclusion: Our study revealed histopahologically low-grade injury even in patients with worse perioperative findings, late admission or high degree twisting. Testicular fixation seems to be the appropriate choice of treatment in testicular torsion as none of the clinical or perioperative findings were attributable to high grade injury.

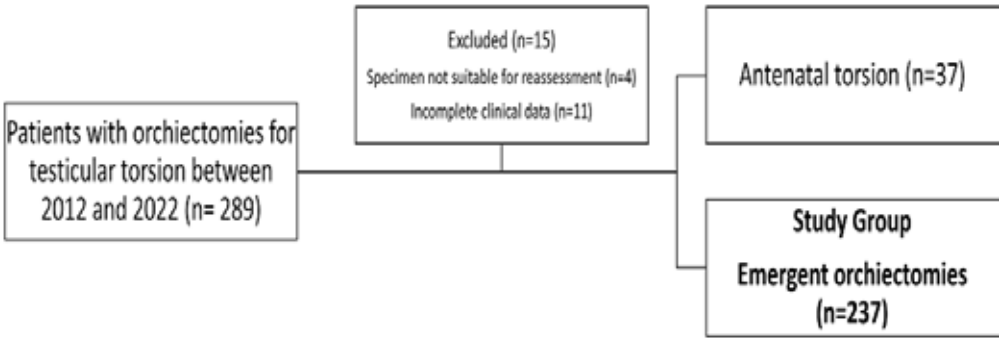

Figure 1. Flowchart of the study group

UR17_PO / 13:50 – 13:55

TESTICULAR-EPIDIDYMAL DYSJUNCTION: A TESTICULAR NUBBIN IN THE GROIN – BEWARE OF TESTIS IN ABDOMEN

Saalim Nazki, Ashok Rajimwale, Nitin Patwardhan, Haitham Dagash, Bala Eradi, Khalid Elmalik, Owen Anthony, Madhavi Kakade, Lucy Henderson, Melania Matcovici
Leicester Royal Infirmary, Leicester, United Kingdom

Abstract

Aim of the Study: Putative causal role of testis epididymal fusion anomalies remain controversial. The reported incidence of complete testicular epididymal-dysjunction (TED) is 0.6%.

Methods: This is a retrospective review of 17 cases of undescended testis with complete TED identified between 2016 and 2020. Age ranges from 2 to 14 years. The anomaly on left side was in 12, right side on 4 and one child had bilateral abdominal testis. Three children had prior nubbin excision that was not confirmed by histopathology while five children were found to have total TED while performing inguinal orchidopexy. Rest of the children (N=8) with impalpable testes were found to be intra-abdominal, while epididymis and vas were identified disappearing in the groin. One child with bilateral abdominal testes was found to have absent epididymis on both sides.

Main results: 2 of 17 children had successful inguinal orchidopexies, 7 children have completed 2 stage Fowler-Stephen orchidopexy. One adolescent who presented with hernia later following groin exploration underwent orchidectomy, while the rest are waiting for second stage orchidopexies. At 1 year follow up nine children who have had orchidopexies (single or 2 stage procedure), have been found their testis in the scrotum.

Conclusions: Our experience has shown that groin exploration and removal of assumed testicular 'nubbin' is not adequate as one can miss abdominal testis and possibly disastrous consequences of unidentified abdominal testes later in the life. We recommend absent gonadal structure on histology for 'nubbin' on groin exploration should undergo laparoscopic examination to rule out testes epididymal dysjunction anomaly.

UR18_PO / 13:55 – 14:00

THE URODYNAMIC PRESENTATION OF INFANTS WITH POSTERIOR URETHRAL VALVES POST-VALVE RESECTION

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Abstract

Aim of the Study: To review the video urodynamics (VUD) presentations of infants with posterior urethral valves (PUV) and characterize bladder storage and voiding dysfunction.

Methods: We retrospectively reviewed VUD of 34 infants with PUV post-valve resection. Parameters collected: Filling phase: detrusor overactivity (DO), peak DO detrusor pressure (Pdet), cystometric capacity, end-fill Pdet, compliance (C = capacity/end-fill Pdet) and vesico-ureteric reflux (VUR). Voiding phase: maximum voiding Pdet (PdetMax), post void residual (PVR), evidence of bladder neck obstruction (BNO) and dysfunctional voiding (DV).

Main results: Mean (+ sd) period between birth and PUV resection and VUD was 16 (+ 9) days and 248 (+ 172) days, respectively. DO was demonstrate in 28/34 (82%) infants. Mean Peak Pdet of the DO was 63 (+ 14) cmH2O. Mean bladder capacity were 81 (range 15-225) ml. Mean end-fill Pdet was 7 (+ 5) cmH2O with a mean C of 22 (+ 27) ml/cmH2O. Voiding data were acquired in 32 boys. BNO was demonstrated in 14/32 (44%) boys. In these obstructed boys, the mean PdetMax was 149 (+ 67) cmH20. DV was observed in 25/32 (78%). The mean PVR was 23 (+27) ml. VUR was demonstrated in 15/32 (46%) with the VUR being Grade IV/V during void in 11/15.

Conclusion: DO and DV were common urodynamic findings. The high pressure of DO is likely secondary to outlet obstruction during key stage of development. VUR and BNO were observed in almost half of the cohort. The prevalence and severity of bladder dysfunction in infants with PUV warrants close monitoring and proactively management.

UR19_PO / 14:00 – 14:05

VALIDATION OF A PREDICTIVE MODEL FOR THE SUCCESS OF ENDOSCOPIC CORRECTION OF VESICOURETERAL REFLUX

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National Medical Research Center for Children's Health, Moscow, Russian Federation

Abstract

Aim of the study: Creation of a predictive model for calculating the effectiveness of endoscopic correction of vesicoureteral reflux (VUR) by binary logistic regression

Methods: The study included 215 children (348 renal refluxing units) with a median age of 15 months were treated by endoscopic correction. As possible success predictors were evaluated VUR grade, ureteral diameter ratio (UDR), time of reflux at cystourethrography, the dilatation of the renal pelvis and ureter according to ultrasound. Each injection effectiveness was evaluated using a predictive model, based on a logistic regression analysis.

Main results: ROC analysis of treatment success predictors showed reflux grade, UDR and bladder volume at onset of reflux to be statistically significant for endoscopic correction outcome (AUC 0,902; 0,980 and 0,921, $p < 0.001$ respectively). For increasing of predictive power, we developed a prognostic model based on composition of three statistically significant predictors. It had 89,7% sensitivity and 78,8% specificity. AUC was 0,983 (CI: 0,966 – 1,000), $p < 0,001$. For validation of the statistical model produced from the derivation cohort, identical variables were then applied to our prospectively recruited validation cohort. Model discrimination and calibration were assessed. The model continued to show satisfactory calibration (Hosmer–Lemeshow p=0.15). Accuracy 74,0%; Precision 93,4%; Recall 70.3%; F-measure - 0,8. DeLong test of AUC difference was p=0,0845. The resulting data indicate the reasonable internal and external validity of the model.

Conclusions: A computational model using multiple variables including bladder volume at onset of VUR and UDR provides individualized prediction of success endoscopic correction

UR20_PO / 14:05 – 14:10

OUTCOME OF URETEROCELE ASSOCIATED TO DUPLEX URINARY TRACT: REVIEW OF 26 CASES

Fares Chaabouni, Asma Jabloun, Aida Daib, Souha Laarif, Cyrine Saadi, Rabiaa Ben Abdallah, Fatma Trabelsi, Youssef Hellal, Youssef Gharbi, Nejib Kaabar
Paediatric Surgery Department Of Habib Thameur Hospital, Tunis, Tunisia

Abstract

Aim of the Study: Ureterocele is a cystic dilation of the distal ureter and may be associated to a duplex urinary system. They are mostly associated with the upper pole kidney. The mainly objective of treatment is preserving the renal function.

Methods: We had reported a retrospective study, in our paediatric surgery department over a period of 27 years, between January 1994 and December 2020.

Main results: 26 patients were reported with ureterocele associated to duplex kidney. They were 16 girls and 10 boys. Ureterocele was in the right side in 15 cases, left side in 10 cases and bilateral in two patients. Eighteen patients were symptomatic with urinary tract infections. The diagnosis of ureterocele was reported by renal ultrasound in 25 cases. It was confirmed by voiding cystourethrogram in 16 cases and was associated to vesicoureteral reflux in 12 cases. The diagnosis was confirmed also by per-operative findings in 8 cases and per-endoscopic findings in 2 cases. Twenty-four children were operated: 16 had endoscopic section, 5 had ureterocele section with ureterovesical reimplantation and 3 had heminephrectomy for non-functioning kidney. Two patients had a small ureterocele with good renal function had non-operative management. The post-operative period was uneventful in all patients.

Conclusions: Ureteral reimplantation and bladder neck reconstruction appears to be unnecessary in a significant portion. There Is no consensus for the treatment of ureterocele associated to duplex kidney. Recent advances revolve around differing surgical approaches. They include non-operative management, various forms of endoscopic puncture, ureterostomy, and most recently upper pole ureteral ligation.

UR21_PO / 14:10 – 14:15

MANAGEMENT OF VESICOURETERAL REFLUX: WHAT HAVE WE LEARNED OVER THE LAST 10 YEARS?

Souha Laarif, Asma Jabloun, Hajer Drissi, Aida Daib, Cyrine Saadi, Rabiaa Ben Abdallah, Fatma Trabelsi, youssef Hellal, Nejib Kaabar
Pediatric surgery department of Habib Thameur Hospital, Tunis, Tunisia

Abstract

Aim of the Study: Vesico-ureteral reflux (VUR) is the most common malformative uropathy in children. Open ureterovesical reimplantation (OUVR) is the treatment of choice. The aims of this work were: to Evaluate indications, and results of OUVR and discussion efficiency of surgical treatment versus other treatment.

Methods: This was a retrospective, descriptive and comparative study about 135 children operated for VUR over a period of 10 years.

Main results: Mean age was 55 months and sex ratio were 1.01. The VUR was bilateral in 66.7% of cases. Hight grades (IV and V) accounted for 52.4%. Surgical indications were related with high grade VUR, low grade VUR associated with renal scars and/ or anatomic abnormalities, low grade VUR refractory to antibiotic prophylaxis as well as residual VUR after endoscopic treatment. OUVR was performed in 235 renal unities; in four cases ureteronephrectomy was necessary. The most common surgical technique used in our study was the Cohen procedure (96.1%). Ureteral tapering was performed in only 1.8% of the cases. Post-operative drainage made by ureteral stents, cystostomy catheter and redon drain was done in almost all cases and left for 6 days in average. The mean hospital stay was 11.11 days. The success rate was 96.3%. Two statistically significant failure factors were observed: Lower urinary tract dysfunctions (p=0.002) and grade V (p=0.011).

Conclusions: Results of surgical treatment for vesico-ureteral reflux are excellent ranging from 90% to 99.4%. Mini-invasive techniques are gaining popularity as they offer more comfort for the child. Nevertheless open surgery remains the gold standard.

UR22_PO / 14:15 – 14:20

URETEROPELVIC JUNCTION OBSTRUCTION: WHAT ABOUT THE POSTOPERATIVE FATE OF THE KIDNEY WITH IMPAIRED FUNCTION?

Souha Laarif, Cyrine Saadi, Fatma Bchini, Aida Daib, Rabiaa Ben Abdallah, Asma Jabloun, Fatma Trabelsi, Youssef Hellal, Nejib Kaabar
Pediatric surgery department of Habib Thameur Hospital, Tunis, Tunisia

Abstract

Aim of the Study: During UPJO, the surgical indication is based on confirmation of the obstructive nature or renal deterioration. For renal units with impaired function, the therapeutic protocol remains poorly understood and the management of these kidneys remains controversial.

Methods: Retrospective and descriptive study involving 27 children operated on for UPJO with differential renal function less than 25% between January 2008 and December 2019.

Main results: The average age of our patients was 2 years. The most frequent circumstance of discovery was antenatal diagnosis (66.7%). On ultrasound, the anteroposterior diameter of the pelvic was on average 40.6mm. The DRF was on average 17.5%. We performed a first nephrostomy on five patients. The indications for nephrostomy were non-functioning kidney in three cases and bilateral involvement in two cases. Assessment after drainage was clinical, biological, and isotopic. Of these five patients, four presented with residual diuresis with improvement of the DRF. They had pyeloplasty. Only one patient had a nephrectomy in front of an anuric kidney with the appearance of high blood pressure. The mean follow-up was 32 months. The evolution of the anteroposterior diameter was favorable at 81%. An improvement in the quality of the parenchyma was noted in 58%. We estimated the scintigraphic success, according to the emptying curve at 65.4%. Regarding DRF, there was improvement in DRF of 55.6%.

Conclusions: Conservative treatment should be recommended for renal units with UPJO with impaired function. Nephrectomy should only be considered for an anuric kidney with the onset of urinary tract infection or high blood pressure.

UR23_PO / 14:20 – 14:25

LONG TERM RESULTS OF TREATMENT OF OBSTRUCTIVE MEGAURETER IN 240 CHILDREN

Zukhra Sabirzyanova, Andrey Pavlov
RNCRR, Moscow, Russian Federation

Abstract

Aim of the Study: Evaluation of the results of surgical treatment in 240 children with primary obstructive megaureter in long term follow up (more than 10 years).

Methods: A prospective and retrospective analysis of different surgical methods of treatment - endoscopic dilatation or ureterocystoanastomosis. Access the efficiency and complications in follow up of all patients until puberty.

Main results: Up to 90% of patients with primary obstructive megaureter undergo endoscopic dilatation and ureteral stenting. In most patients (76%) primary endoscopic treatment was performed in infancy. Initially through 1-2 years after endoscopy positive results were noted in 87% patients: preserving or restoring of kidney function (95%), improving UUT urodynamics (60%). Among 32 patients who underwent repeated endoscopic treatment after ineffectiveness of the primary endoscopic correction it was found that repeated dilatation carried out at the age of over 3 years, led to improvement in only 2 patients. The deterioration of the urodynamics occurred in 42% of patients through 3-5 years after endoscopy and required reconstructive plastic surgery in the future. The effectiveness of ureterocystoanastomy depended on the type and the age of the operation. In infants (60 patients) the incidence of complications (obstruction, VUR) reached 40%, among them more often in those who used intravesical techniques (80%).

Conclusions: Surgical treatment of obstructive megaureter is quite effective but has a significant number of complications in children when performing reconstructive plastic surgery at an early age. Endoscopic dilatation technologies do not always allow to radically restore urodynamics of upper urinary tract, but they allow to save the kidney function before reconstructive surgery.

UR24_PO / 14:25 – 14:30

FUNGUS BALL IN THE URINARY SYSTEM AS A CAUSE OF MORTALITY AND MORBIDITY

Ahsen Karagözlü Akgül, Sadık Abidoğlu, Kıvılcım Karadeniz Cerit, Ayten Ceren Bakır, Özge Kılıç Bayar, Gürsu Kıyan
Marmara University Medical School Department of Pediatric Surgery, Istanbul, Turkey

Abstract

Aim of the Study: Emergency or recurrent elective surgical interventions may be required in the management of fungus ball in the urinary tract (UT). The aim of this study is to present our patients with fungus ball in the UT.

Methods: Data of five patients aged between 47 days and 7 months were analyzed retrospectively. Urinary system ultrasound was used in the diagnosis and follow-up of the fungus ball. Candida Albicans in urine culture supported the diagnosis. Antifungal agents were used in medical treatment.

Main results: The common findings of them were long-term hospitalization in the intensive care unit and the use of broad-spectrum antibiotics, especially meropenem. Two patients were treated with fluconazole and/or ambisome therapy for 6 weeks. Four patients who did not respond to medical treatment underwent nephrostomy. Washing via nephrostomy with antifungal agents and internal cleaning with ureterorenoscopy (URS) was performed. Cure was achieved in two of them, but ureterocutaneoustomy (UC) was performed in one of them at the end of 1 month. Then the urinary tract was completely cleared of fungus balls. One patient with anuria attacks, despite all interventions died due to candida sepsis.

Conclusions: It should be considered that a fungus ball may develop in the urinary system in patients receiving long-term antibiotic therapy. This may become the disease of our age. It can cause morbidity and mortality. Awareness should be created, and precautions should be taken before the disease occurs.

14:30 - 16:30

Scientific Session IV

Young Investigator Award

(M1) Regency 1

Chair (Clinical):

Carmen Mesas-Burgos (SWE)

Joep DerikX (NED)

Chair (Basic Science):

Paolo de Coppi (UK)

Mikko Pakarinen (FIN)

24th EUPSA CONGRESS
June 7 - 10, 2023
Hyatt Regency Hotel IZMIR / TURKIYE
European Paediatric Surgeons' Association

YI_Cl01_LO / 14:30 – 14:42

FEMALE SEXUAL FUNCTION IN HIRSCHSPRUNG'S: RESULTS FROM AN INTERNATIONAL MULTICENTRE CROSS-SECTIONAL COHORT STUDY

Anna Löf Granström[1], Annika Mutanen[2], Anders Telle Hoel[3], Joe Davidson[4,5], Simon Eaton[4], Stavros Loukogeorgakis[4,5], Tomas Wester[1], Kristin Bjørnland[3], Mikko Pakarinen[2], Joe Curry[5]
[1]Karolinska Institute, Stockholm, Sweden. [2]New Children's Hospital, Helsinki, Finland. [3]Oslo University Hospital, Oslo, Norway. [4]UCL Great Ormond Street Institute of Child Health, London, United Kingdom. [5]Great Ormond Street Hospital for Children, London, United Kingdom

Abstract

Aim of the Study: Emerging data suggests that women with Hirschsprung's (HSCR) may have issues with sexual function. The aetiology is complex and has not been objectively described in female patients.

Methods: In an international multicentre cross-sectional cohort study of female HSCR patients aged 20-45 years, patients were compared to age-matched normal population controls with Bowel Function Score (BFS) and Female Sexual Function Index (FSFI). Individuals with sexual dysfunction (CompleteFSFI ≤ 26) or with incomplete FSFI were analyzed further. Data are displayed as mean (SD) or median [IQR].

Main results: Patient response rate was 73% (66/91). Fifty-seven patients entered FSFI data; complete scores were available in 46 (81%) vs 237/287 controls (83%). Overall and subdomain scores were similar between patients and controls (Figure); sexual dysfunction was reported in 11 (23%) and 65 (27%) women (p=0.72). Individuals with incomplete FSFI, due to a lack of recent sexual activity, had a lower Sexual Desire score in both HSCR (2.07(1.1) vs 3.61(0.9); p=0.0007) and controls (2.05(0.9 vs 3.36(1.1); p<0.0001), consistent with decreased libido. BFS was lower in these HSCR patients compared to those patients with complete FSFI data (14 [9.75-15.75] vs 17 [16-18]; p=0.0043). Gynaecological and genitourinary comorbidity was reported similarly, however pelvic inflammatory disease and hydrosalpinx were more frequent in HSCR (10/57 vs 2/287; OR30.3[6.44-142.7], p<0.0001).

Conclusions: Women with HSCR have similar sexual function to the general population. However worse continence scores are reported in those with sexual dysfunction. The incidence of issues related to pelvic adhesions was notably increased.

YI_Cl02_LO / 14:42 – 14:54

OUTCOMES OF KIDNEY TRANSPLANTATION AFTER COMBINED PEDIATRIC LIVER-KIDNEY TRANSPLANT

HA Khan[1], R Gander[1], JA Molino[1], GF Royo[1], M Aguilera[1], J Quintero[2], J Juamperez[2], V Pérez[3], A Cruz[3], G Ariceta[3], M López[1], R Charco[4], M Asensio[1]
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Abstract

Aim of the Study: Combined Liver–kidney transplantation (CLKT) is a challenging and rare procedure in children. The aim of this study is to evaluate the results of CLKT, focusing on kidney outcomes.

Methods: Retrospective analysis (September 2000 - November 2022) of patients who underwent CLKT.

Main results: Out of 266 kidney transplants (KT), 21 (7.8%) were CLKT. Mean age was 8.7 years (SD 4.6). Primary diseases were autosomal-recessive polycystic liver–kidney disease (12), primary hyperoxaluria (6), idiopathic portal hypertension with ESKD (1), methylmalonic-acidemia (1) and multiorganic fibrosis related to Nek8 (1). 90% of these CLKT were performed simultaneously and 10% (2) were sequential kidney transplants, 2 and 11 months after the liver transplant. 80% of the patients had required prior renal replacement therapy and 19% (4) had received a previous kidney transplant. In seven patients both transplants were performed by a single low-J-shaped incision with the kidney placed intraperitoneally. In the remaining 14 the kidney was implanted extraperitoneally through a separate incision. Three patients (15%) experienced postoperative complications: two urinary leaks which required double J stenting and one vascular spasm. Renal graft's survival rates at 1, 5 and 10 years were 94%, 88% and 69%. Patient survival rates after CLKT at 1, 5 and 10 years were 95%, 94% and 87%. Two patients died (9.5%) during follow-up, both with functioning grafts.

Conclusions: Combined liver kidney transplant in children is a complex procedure but the rate of complications and survival rates (of both graft and patient) in our series are encouraging.

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YI_Cl03_LO / 14:54 – 15:06

The European Anorectal Malformation Network (ARM-Net) patient registry: clinical and surgical characteristics of 2598 patients

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Abstract

Aim of the Study: With an estimated European prevalence of 1 in 3000-5000 live births, anorectal malformations (ARM) are a rare disease. Collaborative collection of data via patient registries is paramount to rare disease research. The Anorectal Malformation Network (ARM-Net) registry was established in 2010 to bring these scarce and scattered data together. We aimed to describe the clinical and surgical characteristics of the included patients.

Methods: The ARM-Net registry collects data on Krickenbeck type, diagnostics and associated anomalies, surgical details, and complications, and one-year follow-up functional outcomes. Data from all patients, included until January 1st, 2023, were analyzed.

Main results: A total of 2598 patients were included from 33 centers. Sex distribution was equal (50.1% male) and median age at reconstructive surgery was 4 months (IQR 2-7). The most common ARM types were perineal fistula for both sexes (41.1%), rectovestibular fistula in females (31.6%), and rectobulbar (16.8%) and rectoprostatic fistula (14.8%) in males. Associated anomalies were predominantly cardiac (27.4%), vertebral/sacral (23.6%), and renal (23.4%). Of all patients, 42.1% received a stoma. Reconstructive surgery, mostly (mini-)PSARP (75.6%), was performed in at least 85%. Complications occurred in 22.6%, with 3.5% requiring reoperation. An increased risk for complications existed when operated for bladderneck fistula (OR 3.6, CI1.4-9.5), >3cm channel cloaca (OR 5.8, CI1.9-18.1), and cloacal exstrophy (OR 7.1, CI 1.4-37.2).

Conclusions: The ARM-Net registry is the largest European ARM cohort and collects valuable information. The joint, collaborative efforts of multiple centers facilitate the gaining of knowledge on the understanding of characteristics of and treatment strategies for ARM.

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YI_Cl04 _LO / 15:06 – 15:18

NEAR-INFRARED SPECTROSCOPY (NIRS) AS A PREDICTIVE TOOL FOR NECROTIZING ENTEROCOLITIS (NEC) DEVELOPMENT AND PROGRESSION IN PRETERM NEONATES: A PILOT STUDY

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Abstract

Aim of the Study: NIRS has been used as non-invasive bedside monitoring system of tissues oxygenation. This study investigated whether parameters from abdominal and cerebral NIRS (early tissue oxygen saturation (CrS02, ArS02); oxygenation variability; and fractional-tissue oxygen extraction (FTOE)) might predict NEC onset. Additional aim was to assess whether ArS02 can be also used as predictive indicator for severe NEC during its early stage.

Methods: This single-center prospective study was performed between May 2021-December 2022. Two group were defined: 1) High risk were monitored with NIRS within 24 hours of life then once a week till the fourth week or till the NEC onset if developed. 2)NEC suspected were surveilled with NIRS monitoring within 24 hours from suspicion and between 48-72 hours after. NIRS results were correlated to outcomes: NEC development and NEC severity (medically vs surgically treated).

Main results: Group 1 included 20 patients; 3 of them developed NEC. Low and fluctuating ArS02 and high intestinal FTOE predicted the risk of developing NEC (p=0.04, p=0.001 p=0.05 respectively) as well as wide variation of ArS02 on day 14 of life (p=0.003). Five NEC and 4 no NEC patients were recruited in group 2: low ArS02 within 24 hours after symptoms' onset and a high ArS02 variability predicted NEC severity (p=0.04, p=0.045 respectively) *(Table 1)*

Conclusions: Abdominal NIRS monitoring may be a useful tool in the risk assessment of NEC and its severity in preterm infants. In particular, low ArS02 seems indicating high-risk neonates for needing surgery.

	GROUP 1 (HIGH RISK OF NEC)			GROUP 2 (SUSPECTED NEC)			
Variables	NEC (3)	NO NEC (17)	P value	NEC treated medically (2)	NEC requiring surgery (3)	No NEC (4)	P value
Gestational age (week)-median (range)	27.7 (26-29.3)	28.5 (25.2-36.3)	0.6	27.7 (26.1-29.6)	26 (25.1-27.1)	33 (32-35.1)	**0.001**
Birth weight (g)-median (range)	1130 (580-1680)	1219 (720-2769)	0.8	1215 (780-1680)	776.6 (580-1080)	1565 (1430-1820)	**<0.001**
Congenital hearth disease- n(%)	0 (0)	6 (35.3)	0.5	0 (0)	0 (0)	1 (25)	0.6
$CrSO_2$ 24 h of life- mean (range)	70.3 (51-99)	73.4 (60-74)	0.07	/	/	/	
$CrSO_2$ 7 day of life- mean (range)	72.6 (55-99)	74.8 (57-89)	0.35	/	/	/	
$CrSO_2$ 14 day of life- mean (range)	73 (54-86)	72 (61-82)	0.68	/	/	/	
$CrSO_2$ 21 day of life- mean (range)	74 (62-99)	79 (68-86)	0.65	/	/	/	
$ArSO_2$ 24 h of life- mean (range)	49.7 (15-85)	63.3 (18-86)	**0.04**	/	/	/	
$ArSO_2$ 7 day of life- mean (range)	75.6 (57-89)	69 (50-94)	0.17	/	/	/	
$ArSO_2$ 14 day of life- mean (range)	72 (53-77)	68.8 (49-86)	0.77	/	/	/	
$ArSO_2$ 21 day of life- mean (range)	74 (60-86)	72 (58-89)	0.9	/	/	/	
$ArSO_2$ variability-24 h of life- mean (range)	0.04 (0.01-0.1)	0.35 (0.3-0.4)	**0.001**	/	/	/	
$ArSO_2$ variability - 14 day of life -mean (range)	0.039 (0.01-0.09)	0.1 (0.08-0.2)	**0.03**	/	/	/	
FTOE- 24 h of life mean (range)	0.55 (0.27-1)	0.9 (0.8-1)	**0.05**	/	/	/	
$CrSO_2$ 24 h after NEC suspicion- mean (range)	/	/		(70.5) 58-84	(71) 60-85	(72) 58-88	0.5
$CrSO_2$ 48-72 after NEC suspicion- mean (range)	/	/		(72) 64-80	(70) 65-75	(75) 60-88	0.08
$ArSO_2$ 24 h after NEC suspicion- mean (range)	/	/		(52) 35-70	(56) 45-76	(60) 45-79	**0.045**
$ArSO_2$ 48-72 after NEC suspicion -mean (range)	/	/		(58) 42-88	(60) 54-89	(64) 50-85	0.08
$ArSO_2$ variability-24 h after NEC suspicion - mean (range)				0.1 (0.08-0.2)	0.3 (0.2-0.5)	0.1 (0.06-0.2)	**0.04**

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YI_Cl05_LO / 15:18 – 15:30

LONG-TERM ORTHOPAEDIC OUTCOMES IN PATIENTS TREATED FOR PERIPHERAL NEUROBLASTIC TUMOURS: A 20-YEAR- RETROSPECTIVE ANALYSIS

Mahmoud Abdelbary[1], Alessandra Preziosi[1], Laura Privitera[2], Dhanya Mullassery[1], Kate Cross[1], Stefano Giuliani[1,2]
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Abstract

Aim of the Study: To review the long-term orthopaedic outcomes in patients treated for peripheral neuroblastic tumours (PNTs) at a tertiary oncology centre.

Methods: Surgical and clinical records of patients treated for PNTs in the last 20 years and with a follow-up of ≥ 5 years were reviewed and analysed. Audit registration # 3207. Chi-square correlation was used for comparison. P value <0.05 was considered significant.

Main results: A total number of 168 patients fulfilled the inclusion criteria. 23/168 patients had no residual tumour following chemotherapy or observation; none experienced orthopaedic issues. 145 patients had surgery +/-radiotherapy +/- laminectomy. Long-term orthopaedic complications (scoliosis, kyphosis, loss of lumbar lordosis, leg length discrepancy (LLD), and short stature) were found in 28/145 (19.3%) patients. Scoliosis developed in 20/28 (71%), LLD in 5/28(18%). Other complications include kyphosis, loss of lumbar lordosis and short stature with 1 patient for each. Among the 20 patients with scoliosis, 12(60%) received radiotherapy. Every patient receiving laminectomy for spinal cord decompression developed scoliosis (n=6). Only 2 patients experienced scoliosis after thoracic surgery alone. Long-term orthopaedic complications affected patients with abdominal (n=16), thoracic (n=11) and pelvic (n=1) PNTs. Table 1 showed comparisons between patients with and without orthopaedic complications. There was no significant correlation between age group, sex, stage, site of tumour and incidence of complications. Surgery + radiotherapy and surgery + laminectomy were risk factors for scoliosis.

Conclusions: A long-term spinal/orthopaedic follow-up is required for patients with PNTs who received laminectomy, surgery, and or radiotherapy independently from the location of the primary tumour.

Table 1: Comparison between patients with and without long-term orthopaedic complications.

	Absence of orthopaedic complications n= 117	Presence of orthopaedic complications n= 28	P value
Age at intervention			
<1 year	46 (39%)	7 (25%)	
1-4 years	57 (49%)	15 (5%)	0.09
5-9 years	14 (12%)	6 (21%)	
Sex			0.81
Male	78 (67%)	18 (64%)	
Female	39 (33%)	10 (36%)	
Stage			0.96
L1	5 (3%)	1 (3%)	
L2	41(35%)	9 (32%)	
M	52 (44%)	14(50%)	
MS	19 (16%)	4 (14%)	
Risk factor			
Surgery+ Radiotherapy	49 (42%)	20 (71%)	<0.05 *
Surgery+ Laminectomy	0	6 (21%)	
Surgery only	68 (41%)	2 (7%)	
Site of the tumour			
Abdomen	76 (65%)	16 (57%)	0.66
Thorax	39 (33%)	11 (39%)	
Pelvis	2 (2%)	1 (3.5%)	

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YI_BS01_LO / 15:30 – 15:42

MULTI-OMICS GUIDED IDENTIFICATION OF TRYPTOPHAN METABOLITE SHOWS PREDICTIVE VALUE TO *E. COLI* LATE ONSET SEPSIS IN DUTCH PRETERM NEONATE STUDY

Yannick van Schajik[1], Gemma Pitotti[1,2], Theodorus B.M. Hakvoort[1,3], Iris Admiraal - van den Berg[1,3], Mark Davids[3], Evgeni Levin[4], Hendrik J. Niemarkt[5], Anton H.L.C. van Kaam[6], Nanne K.H. de Boer[7], Joep P.M. Derikx[2], Tim G.J. de Meij[8], Gabriele Gross[9], Wouter J. de Jonge[1,10], Bruno Sovran[1,2]
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Abstract

Aim of the Study: Late onset Neonatal sepsis (LONS) is a leading cause of mortality in preterm infants, affecting up to 15% with a mortality rate of ~15%. Clinical symptoms are nonspecific and often diagnosed in advanced stage of infection, illustrating the need for novel preclinical biomarkers. This study aimed to identify predictive biomarkers for LONS using fecal metagenomics and targeted metabolomics.

Methods: In a Dutch two-center study, fecal samples and clinical data were collected daily from birth to onset of *S.aureus* and *E.coli* LONS in preterm neonates and controls (n=40). 16S sequencing, shotgun metagenomics and quantitative tryptophan (Trp) metabolomics was performed up to 7 days before and 5 days after LONS diagnosis. Functional differences were evaluated by pan-genome and Trp metabolite analysis. Predictive value of 16S was assessed by classification modeling. In vitro aryl hydrocarbon receptor (AhR) activity was measured by reporter assay.

Main results: Relative abundance (RA) of *E.coli* was significantly higher pre-onset in *E.coli* LONS(mean=59.2%,SD=45.4%), compared to controls(mean=0.63%,SD=0.89%,P=0.017). In contrast, no significant difference in RA of S.aureus was detected in S.aureus LONS. Fecal Trp metabolites detected included kynurenine, serotonin, and Indoles. Indole-x was significantly elevated 5 days pre-diagnosis of *E.coli* LONS and activated AhR in reporter assay at measured fecal concentrations (*Figure-1*). In support, metagenomics analysis indicated a negative association to microbial Trp biosynthesis in the *E.coli* LONS metagenome.

Conclusions: This multi-omics approach suggests a strong increase in relative abundance of *E.coli* pre-LONS and indicates a functional difference in host-microbe interaction mediated by Trp metabolism, which has potential for preclinical biomarker development.

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YI_BS02_LO / 15:42 – 15:54

TISSUE-ENGINEERED VAGINAS SUPPORT LIVE BIRTHS IN RABBITS

Oliver Willacy[1], Nikolai Juul[1], August Olesen[2], Charlotte Egeland[2], Carmen Montano-Almendras[1], Fatemeh Ajallouiean[3], Clara I Chamorro[4], Magdalena Fossum[1,4]
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Abstract

Aim of the study: To study the safety and long-term performance of tissue-engineered grafts for vaginal reconstruction. The perioperative, layered, autologous tissue expansion (PLATE) grafts were designed to circumvent the drawbacks of conventional tissue engineering and were here applied for the first time in vivo.

Methods: During a single laparotomy procedure, a subtotal vaginal segment (3x2 cm) was removed. A 1:5 expansion-ratio PLATE graft was made inside the operating theater and contained autologous tissue particles, collagen gel, and a supporting, bioabsorbable vicryl net. 28 female rabbits of 3kg were randomized to receive a PLATE graft, an acellular graft, or sham surgery (11:9:8). After three months, 16 rabbits were assessed with vaginopscopy, biopsy, and x-ray. Six months after surgery, nine rabbits (3:3:3) were randomized to mating, pregnancy and birth.

Main results: All rabbits survived the surgical procedure. At three months, all vaginas were patent and covered in epithelium, and the majority could produce peristaltic contractions through the graft zone. At six months, all the mated rabbits became pregnant in the first cycle, and 5/6 rabbits with engineered grafts were able to support natural vaginal delivery with similar or better birth- and survival rates to sham-operated animals. At seven months, all vaginas were patent, stricture-free, and showed multilayered tissue morphology during the histological assessment.

Conclusions: PLATE grafts were safe for vaginal reconstruction surgery in rabbits. They demonstrated long-term functionality and withstood the biomechanical forces of labor. We consider PLATE grafts a relevant future option for clinical translation in selected patient cases.

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YI_BS03_LO / 15:54 – 16:06

MACROPHAGE ENRICHMENT IN CDH FETAL HYPOPLASTIC LUNGS AND THE IMMUNO-MODULATORY EFFECTS OF AMNIOTIC FLUID STEM CELL EXTRACELLULAR VESICLE THERAPY

Fabian Doktor[1,2], Rebeca Lopes Figueira[1,2], Kasra Khalaj[1,2], Elke Zani-Ruttenstock[1,2], Matisse Blundell[1,2], Lina Antounians[1,2], Augusto Zani[1,2]
[1]Developmental and Stem Cell Biology Program, Peter Gilgan Centre for Research and Learning, The Hospital for Sick Children, Toronto, Canada. [2]Division of General and Thoracic Surgery, The Hospital for Sick Children, Toronto, Canada

Abstract

Aim of the Study: Experimental studies suggested that fetal lungs of congenital diaphragmatic hernia (CDH) pups have an inflammatory signature that contributes to impaired branching. Herein, we investigated the: 1) inflammatory profile of rat, mouse, and human fetal CDH lungs; 2) anti-inflammatory effects of amniotic fluid stem cell extracellular vesicles (AFSC-EVs).

Methods: Subjects: CDH was induced in rats (n=14, AUP#49892) and mice (n=16, AUP#64247) by maternal administration of nitrofen/bisdiamine (E8.5) or nitrofen (E9.5), respectively; human autopsy samples were obtained from CDH fetuses and controls at 19-27 weeks of gestation (n=8, REB#1000074888). AFSC-EVs: isolated by ultracentrifugation, characterized by size (Nanosight), shape (electron microscopy), and canonical markers (Western blot), and administered intra-amniotically in E18.5 rats (saline for controls). Outcome measures: Lungs were compared for macrophage count and function (CD68+cells, TNFα), proinflammatory cytokine expression (RT-qPCR, immunofluorescence), and airspace density (H&E). In vitro macrophage test: RAW264.7 cells were stimulated with lipopolysaccharide, treated with AFSC-EVs or medium, and compared for TNFα expression (RT-qPCR). Statistics: t-/Mann-Whitney-/ANOVA-/Kruskal-Wallis-tests.

Main Results: Compared to controls, rat, mouse, and human CDH lungs had increased macrophage density and expression of TNFα (**Fig.1A**) and proinflammatory cytokines (phospho-NF-κB-p65, Cxcl1, Lipocalin-2, IL-1ß,-6, IFNγ). Intra-amniotic AFSC-EV injection to rats rescued lung branching, macrophage density, and TNFα levels (**Fig.1B**). AFSC-EV administration to RAW264.7 cells restored TNFα expression (**Fig.1C**).

Conclusions: This study provides unprecedented evidence that macrophages play an active role in CDH pulmonary hypoplasia and are a novel treatment target to restore lung development. AFSC-EVs rescue lung branching in part through anti-inflammatory and immuno-modulatory properties.

YI_BS04_LO / 16:06 – 16:18

DIAGNOSIS OF NECROTISING ENTEROCOLITIS USING ARTIFICIAL INTELLIGENCE

Jayaram Sivaraj[1,2], Ka Wai Yung[3], Lodovico Di Giura[4], Belinda Hughes[1], Rohan Ganvir[5], Maria Chalia[5], Simon Hannam[5], Susan Shelmerdine[6,7,8], Simon Eaton[7,8], Danail Stoyanov[3], Joe Curry[1], Paolo De Coppi[1,7,8], Evangelos Mazomenos[3], Stavros Loukogeorgakis[1,7,8]
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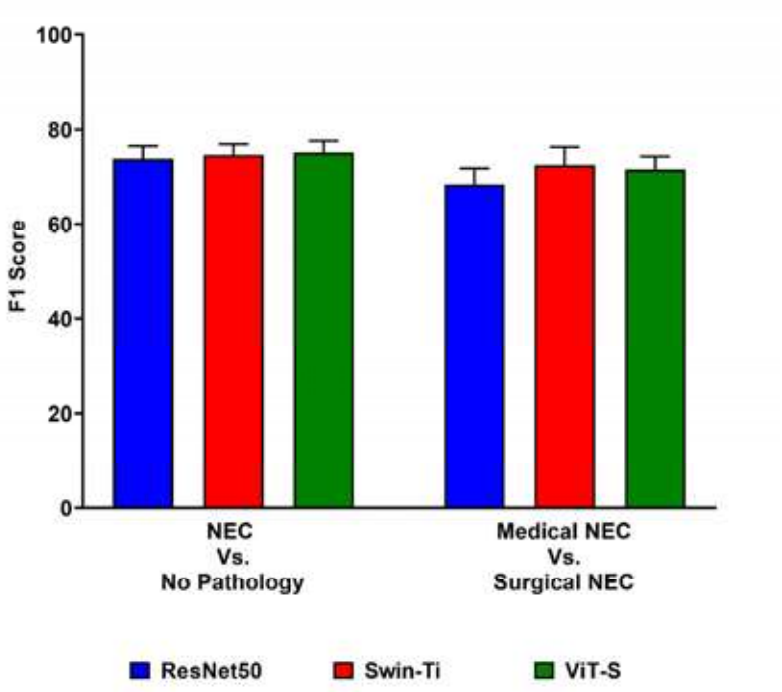
Abstract

Aim of the Study: Necrotizing Enterocolitis (NEC) is a neonatal disease with high morbidity and mortality. Identifying the disease on Abdominal X-rays (AXR) may be challenging for inexperienced clinicians. Our aim is to develop an Artificial Intelligence (AI) Algorithm to detect NEC on AXR.

Methods: AXR were obtained from 194 infants with NEC (treated 2010-2020) and from 140 age-matched infants with no abdominal pathology (NP). The data were randomly split into ratio of 70:10:20 (training: validation: testing) with no duplication between sets. 3 standardized models (ResNET50, Swin-Ti and ViT-S) were trained, and 5 test runs performed. Performance was measured by F1 score (preferred metric of accuracy determined by the harmonic mean of precision and recall; 100=perfect score). Outcome data were expressed as mean (SD) and were analyzed by 1-way analysis of variance with Tukey post-hoc tests.

Main Results: Our data included 633 NEC AXR (405 medical; 228 surgical) and 371 NP AXR. ViT-S was the best standardized model to identify NEC; F1 75.1 (2.5). Swin-Ti was superior to identify Surgical NEC; F1 72.4 (3.9) [Figure]. There was no statistically significant difference between model outcomes.

Conclusion: Our AI algorithms were proficient at differentiating NEC from NP, and Surgical NEC from Medical NEC. A larger data set with annotation of AXR features will improve performance and reduce the risk of overfitting. A custom model with a multimodal approach using imaging and clinical data would be ideal to improve performance.


100
80
60
40
20
0
F1 Score
NEC
Vs.
No Pathology
Medical NEC
Vs.
Surgical NEC
ResNet50
Swin-Ti
ViT-S

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YI_BS05_LO / 16:18 – 16:30

LIPID NANOPARTICLE DELIVERY OF miRNA-148a ATTENUATES INTESTINAL INFLAMMATION DURING EXPERIMENTAL NECROTIZING ENTEROCOLITIS

Mina Yeganeh[1], Jingan Chen[2], George Biouss[1], Andrea Zito[1], Felicia Balsamo[1], Bo Li[1], Carol Lee[1], Bowen Li[2], Agostino Pierro[1]
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Abstract

Aim of the Study: Maternal breast milk is protective against the development of necrotizing enterocolitis (NEC) in neonates. Additionally, human breast milk-derived extracellular vesicles (EVs) are protective against experimental NEC. miRNA-148a is the most abundant miRNA in breast milk EVs and reduces inflammation in various inflammatory diseases by inhibiting Toll-like receptor 4 (TLR4) signaling. However, this has not been investigated in NEC. Our aim is to investigate the potential therapeutic role of miRNA-148a in experimental NEC. To prevent its degradation, we used a novel approach to deliver miRNA-148a using lipid nanoparticles (LNPs) – nanosized vesicles composed of ionizable lipids.

Methods: miRNA-148a (encapsulated in LNPs) was administered to healthy neonatal C57BL/6 mice (ethics approval # 44032) on postnatal day (P) 9 via enema. After 6 hours, mice were sacrificed, and distal ileum was imaged (**Fig. 1A**). NEC was established in P5-P9 mice by gavage feeding of hyperosmolar formula, lipopolysaccharide (LPS) and exposure to hypoxia. On P5 and P7, mice received by enema either saline (PBS) or miRNA-148a. Breastfed mice were used as healthy control. Mice were sacrificed on P9 and distal ileum was digested for RT-qPCR.

Main results: LNPs delivered miRNA-148a to the intestinal epithelial cells (**Fig. 1A**). Administration of miRNA-148a in experimental NEC resulted in reduced mRNA expression of pro-inflammatory cytokine TNFα (**Fig. 1B**) and TRIF, a mediator protein in the TLR4 pathway (**Fig. 1C**).

Conclusions: We demonstrated a novel method to deliver small RNA molecules to the intestine using LNPs. We have also shown that miRNA-148a has potential therapeutic effects in experimental NEC.

17:30 - 18:30

Scientific Session V

Hepatobiliary

(M1) Regency 1

Chair: Mark Davenport (UK)

Piotr Czauderna (OPL)

HB01_LO / 17:30 – 17:40

FEATURING MOLECULAR REGULATION OF BILE ACID HOMEOSTASIS IN PEDIATRIC SHORT BOWEL SYNDROME

Annika Mutanen, Mikko Pakarinen
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Abstract

Aim of the Study: Disturbed bile acid homeostasis in short bowel syndrome (SBS) may foster development of intestinal failure associated liver disease. We studied molecular regulation of bile acid homeostasis in relation to serum and fecal bile acid profiles in pediatric SBS.

Methods: Liver histopathology and mRNA expression of the key genes regulating synthesis, uptake and export of bile acids, and cellular receptors involved in bile acid signaling were measured in SBS patients (n=33) at median age of 3.2 years. Sixteen patients were currently on parenteral nutrition (PN) and 17 had weaned off PN. Serum (n=24) and fecal (n=10) bile acid profiles were assessed. Results were compared to healthy control subjects.

Main results: Overall, 90% (9/10) of patients with histological cholestasis received current PN, while portal inflammation was present in 60% (6/10) of patients with cholestasis compared to 13% (3/23) of patients without cholestasis (P=0.01). In SBS, a molecular landscape of increased hepatic synthesis and uptake of bile acids was revealed. Cholestatic patients on current PN showed widespread repression of FXR target genes responsible for synthesis, uptake and canalicular secretion of bile acids compared to weaned off patients. Serum and fecal primary bile acids were similarly increased and multidrug resistance-associated protein 3 repressed both during and after weaning off PN.

Conclusions: Our findings demonstrate complexity of bile acid homeostasis in SBS simultaneously overlaid by interrupted enterohepatic circulation promoting increased synthesis and conservation of bile acids, and by adaptive responses possibly protecting hepatocytes against harmful bile acid accumulation during PN associated cholestasis induced by inflammation.

HB02_LO / 17:40 – 17:50

DOES A HISTORY OF UMBILICAL VEIN CATHETERIZATION PRECLUDE CHILDREN FROM A SUCCESSFUL MESO REX BYPASS?

Stephanie Yang, Katherine Brandt, Sydney Carra, Caroline Lemoine, Riccardo Superina
Ann & Robert H. Lurie Children's Hospital of Chicago, Northwestern University Feinberg School of Medicine, Chicago, USA

Abstract

Aim of the Study: To evaluate the impact of a previous umbilical vein catheter (UVC) on successfully performing a Meso-Rex bypass (MRB) for the treatment of portal hypertension (PHT) caused by extrahepatic portal vein obstruction (EHPVO).

Methods: A retrospective review of patients with EHPVO and known UVC status operated on for an intended MRB at our institution was performed (1997-2022). Fifty-three patients were excluded because of unknown UVC status. Patients were categorized in 2 groups (history of UVC or not) for comparisons. A p value <0.05 was considered significant. Institutional Review Board approval was obtained (#2006-12729).

Main results: One hundred and ninety-four patients were included (UVC n=57; no-UVC n=137). Patients in the UVC group were significantly younger at surgery and the incidence of prematurity was higher (Table 1). The incidence of other risk factors for the development of EHPVO was similar between groups. Using binary logistic regression, only history of UVC was able to predict the ability to perform MRB (OR 6.4 [3.2-13.1], p<0.001). The success rate of MRB was significantly higher in patients with no history of UVC (UVC 28/57, 49.1% vs. no-UVC 118/137, 86.1%, p<0.001). However, there was no difference in MRB patency at discharge (UVC 25/28, 89.3% vs. no-UVC 110/118, 93.2%, p=0.48).

Conclusions: Our results indicate that history of UVC is not a contraindication to MRB. Half of UVC patients were able to successfully receive MRB. Therefore, patients with symptomatic PHT from EHPVO should not be excluded from consideration for MRB based on UVC history.

HB03_SO / 17:50 – 17:55

OUTCOMES OF PRIMARY AND PRE-PRIMARY PROPHYLACTIC MESO-REX BYPASS SURGERY

Sydney Carra[1,2], Katherine Brandt[1,2], Stephanie Yang[1,2], Caroline Lemoine[1,2], Riccardo Superina[1,2]
[1]Ann & Robert H. Lurie Children's Hospital of Chicago, Division of Transplant and Advanced Hepatobiliary Surgery, Chicago, USA. [2]Feinberg School of Medicine, Chicago, USA

Abstract

Aim of the Study: The Meso-Rex bypass (MRB) is a curative procedure for extrahepatic portal vein obstruction (EHPVO). We describe our experience in expanding the indications for this procedure to a pre-prophylactic patient group without symptoms or signs of portal hypertension, and a prophylactic group with clinically evident portal hypertension but no history of bleeding.

Methods: A retrospective chart review was done of patients who received a pre-primary (G1) or primary prophylactic (G2) MRB for EHPVO at our institution (1997-2022). Outcomes for both groups were compared for growth, ammonia levels, splenic size, and platelet counts. $p<0.05$ was considered statistically significant. IRB approval was obtained (IRB #2006-12729).

Main Results: A total of 237 patients referred for EHPVO underwent surgery for portal hypertension. There were six patients in G1 and 65 in G2, of whom 4 and 45 patients successfully received an MRB. At 1-year post-surgery, 4/4 and 38/45 patients respectively had a patent MRB. Ammonia decreased 1-year post-operatively in both G1 (42.3±12.5 µMol/L to 29.8±5.0 µMol/L, $p=0.13$) and G2 (38.3±17.4 µMol/L to 27.0±10.8 µMol/L, $p<0.001$). Splenomegaly and thrombocytopenia improved significantly at 1-year postoperatively in G2 (Table 1). Height z-score at 1-year in both G1 and G2 also improved ($p=0.18$ and 0.13 respectively, Table 1).

Conclusions: The Meso-Rex bypass has yielded good outcomes for symptomatic patients. Procedures in children without symptoms and minimal signs may be considered in selected patients to prevent future sequelae of portal hypertension and improve neurocognitive function by reversing hyperammonemia.

HB04_SO / 17:55 – 18:00

SERUM BILE ACIDS EARLY AFTER PORTOENTEROSTOMY PREDICT NATIVE LIVER SURVIVAL AND PORTAL HYPERTENSION IN BILIARY ATRESIA

Maria Hukkinen[1,2], Linda Anderson[2,3], Timo Jahnukainen[4], Mikko P Pakarinen[1,2]
[1]Department of Pediatric Surgery, New Children's Hospital, University of Helsinki and Helsinki University Hospital, Helsinki, Finland. [2]Pediatric Liver and Gut Research Group, Helsinki, Finland. [3]University of Helsinki, Helsinki, Finland. [4]Department of Pediatric Nephrology and Transplantation, New Children's Hospital, University of Helsinki and Helsinki University Hospital, Helsinki, Finland

Abstract

Aim of the Study: After portoenterostomy for biliary atresia, bilirubin level three months postoperatively is considered the strongest predictor of native liver (NL) survival. No reliable early predictors for development of portal hypertension (PH) exist. We aimed to assess whether postoperative serum bile acids predict NL survival and PH.

Methods: Serum bile acids and bilirubin were measured one and three months after portoenterostomy and their association with NL survival and PH (>grade 1 esophageal varices or splenomegaly and thrombocytopenia <150 x 10E9) were studied with survival analyses.

Main results: Out of 56 biliary atresia patients operated during 2005-2022, 42 (75%) achieved clearance of jaundice (COJ, bilirubin ≤20 µmol/L). All patients received ursodeoxycholic acid postoperatively. PH developed in 57% after COJ (n=24) at median age of 2 (interquartile range 1.2-4.2) years. Five-year NL survival was 83% (standard error, SE 9.1) compared to 51% (SE 9.8) in patients with bile acids <100 versus >100 µmol/L one month after surgery (p=0.009), respectively. Two-year PH-free survival after COJ was 93% (SE 6.9) compared to 55% (SE 12) in patients with bile acids <100 versus >100 µmol/L at one month (p=0.020). Postoperative bilirubin ≤20 µmol/L at three months predicted improved five-year NL survival [91% (SE 5.0) versus 26% (SE 10), p<0.001] but was unrelated with PH-free survival after COJ [68% (SE 8.3) versus 71% (SE 17) at two years, p=0.244].

Conclusions: Serum bile acid cutoff 100 µmol/L one month after portoenterostomy reliably predicted NL survival and PH development after COJ.

HB05_SO / 18:00 – 18:05

PROGRESSIVE FAMILIAL INTRAHEPATIC CHOLESTASIS – OUTCOME AND TIME TO TRANSPLANT AFTER BILIARY DIVERSION ACCORDING TO GENETIC SUBTYPES.

Abdulla Sahloul[1], Elka Lainka[1], Simona Kathemann[1], sandra swoboda[1], Carola Dröge[2], Yahya Al-Matary[1], Michael Berger[1], Maren Schulze[3]
[1]university hospital, Essen, Germany. [2]university hospital, Düsseldorf, Germany. [3]King Faisal Spicialist and Research Centre, Riad, Saudi Arabia

Abstract

Aim of the Study: Progressive familial intrahepatic cholestasis (PFIC) is a heterogeneous disease characterized by progressive cholestasis in childhood. Surgical therapy aims in preventing bile absorption either by external or internal biliary diversion (BD). Overall, the literature is scarce, however, accumulating evidence points to PFIC 2 having a more aggressive course and to respond less favorable to BD. We aimed to retrospectively analyze the long-term outcome of PFIC 2 compared to PFIC 1 following BD at our center.

Methods: Clinical data and laboratory findings of all children with PFIC (n = 40), who were treated and managed in our hospital between 1993 and 2022, were analyzed retrospectively.

Main results: Overall, we treated 40 children with PFIC Type I (n = 10), Type II (n = 20) and Type III (n = 10). Biliary diversion was performed in 13 children (with PFIC 1, n = 6 and II, n = 7). Following BD, bile acids (BA) ($p = 0.0002$), cholesterol ($p < 0.0001$) and triglyceride ($p < 0.0001$) levels significantly decreased only in children with PFIC 1 but not in PFIC 2. Three out of 6 children (50%) with PFIC 1 and 4 out of 7 children (57%) with PFIC 2 required liver transplantation despite undergoing BD. Of the 10 children who had PFIC 3, none had biliary diversion and 7 (70%) required liver transplantation.

Conclusions: In our cohort, biliary diversion was effective in decreasing bile acids, cholesterol levels as well as triglycerides in the serum only in children with PFIC 1 but not PFIC 2.

HB06_SO / 18:05 – 18:10

MINIMAL ACCESS SURGERY OF THE PANCREAS IN CHILDREN

Adam Kowalski, Marek Stefanowicz, Grzegorz Kowalewski, Hor Ismail, Marek Szymczak, Piotr Kaliciński
Children's Memorial Health Institute, Warsaw, Poland

Abstract

Aim of the Study: Although minimal access surgery is widely accepted in paediatric surgery, reports of its use in pancreatic pathologies are still limited. The aim of this study is to present our experiences in the laparoscopic approach for pancreatic diseases in children.

Methods: Between 2018 and 2022 there were 51 children with pancreatic pathologies treated in our center which required surgery. Fifteen underwent laparoscopic procedures due to chronic pancreatitis (11 patients) and tumors in 4. The median age of the patients was 12,3 years (6,1 – 16,8 years). Among 11 patients with chronic pancreatitis, we performed the Puestow procedure in 6 patients and pancreatic pseudocyst – Roux-Y anastomosis in 5 children. In patients with pancreatic tumors, distal pancreatic resection was performed in 2 children, and central pancreatic resection with Roux-Y distal anastomosis in 2 patients. Histopathological exams showed a solid pseudopapillary tumor in 3 and a neuroendocrine tumor in 1 patient.

Main results: In 2 cases (13%), conversion to laparotomy was required due to technical problems. In 1 patient, Roux-Y obstruction occurred – reanastomosis was managed laparoscopically. In 1 case, pancreatic fluid collection required endoscopic cysto-gastrostomy. We did not observe late complications. Follow-up ranges between 1 month to 2 years (median seven months).

Conclusions: The laparoscopic approach in paediatric patients with pancreatic pathologies is safe and feasible but requires extensive experience in minimal access techniques and pancreatic surgery.

HB07_SO / 18:10 – 18:15

DIAGNOSTIC-THERAPEUTIC CONCORDANCE IN THE MANAGEMENT OF ESOPHAGEAL VARICES IN PEDIATRIC PATIENTS

Elisa Zambaiti[1,2], Camilla Pagliara[1], Giulia Mottadelli[1], Sara Renzo[3], Mara Cananzi[4], Luca Maria Antoniello[1], Piergiorgio Gamba[1]
[1]Pediatric Surgery, Department of Woman and Child Health, Padova, Italy. [2]Pediatric Surgery, Regina Margherita Pediatric Hospital, Torino, Italy. [3]Pediatric Gastroenterology, Meyer Pediatric Hospital, Firenze, Italy. [4]Pediatric Gastroenterology, Department of Woman and Child Health, Padova, Italy

Abstract

Aim of the Study: Portal hypertension is the leading cause of esophageal varices formation in pediatric age group. In available literature, there is limited evidence about grading, optimal prophylactic management, and selection criteria in the pediatric age group. Moreover, few studies investigate the concordance of endoscopists in the evaluation of the intraoperative image. Aim of the present study is to determine inter-observer and intra-observer variability among surgeons and gastroenterologists performing endoscopies for pediatric esophageal varices.

Methods: A structured questionnaire with 15 recordings of endoscopic appearance of esophageal varices has been administered to specialists in the field. For each recording, a classification, description of common morphological features and proposed treatment with eventual follow-up program were considered. Inter-observer and intra-observer concordance have been evaluated with Fleiss k and Cohen k indices respectively.

Main results: A total of 16 endoscopists from 11 centers filled the questionnaire, equally divided among pediatric gastroenterologists (8) and pediatric surgeons (8). Overall concordance was low in classification ($k < 0.30$), indications for treatment ($k=0.19$) and follow-up ($k=0.06$). Better concordance has been obtained in high-volume compared to low-volume centers both in inter-observer and intra-observer concordance for almost all analyzed items (see Table 1).

Conclusions: Inter-observer concordance in the diagnosis and treatment of esophageal varices in the pediatric age is low, especially in the indication for treatment and follow-up. The presence of specific pediatric guidelines must be advocated to ameliorate the management of these patients.

HB08_SO / 18:15 – 18:20

Long-Term Outcomes for Split-Liver Transplantation in Pediatric Recipients: A Comparison of Ex Vivo and In Situ Techniques

Karla Estefanía-Fernández, Carlos Delgado-Miguel, María Velayos, Ane Andrés, Mirian Maestre, Javier Serradilla, Alba Sanchez, Alba Bueno, Esteban Frauca, Jose Luis Encinas, Loreto Hierro, Francisco Hernández
Hospital Universitario La Paz, Madrid, Spain

Abstract

Aim of the Study: Split-liver transplantation allows transplantation of two recipients from one deceased donor, thereby increasing pool of grafts. Long-term results of Ex vivo and In situ split in children are limited. Our aim is to compare both techniques.

Methods: We retrospectively reviewed transplanted patients with split-liver grafts over a 22-year period (2020-2022). We assessed overall patient survival and graft survival at 5- and 10-years using the Kaplan-Meier method, log-rank tests.

Main results: We included 57 children, 29 (60.5%) male and 28 (39.5%) female, with a median age of 14 months (IQR: 7.5-27.5). Ex vivo was performed in 29 (17% with cholangiography) and In situ in 28. Recipient in both groups were comparable by age, sex, BMI, diagnosis, and pediatric end-stage liver disease (PELD) score. Ischemia time was significantly longer in the Ex vivo group (346 vs 505 minutes; p=0.001) with higher peak GOT/GPT values than In situ (1829/1018 vs 1131/643; p=0.83). The post operative complications were lower in the Ex vivo group (92.9% vs 58.6%; p=0.003), with biliary complications being more frequent in both groups (27.6% Ex vivo and 46.9% In situ). There was no difference in 10-year graft and patient survival between Ex vivo and In situ (85.7% vs. 89.7%, 85.7% vs. 82.6%, respectively). The re-transplantation rate was 0 for Ex vivo and 7.1% for In situ (p=0.82).

Conclusions: In situ technique was associated with increased post-operative complications compared with Ex vivo, but both techniques had excellent long-term overall and graft survival.

HB09_SO / 18:20 – 18:25

THE ROLE OF SIMULTANEOUS LIVER-KIDNEY TRANSPLANTATION IN CHILDREN WITH DONOR-SPECIFIC ANTIBODIES. CASE-CONTROL STUDY.

Carlos Delgado-Miguel[1,2], María José Martínez-Urrutia[1], Pedro López-Pereira[1], Roberto Lobato[1], Susana Rivas[1], Ane Andrés[1], Manuel López-Santamaría[1], Francisco Hernández Oliveros[1]
[1]La Paz Children´s Hospital, Madrid, Spain. [2]Institute for Health Research IdiPAZ, La Paz University Hospital, Madrid, Spain

Abstract

Aim of the Study: Preformed donor-specific antibodies (pDSA) in kidney transplant recipients cause postoperative antibody-mediated rejection and lower long-term kidney allograft survival compared with that observed in transplanted patients without pDSAs. Our aim was to compare the long-term outcomes according to the presence of pDSA in children with simultaneous liver-kidney transplantation (SLKT).

Methods: A retrospective case-control single-center study was conducted in children who underwent SLKT between 1997-2021. We analyzed demographic, clinical and laboratory data collected pre-transplantation and postoperatively.

Main results: Eighteen patients were included, with a median age of 11.3 years (Q1-Q3:9.8-14.5 years) and median long-term follow-up of 12.4 years (Q1-Q3: 1.5-24.3 years). Fourteen patients (77.8%) had neither class I nor II pDSA, while 4 patients had pDSA prior to SLKT, with a corresponding negative crossmatch. In all patients both grafts were obtained from the same cadaveric donor, who had the same blood type as the recipient. After SLKT, pDSA became undetectable in these 4 patients, with a median time of 10 weeks after transplantation (Q1-Q3: 1-24 weeks). No differences in postoperative complications were observed between both groups (p=0.21). At long-term follow-up, the graft survival and overall survival rates were 100% and 100%, respectively, in patients with pDSAs, and 92.8% and 100% in patients without pDSAs.

Conclusions: SLKT can be considered as a successful alternative to transplant highly sensitised patients in the absence of an antibody compatible donor. Preimplantation of the liver may protect the subsequent kidney transplant by adsorption of donor HLA-specific antibodies, with no observed differences when compared to patients without pDSA.

HB10_SO / 18:25 – 18:30

COMPARISION OF DUCT TO DUCT AND ROUX EN Y HEPATICOJEJUNOSTOMY BILIARY RECONSTRUCTION TECHNIQUES IN PEDIATRIC LIVING DONOR LIVER TRANSPLANTATION

Merve Bulbul[1], Ergun Ergun[1], Elvan Onur Kirimker[2], Suat Fitoz[3], Tanil Kendirli[4], Bulent Odemis[5], Muharrem Tola[6], Kaan Karayalcin[2], Deniz Balci[2], Meltem Bingol-Kologlu[1]
[1]Ankara University, Faculty of Medicine, Department of Pediatric Surgery, Ankara, Turkey. [2]Ankara University, Faculty of Medicine, Department of General Surgery, Ankara, Turkey. [3]Ankara University, Faculty of Medicine, Department of Radiology, Pediatric Radiology, Ankara, Turkey. [4]Ankara University, Faculty of Medicine, Department of Pediatric Intensive Care, Ankara, Turkey. [5]Ankara City Hospital Department of Gastroenterology, Ankara, Turkey. [6]Ankara City Hospital Department of Invasive Radiology, Ankara, Turkey

Abstract

Aim of the Study: This study aims to assess and compare the incidence of Biliary complications(BCs) after pediatric living donor liver transplantation(LDLT) with duct-to-duct(DD) or Roux-en-Y hepaticojejunostomy(RY) techniques.

Methods: Seventy-one children undergoing LDLT in 15years were retrospectively analyzed in the study. Patients were grouped according to the applied biliary reconstruction technique, and the groups were compared using BCs as the outcome.

Main results: Biliary reconstruction was achieved with DD in 37(52.1%) patients and with RY in 34(%47.9). The overall BC rate was 14%(n = 10). Bile leakage, biliary stricture, and both bile leakage and biliary stricture were encountered in 7% (n:5), 5.6% (n:4), and 1.4% (n:1) patients, respectively. Non-anastomotic leakage and non-anastomotic stricture were encountered in 4.2%(n:3) and 1.4% (n:1)patients, respectively. 5(13.5%) patients in DD group and 5(14.7%) patients in HJ group developed BC. All patients with BC were treated based on the type of complication and the biliary reconstruction technique. All the patients with BC are alive with good graft function.The difference between DD and HJ groups regarding BC rate was not significant.There was no difference between the patients who developed BC and who did not develop BC regarding demographic data, indications, mean PELD/MELD scores, graft weight-type, GWRW, operative parameters, mean bile duct diameter, type of magnification, back wall and anterior wall reconstruction techniques, application of external or internal biliary drainage.

Conclusions: Our results show that the DD reconstruction technique can achieve similar outcomes to RY anastomosis.

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European Paediatric Surgeons' Association

24th EUPSA CONGRESS

June 7 - 10, 2023

Hyatt Regency Hotel

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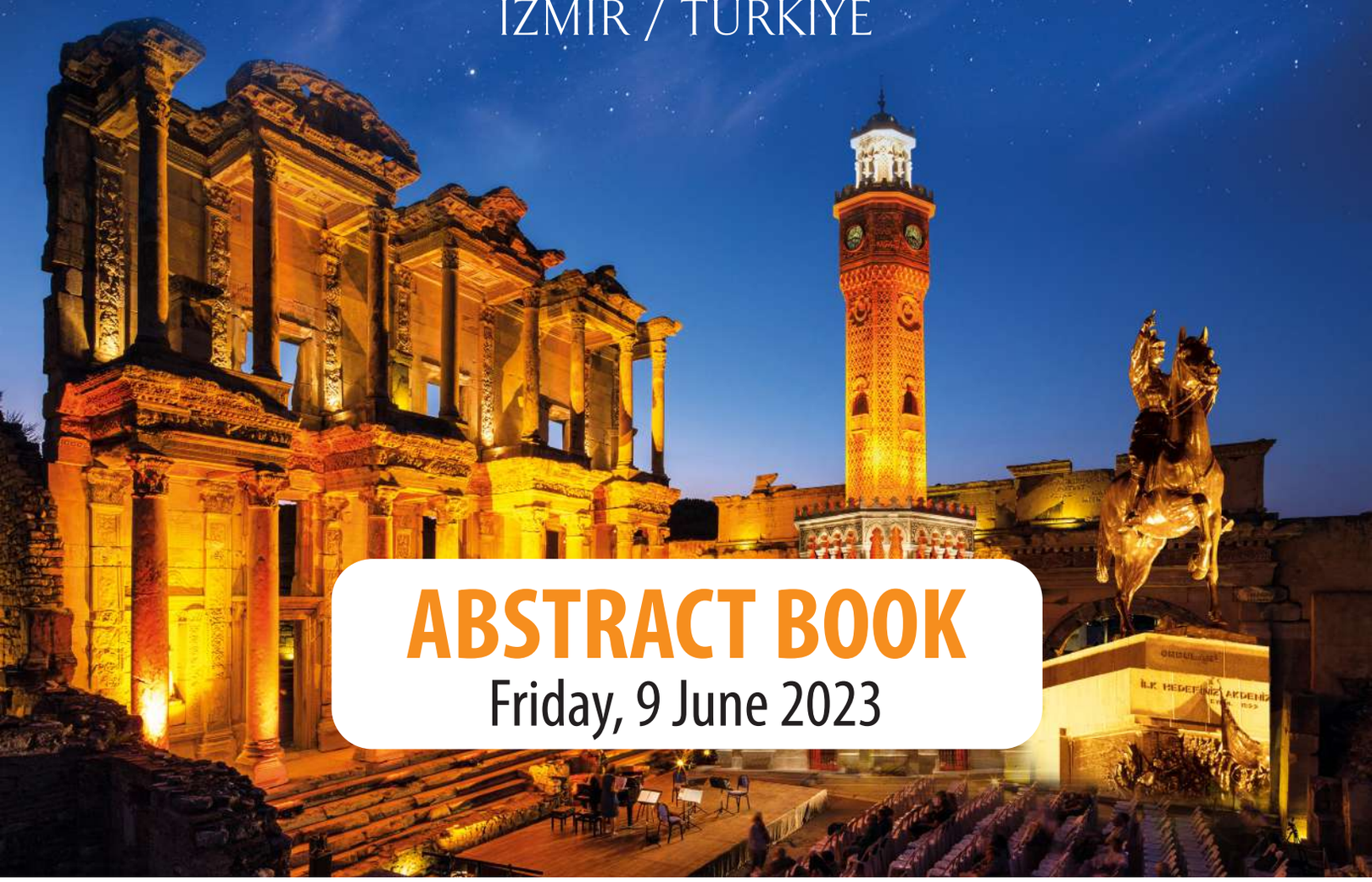

ABSTRACT BOOK

Friday, 9 June 2023

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08:30 - 10:30

Scientific Session VI

Upper Gastrointestinal
(Parallel Session)
(M1) Regency 1

Chair: Cigdem Ulukaya Durakbasa (TUR)

Giovanna Riccipetitoni (ITA)

Alexander Sterlin (GER)-TEPS

UG01_LO / 08:30 – 08:40

TRANSIENT HYPOGAMMAGLOBULINEMIA OF INFANCY AND UNCLASSIFIED SYNDROMIC IMMUNODEFIENCIES ARE HIGHLY COMMON IN ESOPHAGEAL ATRESIA PATIENTS

Hilmican Ulman[1], Ayşe Aygün[2], Deniz Çağlar[1], Zafer Dökümcü[1], Ata Erdener[1], Güzide Aksu[2], Neslihan Edeer Karaca[2], Coşkun Özcan[1], Necil Kütükçüler[2]
[1]Ege University Faculty of Medicine, Department of Pediatric Surgery, İzmir, Turkey. [2]Ege University Faculty of Medicine, Department of Pediatric Immunology, İzmir, Turkey

Abstract

Aim of the Study: Due to the high rate of post-operative sepsis and other infectious complications, a routine immunological screening protocol has been initiated since 2015 in our pediatric surgery clinic for all patients admitted with esophageal atresia (EA) and warrant a delayed definitive treatment. In our study, we aimed to evaluate the immunodeficiencies in EA patients, by comparing them to healthy age-matched controls.

Methods: As a prospective cohort study, EA patients admitted between 2015-2022, who had their definitive operation after the newborn period (>28 days of age) were included. On admission, serum concentrations of IgG, IgA, IgM, lymphocyte subset levels, C3 and C4 levels, specific IgG antibody responses against hepatitis-B, hepatitis-A, measles, varicella zoster were evaluated. The patients were age-matched with healthy controls to compare the results. If a humoral immunodeficiency was detected, intravenous immunoglobulin treatment was administered before major esophageal surgery and during follow-up.

Main Results: 31 EA patients (18M/13F) with a mean age of 13.3±9.0 months were compared to 40 age-matched healthy controls. Serum IgG levels were found to be statistically lower than controls in all age groups ($p<.05$). Transient Hypogammaglobulinemia of Infancy (THI) and Unclassified Syndromic Immunodeficiencies (USI) were found strikingly high as 29.0% and 22.5% respectively, adding up to 51.5% of EA patients.

Conclusions: This is the first study evaluating immunodeficiencies in EA patients found in the reviewed literature. More than half of EA patients that require delayed surgery have humoral immunodeficiency, so pre-operative screening and immunology referral may improve patient outcomes.

UG02_LO / 08:40 – 08:50

CAN WE DO ANYTHING ELSE BEFORE REMOVING A BUTTON BATTERY FROM THE ESOPHAGUS? HYALURONIC ACID

Isabel Bada-Bosch, María Dolores Blanco Verdú, Julio Cerdá, María Fanjul, Javier Ordoñez, Mar Tolín Hernani, Carmen Miranda, César Sánchez Sánchez
Hospital General Universitario Gregorio Marañón, Madrid, Spain

Abstract

Aim of the Study: To test the protective effect of a commercially available mixture of hyaluronic acid, chondroitin sulfate and poloxamer 407 on the damage caused by the exposure of esophageal mucosa to button batteries in animal model.

Methods: Experimental study. 60 porcine esophageal samples distributed in three groups: control (CG), exposure (EG) and exposure-protection (EPG). In EG and EPG, one CR2032 battery per sample was inserted, both were subdivided into 2h, 4h, 6h and 24h exposure subgroups, with subsequent battery removal. In EPG, the samples were irrigated with the solution 1h after battery exposure. Esophageal pH and final voltage were measured.

Main Results: pH in CG remained stable. No significant differences in pH at 1h were found between EG and EPG. In EPG, the pH of the mucosa exposed to the anode was lower than in GE at 2h (12.44 vs 11.89, p=0.203) and 4h (13.78 vs 11.77, p<0.0001). In the cathode side pH was significantly higher in EG at 2h (2.5 vs 4.11, p<0.0001), 4h (2.33 vs 4.78, p<0.0001) and 6h (2.17 vs 2.91, p<0.0001). Significant voltage reduction at 1h was found in EG compared to EPG (0.48V vs 1.08V, p=0.004).

Conclusions: Exposure to hyaluronic acid solution buffers the acidification on the side exposed to the cathode and basification on the side exposed to the anode. This effect can be maintained up to 3-5h, even after stopping its application. Our results suggest that a solution containing hyaluronic acid could be used as an esophageal protector after accidental ingestion of button batteries.

UG03_LO / 08:50 – 09:00

CHILDREN BORN WITH ESOPHAGEAL ATRESIA ARE AT RISK FOR MOTOR IMPAIRMENT IN ALL DOMAINS

Anne-Fleur R.L. van Hal[1], Sophie de Munck[1], Tabitha P.L. Zanen - van den Adel[1,2], John Vlot[1], Joost van Rosmalen[3,4], Hanneke IJsselstijn[1], Leontien Toussaint- Duyster[1,2]
[1]Department of Pediatric Surgery, Erasmus MC-Sophia Children's Hospital, Rotterdam, Netherlands. [2]Department of Orthopedics and Sports Medicine, section of Physical Therapy, Rotterdam, Netherlands. [3]Department of Biostatistics, Erasmus MC, Rotterdam, Netherlands. [4]Department of Epidemiology, Erasmus MC, Rotterdam, Netherlands

Abstract

Aim of the Study: Children born with esophageal atresia (EA) are at risk for motor function impairment throughout childhood (Harmsen, 2017). It is unclear whether this is due to one specific motor domain, or whether all domains are affected. We therefore aimed to longitudinally evaluate the domains for motor functioning at school age.

Methods: All EA patients born between November 2001 and April 2010, who were routinely seen at ages 5, 8 and 12 as part of a structured prospective longitudinal follow-up program, were included. We assessed all three domains of the Movement Assessment Battery for Children (version 1 and 2): manual dexterity, ball- and balance skills. Raw scores converted into percentile scores were classified as: normal up to and including borderline (normally expected 95%), and definitive motor problem (normally expected 5%). Outcome scores were compared with reference data using the $\chi 2$-test.

Main results: We included 54 children, who were evaluated at all three ages. Significantly more children had a definite motor problem compared to reference data on manual dexterity at the age of 8 and 12 years ($p= 0.04$, $p<0.001$, respectively), on ball skills at ages 5, 8 and 12 years (5, 12 $p<0.001$, 8 $p<0.05$) and balance skills at the age of 5 and 12 years ($p<0.001$, $p=0.04$ respectively) (Figure 1).

Conclusions: Children born with EA are at risk for persistent motor function problems, not only the gross motor functions but also on manual dexterity. Long-term evaluation should focus on the risk of growing into deficit, emphasized by the change in manual dexterity over time.

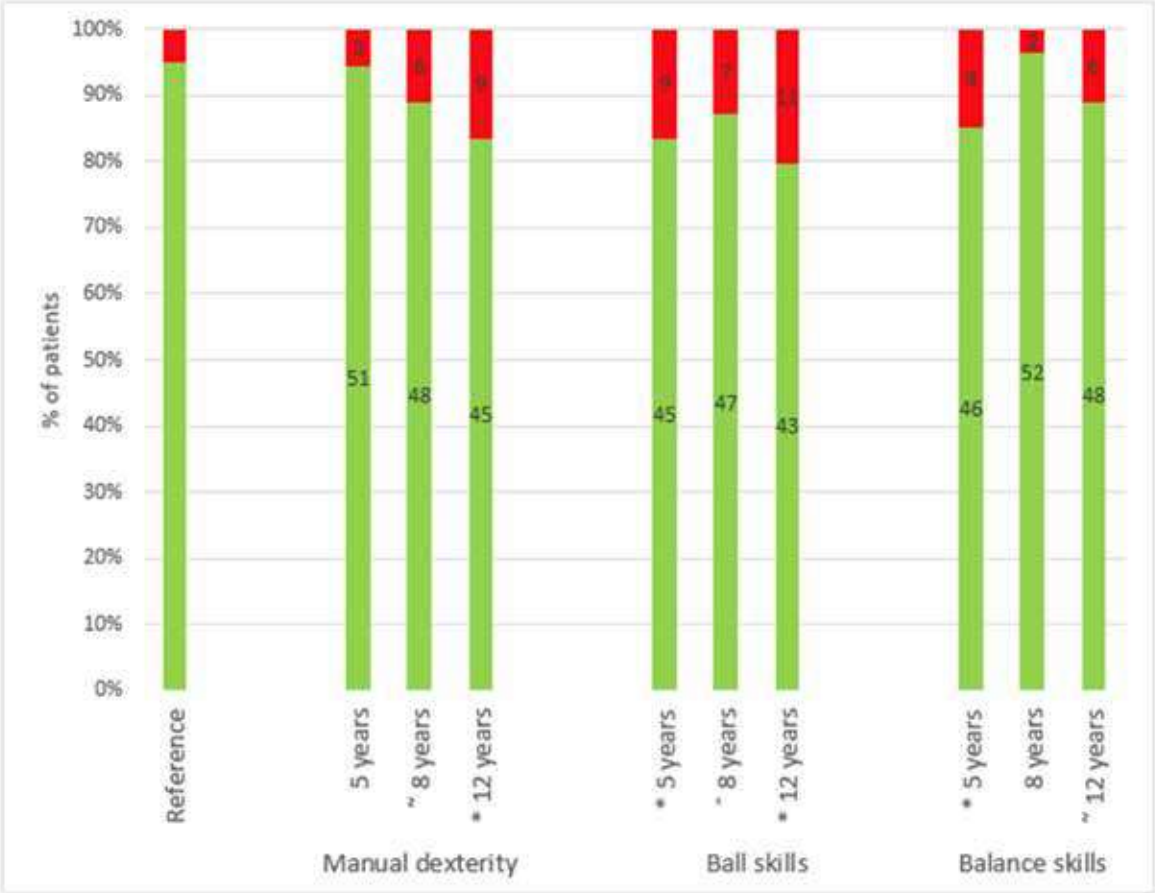

Figure 1. MABC domain scores for all patients (N=54) at ages 5, 8 and 12 years.
Normal – borderline range (>P 5, green bar) and definite motor problem (≤P 5, red bar).
* $p<0.001$, ^ $p<0.01$, ~ $p<0.05$ (difference from norm values).
Abbreviations: P = percentile, M-ABC = Movement assessment battery for children.

UG04_LO / 09:00 – 09:10

FACTORS ASSOCIATED WITH SHORT- AND LONG-TERM SURVIVAL IN ESOPHAGEAL ATRESIA WITH TRACHEOESOPHAGEAL FISTULA: A MULTI-CENTRE INTERNATIONAL DATABASE OF 708 PATIENTS

Joe Davidson[1,2], Simon Eaton[1], Aiysha Puri[2], Dominika Borselle[3], Verity Haffenden[4], Dhanya Mullassery[2], Stefano Giuliani[2,1], Simon Blackburn[2], Kate Cross[2], Joe Curry[2], Dariusz Patkowski[3], Antti Koivusalo[5], Mikko Pakarinen[5], Iain Yardley[4], Paolo De Coppi[1,2], Stavros Loukogeorgakis[1,2]
[1]UCL Great Ormond Street Institute of Child Health, London, United Kingdom. [2]Great Ormond Street Hospital for Children, London, United Kingdom. [3]Wrocław Medical University and Hospital, Wrocław, Poland. [4]Evelina London Children's Hospital, London, United Kingdom. [5]New Children's Hospital, Helsinki, Finland

Abstract

Aim of the Study: Risk stratification scores for esophageal atresia with tracheoesophageal fistula (OA-TOF) are useful to predict survival. However, single center series are limited by small patient numbers and lack generalizability. We aimed to model survival in OA-TOF using an international, multi-center database of patients.

Methods: Retrospectively collected data (2000-2022) of OA-TOF patients from 4 tertiary centers were used; a multivariable logistic regression model for survival to discharge was derived from single center data, and then validated on the whole dataset using bootstrapping. In addition, Cox regression was used to analyze determinants of longer-term survival in those infants who had survived to discharge.

Main results: Overall survival to discharge was 94% (668/708). After internal validation, survival to discharge was significantly predicted by Birthweight (aOR 0.852/100g; p=0.007), Major Cardiac Disease (lesion requiring surgery; aOR 12.8; p<0.001) or an associated Chromosomal anomaly or syndrome (aOR 5.12; p<0.001). A further 19 patients died after hospital discharge at a median 453 days [range 60-2640]. Factors associated with long-term mortality in those who had survived to discharge were: Major Renal disease (Bilateral Structural or Unilateral Structural with impaired function, aOR 11.08 p<0.001) and an associated Chromosomal/Syndromic Association (aOR 6.41 p<0.001).

Conclusions: Determinants of early and late survival may differ in OA-TOF. While low birthweight infants and those with cardiac disease are at risk of early mortality, these factors are less significant than the presence of major renal disease for those infants who survive to discharge. Chromosomal anomalies and syndromic associations remain significant determinants of survival throughout.

UG05_SO / 09:10 – 09:15

LONG-TERM MORBIDITY AND IMPORTANCE OF HEALTH-RELATED QUALITY OF LIFE IN PLANNING TRANSITION OF PATIENTS WITH ESOPHAGEAL ATRESIA TO ADULT CARE

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Abstract

Aim of the Study: To assess long-term morbidity and health-related quality of life (HRQoL) in patients born with esophageal atresia (EA) and create an evidence-based protocol for efficient transition to adult care.

Methods: EA patients aged 11 to 17 years were recruited in a tertiary centre for clinical examinations to assess long-term morbidity as presence of current symptoms: feeding difficulties, gastroesophageal reflux, respiratory disorders, chest wall/shoulder asymmetry/spine deformity and faltering growth. Pediatric Quality of Life Inventory 4.0 Generic Core Scale (PedsQL questionnaire) was applied to assess HRQoL by patient self-reports (SR) and parent-proxy reports (PR).

Main results: Twenty-one EA patients and proxy-parents were included in the study. Median age of EA patients was 13 years, 57% were males. All EA patients had Gross C type of EA and underwent ligation of tracheoesophageal fistula with primary anastomosis. Thirty-eight percent needed dilatation of anastomotic stricture. Fifty-two percent of EA patients had associated anomalies. Any current symptom was present in 86% of EA patients: feeding difficulties 33%, gastroesophageal reflux 33%, respiratory disorders 33%, chest wall/shoulder asymmetry/spine deformity 61%, faltering growth 10%. HRQoL total summery score was 86 for SR and 79 for PR (p=0.069). Significant difference was found in psychosocial functioning between SR and PR (mean: 88 vs. 80 respectively, p=0.047).

Conclusions: Long-term morbidity is present in the majority of EA patients and in conjunction with HRQoL assessment present a basis for a well-structured and standardized transition to adult services with the necessity of psychological evaluation and support.

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UG06_SO / 09:15 – 09:20

VOCAL CORD PARALYSIS AFTER REPAIR OF ESOPHAGEAL ATRESIA

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Abstract

Aim of the study: Etiology of vocal cord paralysis (VCP) and laryngeal dysfunction may be congenital or surgical trauma of recurrent and superior laryngeal nerves. We assessed the incidence, risk factors and morbidity of VCP after repair of esophageal atresia (EA).

Methods: Ethical consent was obtained. Medical records of 201 EA patients from 2000 to 2022 were reviewed for this retrospective study. Post-repair vocal cord examination (VCE) included awake nasolaryngeal fiberoscopy by otolaryngologist or laryngoscopy under spontaneous breathing anaesthesia. Before 2017 postoperative VCE was performed in symptomatic patients only, and routinely after 2017.

Main results: Overall, VCE was performed to 79 (38%) patients (52 asymptomatic), whereas 122 asymptomatic patients underwent no VCFA. VCP was diagnosed in 32 of 79 patients (right 12, left 10, bilateral 10), (symptomatic 25, asymptomatic unilateral 7) corresponding with extrapolated overall VCP incidence of 16 - 24% among 201 patients including asymptomatic ones. Ten patients (bilateral VCP 8, left VCP 2) required tracheostomy. Of 10 patients with bilateral VCP three underwent laryngotracheal expansionl surgery (left VC lateralization in 1 and laryngotracheoplasty in 2 with acquired subglottic stenosis),3 remain tracheostomy dependent, 3 are off tracheostomy, and 1 died of complications after redo esophageal reconstruction. All patients with unilateral VCP manage without tracheostomy. cervical dissection or ostomy formation was a major risk factor of VCP (Table 1).

Conclusions: Repair of EA is associated with considerable risk of VCP and associated morbidity. Cervical EA surgery significantly increased risk of VCP. Bilateral VCP may eventually require laryngotracheal expansion surgery.

Table 1 Assessed risk factors of diagnosed vocal cord paralysis (VCP) after repair of esophageal atresia (EA)

		VCP	RR (95% CI)	p
Type of EA	A (n=16) B (n=8) C (n=158) D (n=5) E (n=11) F (n=3) C vs others B, D, E vs others	2 (13%) 2 (28%) 23 (15%) 2 (40%) 3 (27%) 0 (0%)	 0.7 (0.3 – 1.7) 2.1 (0.8 – 5.3)	 0.44 0.11
Cervical dissection or ostomy (CDO)	CDO + CDO-	17/ 32 (53%) 22/169 (13%)	7.6 (3.3 – 17.3)	p <0.001
Cardiac Surgery (CS)	CS+ CS-	4 / 43 (9%) 28/158 (18%)	0.5 (0 2 – 1.4)	0.19
Spitz classification	II – III I	6 / 45 (13%) 26/156 (17%)	0.8 (0.3. – 2.0)	0.57

UG07_SO / 09:20 – 09:25

USING A DELPHI METHOD TO SELECT QUALITY INDICATORS TO EVALUATE QUALITY OF CARE FOR PATIENTS WITH ESOPHAGEAL ATRESIA

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Abstract

Aim of the study: Survival of patients with esophageal atresia (EA) is high and stable, now shifting increasing attention to optimizing care and longer-term morbidity. This study aimed to reach consensus on a quality indicator set for benchmarking EA care between hospitals, regions, or countries in a European clinical audit.

Methods: Using an online Delphi method, a panel of EA health care professionals and patient representatives rated potential outcome-, structure- and process indicators for EA care identified through systematic literature and guideline review on a nine-point Likert scale in three questionnaires. Items were included based on predefined criteria. In rounds two and three, participants were asked to select the five to ten most essential of the included indicators.

Main results: An international panel of 14 patient representatives and 71 multidisciplinary health care professionals representing 41 hospitals completed all questionnaires (response rate 81%), eventually including 22 baseline characteristics and 32 indicators. After ranking, ten indicators were prioritized by both stakeholder groups. Each stakeholder group highly prioritized one additional indicator. Following a further online vote by the other group, these were both added to the final set.

Conclusions: This study established a core indicator set of twenty-two baseline characteristics, eight outcome indicators, one structure indicator, and three process indicators for evaluating (quality of) EA care. These indicators, covering various aspects of EA care, will be thoroughly defined before implementation in the European Pediatric Surgical Audit to enable recognition of practice variation and focalize EA care improvement initiatives.

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UG08_SO / 09:25 – 09:3

DEFINING IMPORTANT OUTCOMES FOR INCLUSION IN A CORE OUTCOME SET FOR OESOPHAGEAL ATRESIA: RESULTS OF A MULTI-STAKEHOLDER DELPHI SURVEY

Nigel Hall[1,2], Nadine Teunissen[3], Paul Cullis[4], Graham Slater[5,6], Lucy Bray[7], Laura Baird[8], Alexandra Adama[9], Sarah Gorst[10], Victoria Gray[11], Laura Hopwood[11], Julia Brendel[12], Julia Faulkner[13,5], Nick Lansdale[14], Paul Losty[15], Anna-May Long[8], Adam Donne[11], Eniola Folaranmi[16], Rebecca Thursfield[11], on behalf of OCELOT study group[17]
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Abstract

Aims of the Study: Core outcome sets (COS) help to ensure outcomes that are important and relevant to stakeholders are measured and reported in healthcare research. We aimed to identify important outcomes as part of a process to develop a COS set for oesophageal atresia.

Methods: Outcomes were identified in a systematic review, focus groups, and interviews with affected families. These were subsequently scored in a two round Delphi process that involved healthcare professionals, patients, and family members. Each respondent was asked to assess the importance of each outcome on a scale of 1 (not important) to 9 (extremely important). Outcomes were ranked based on the percentage of respondents in each stakeholder group scoring them critically important (7-9). Outcomes for which >70% of respondents in at least one stakeholder group scored 7-9 are considered for inclusion in the COS.

Results: A total of 62 outcomes identified in systematic review were scored by 95 healthcare professionals and 72 patients and family members. A total of 27 outcomes were ranked as critically important (7-9) by over 70% of healthcare professional respondents and 31 by patients and family members. The top ten outcomes ranked by each stakeholder group are shown (Figure).

Conclusions: Outcomes ranked as important by both healthcare professionals and patients and family members were similar. The range of important outcomes includes those from a range of different outcome domains. These outcomes will be further refined in a multi-stakeholder group consensus meeting to identify a final COS.

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UG09_SO / 09:30 – 09:35

TELEMEDICAL INTERDISCIPLINARY CARE FOR CHILDREN WITH ESOPHAGEAL ATRESIA (TIC-PEA): PRELIMINARY ANALYSIS OF A PROSPECTIVE INTERVENTIONAL STUDY

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Abstract

Aim of the Study: Treatment of esophageal atresia (EA) is decentralized in certain countries including Germany, without means of national benchmarking. The TIC-PEA study provides a resource for professionals treating patients with EA to discuss findings, treatment plan and follow-up during their patients' first year of life. The aim of this study was to determine the impact of telementoring on patient outcome, using the number of esophageal dilatations as surrogate variable.

Methods: TIC-PEA was designed as a controlled, not-randomized multicenter interventional study. TIC-PEA patients were compared to controls from the registry of the national patient support group. Patients born 09/20 through 12/22 were included. Total patient months under observation (PM) and the number of dilatations per 100 PM were calculated as primary outcome variable.

Main results: Overall, 61 TIC-PEA patients (583 PM) and 183 controls (1323 PM) were included. The mean number of video conferences was 5 per year (mean duration 10 minutes). Both groups had a comparable mean gestational age (TIC-PEA 36 weeks, 31-42, control 37 weeks, 26-42) and birth weight (TIC-PEA 2444gr, 1375-4100, control 2546gr, 510-4020). Gross Type C was most frequent (TIC-PEA 82%, control 90%), followed by Gross Type A (TIC-PEA 13%, control 5%). Patients in the TIC-PEA group had half the rate of dilatations/ 100 PM (7.8) compared to controls (17.4).

Conclusions: Participation in the TIC-PEA study was associated with a lower rate of dilatations compared to a similar control group. These findings indicate that TIC-PEA telementoring may decrease complication rates and improve patient outcome.

UG10_SO / 09:35 – 09:40

FREQUENCY OF PATHOLOGIC FINDINGS IN FOLLOW-UP ENDOSCOPY OF ESOPHAGEAL ATRESIA IN PATIENTS WITH AND WITHOUT GASTROINTESTINAL SYMPTOMS

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Abstract

Aim of the Study: EUPSA recommends a schedule for life-long follow up of patients with esophageal atresia including a minimum of three endoscopies. One at the age of one year and two more before transition into adult care. In Germany, the follow-up plan provided by the patient organization KEKS e.V. is widely accepted. Follow-up results are collected by KEKS e.V. The aim of this study was to determine the frequency of pathological findings in endoscopy in symptomatic and asymptomatic patients.

Methods: Data was extracted from the "KEKS Nachsorgeregister" 2012-2022. Patients with esophageal atresia, who had at least one esophagoscopy were included. Macroscopic and histological esophagitis or intervention for a stricture were defined as pathologic findings. Esophagoscopies with pathologic findings were compared to endoscopies without pathologic findings. Chi² test was performed, $p< 0.05$ was considered statistically significant.

Main results: Data of 211 patients was included: in 972 follow-up examinations, 353 endoscopies were performed. The mean follow-up was 44 months. A total of 162 (46%) endoscopies were unremarkable. Stenosis was detected in 164 examinations, nine patients had macroscopic and 34 microscopic esophagitis. Biopsies were performed in 21.5% of endoscopies. Gastrointestinal symptoms were present at the time of 320 (90%) endoscopies. There was no statistically significant difference in the presence of symptoms in patients with pathological findings (92.5%) compared to those with unremarkable endoscopies (89.0%, $p=0.25$).

Conclusions: Almost half of routine follow-up endoscopies were unremarkable, the symptom load did not differ between patients with or without pathological findings. Biopsies were performed only infrequently.

UG11_SO / 09:40 – 09:45

PREDICTORS OF ESOPHAGEAL DIVERTICULUM FORMATION IN ESOPHAGEAL ATRESIA PATIENTS

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Abstract

Aim of the Study: Esophageal diverticulum (ED) is considered a rare complication of congenital esophageal atresia (EA) surgery with a reported incidence of 2-14% in literature. ED may influence long-term esophageal morbidity, however information around risk factors for the diverticula formation are scarce. Aim was to compare EA patients with diverticulum (EAD) with the remaining EA population, in order to identify characteristics peculiar to the first group that may eventually predict diverticulum formation.

Methods: We retrospectively reviewed all patients with EA/TEF followed-up at two referral centers between 2000-2021. We collected demographic data as well as EA characteristics (type, long-gap, tension at anastomosis, type of surgery, post-operative dehiscence) and need for further procedures (anti-reflux surgery, dilatation, gastrostomy) and compared the two groups by appropriate statistical analysis.

Main results: Of the 213 patients included in the study, 21 had EAD (9.8%). Demographic of the two subgroups is comparable, despite weight at birth (2120g vs 2610g, p=0,0003). Among EA characteristics, only the presence of a long gap EA is significantly different in the two subgroups (53% in EAD vs 20% in remaining EA population, p=0,002). Post operative dehiscence is the major difference between the two sub-groups, with 53% in the patients developing the diverticulum and 14% in the remainder (p<0,0001, sensitivity53%, specificity85%). Need for anti-reflux surgery also is different (47vs21%,p=0,01).

Conclusions: ED is a possible long-term complication of EA and might be considered especially in presence of low-birth-weight neonates, long-gap EA, post-operative dehiscence of the anastomosis and presence of a reflux not responding to medical therapy.

UG12_SO / 09:45 – 09:50

IMPACT OF ELECTIVE MUSCLE PARALYSIS AFTER PRIMARY ESOPHAGEAL ATRESIA REPAIR

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Abstract

Aim of the Study: Elective post-operative muscle paralysis has been adopted to decrease anastomotic complications after primary repair of esophageal atresia (EA). We evaluated the effect of elective paralysis on outcomes among children enrolled in the EUPSA Esophageal Atresia Registry (EAR).

Methods: All patients enrolled in the EAR between 2014 and 2017 and who underwent immediate primary EA repair, were included. Demographic data, associated malformations, post-operative management, complications, and general outcomes were compared between group P (elective paralysis) and group NP (no elective paralysis).

Main results: Out of 318 patients who underwent primary EA repair, 127 patients (123 type C, 3 type D, 1 type A EA) had elective paralysis, and 191 (187 type C, 3 type D, 1 type A EA) did not. Group P showed significantly lower gestational age and birth weight with higher prevalence of associated duodenal atresia and congenital diaphragmatic hernia. All patients in group P and 95% in NP received elective ventilation, but group P had a significantly longer mechanical ventilation and hospital stay. The two groups had comparable anastomotic and general complications, as well as mortality rates.

Conclusions: Following primary EA repair, elective paralysis was received by smaller and less mature patients and was associated with longer mechanical ventilation and length of hospital stay. However, it did not affect the surgical outcomes and mortality rate of primary anastomosis in EA.

UG13_SO / 09:50 – 09:55

PERORAL ENDOSCOPIC MYOTOMY IN PEDIATRIC PATIENTS ≤12 years WITH ACHALASIA: A SINGLE-CENTER EXPERIENCE IN JAPAN

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Abstract

Aim of the Study: To evaluate the postoperative efficacy and anti-reflex state of peroral endoscopic myotomy (POEM) in young children with achalasia.

Methods: Pediatric patients with achalasia aged ≤18 years who underwent POEM in our hospital between 2016 and 2021 were included and divided into two age groups; groups A (≤12 years) and B (13–18 years). The success rate (Eckardt score ≤3), endoscopic reflux finding, and anti-acid use at 1-year postoperatively were compared in each group. This study was approved by the institutional Review Board.

Main Results: Ten patients (four boys and six girls, Chicago classification type I; 5, type II; 4, unclassified; 1) were included. Mean age (years) and preoperative Eckardt score in groups A (n=4) and B (n=6) were 9.2±3.0 vs 15.6±0.6 (p=0.001) and 5.5±3.9 vs 7.2±3.7 (p=0.509), respectively. Mean operative time (min) and myotomy length (cm) were 51.3±16.6 vs 52.5±13.2 (p=0.898) and 10.8±4.6 vs 9.8±3.2 (p=0.720) in each group. There was one pneumoperitoneum in group A. The 1-year success rates were 100% in both groups. Mild esophagitis (Los Angeles classification B) was endoscopically found in one patient in each group (16.7% vs 25.0%, p=0.714), and anti-acid use were required in three patients (group A; two, group B; one) (50.0% vs 16.7%, p=0.500).

Conclusion: The POEM success rate in young children aged ≤12 years was excellent and comparable to that of adolescent patients. However, young children tended to require anti-acids at 1-year postoperatively; thus, long-term follow-up is needed.

UG14_SO / 09:55 – 10:00

GASTRO-OESOPHAGEAL IN VITRO MODELLING WITH MULTI-ORGAN ASSEMBLOIDS

Giada Benedetti[1], Lucinda Tullie[2], Brendan C Jones[1], Vivian SW Li[2], Simon Eaton[1], Paolo De Coppi[1,3], Giovanni Giuseppe Giobbe[1]
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Abstract

Aim of the Study: Gastrointestinal pathologies such as microgastria, neuromuscular disorders or weak lower esophageal sphincter may lead to gastro-esophageal reflux in paediatric patients. Long-term esophageal damage may result in esophagitis, esophageal stricture, and Barrett's esophagus. In this study, we aim to produce an in vitro assembloid of gastric and esophageal organoids, to investigate the effect of acid exposure to the upper epithelium.

Methods: Adult stem cells were derived from paediatric patients' biopsies of esophagus and stomach (fundus, body, antrum). Organoids were expanded in vitro, and each region was subsequently resuspended in a collagen I hydrogel, in a costume-designed silicon holder, in the order of esophagus-fundus-body-antrum. Gelated stripes were lifted and cultured in suspension for 10 days. The assembloid was characterized for the regional markers and function.

Main results: Organoids from the esophagus and from the three regions of the stomach were successfully isolated. These were characterized by the presence of markers of the region of origin with immunofluorescence, RT-PCR and Western blot. KRT13 marked differentiated esophageal cells, PDX1 identified antrum, and IRX3 marked body/fundus. Whole-mount 3D immunostaining and transcriptomic analysis confirmed the multi-organ assembloid increased cell differentiation and function.

Conclusions: We successfully obtain a gastro-esophageal assembloid model. Each region maintained the identity and function of origin, increasing the level of differentiation compared to standard organoid culture. This assembloid model will be useful to investigate acid secretion as well as simulate gastro-esophageal reflux disease in vitro.

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UG15_SO / 10:00 – 10:05

LONG-TERM MORBIDITY OF CONGENITAL DIAPHRAGMATIC HERNIA (CDH): PREVALENCE OF GASTROESOPHAGEAL REFLUX (GER) AND BARRETT'S ESOPHAGUS (BE) IN YOUNG ADULTS

Rebecca Pulvirenti[1], Isabel Sreeram[1], Lieke S Kamphuis[2], Rene MH Wijnen[1], Hanneke IJsselstijn[1], Johannes M Schnater[1], Manon CW Spaander[3]
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Abstract

Aim of the study: GER and BE are well-known comorbidities after CDH repair. Nonetheless, consistent evidence on the GER rate is only available for infants and children, while it is hypothesized to decrease later in life. The aims of this study were to evaluate the prevalence of GER in young adults who underwent neonatal CDH correction and assess its evolution to BE.

Methods: We included EGDS data from 2015-2022 of all participants who attended a prospective follow-up with transfer to adult gastroenterology at 17 years (n=22) and symptomatic patients who had been referred otherwise (n=8). Reflux esophagitis was graded according to the Los Angeles classification. BE was defined as columnar metaplasia and presence of goblet cells.

Main results: Thirty young adults (mean age 18.2years; 43%males) were included; 14 (47%) patients reported symptoms prior to testing and 5 (17%) were on regular antiacid treatment. EGDS showed esophagitis in 6% of patients, while histology defined metaplasia and BE in 17% and 10%, respectively. No dysplasia was detected. Abnormal endoscopic or histological findings were detected in 9/14 (64%) of patients reporting gastrointestinal symptoms. Two out of three patients with BE were already diagnosed with GER during childhood and on endoscopic surveillance.

Conclusions: Abnormal endoscopic findings resulted to be most prevalent in those patients who reported symptoms. Given our preliminary findings, including the absence of mucosal dysplasia, endoscopic surveillance might be suggested only in patients with overt symptoms. Further studies are needed to establish GER prevalence throughout life and the need for systematic examinations.

UG16_SO / 10:05-10:10

EVALUATION OF THE EFFECTIVENESS OF MOTHER MILK EXOSOME IN EXPERIMENTAL CORROSIVE ESOPHAGITIS MODEL

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Abstract

Aim of the Study: We aimed to examine the effectiveness of mother milk exosome in the treatment of corrosive esophageal burns.

Methods: A total of 32 Sprague Dawley rats were separated 4 equal groups. Rats were weighed individually before the procedure. Corrosive esophageal burn model was created with 12,5% sodium hydroxide, by a 3 French Fogarty catheter was passed through the esophagus, lowered into the stomach, and the balloon in the stomach was inflated and retracted and placed at the esophagus-cardiac junction. Group 1 was not applied to any process or treatment; Group 2 was burned, and no treatment was performed. Group 3 was burned and then 0,5 cc/day mother milk exosome extract was given for 21 days. Group 4 was not applied any process and 0,5 cc/day mother milk exosome extract was given for 21 days. All rats were weighed again and sacrificed. Biopsy samples were sent to the pathology laboratory for histopathological examination (in terms of inflammation, fibrosis, and necrosis).

Main results: A significant difference was found in the results of inflammation and fibrosis. There was a meaningful difference in terms of fibrosis between the 2nd group and 3rd group. There was weight gain in groups 1, 3 and 4. Statistical evaluations for each group were found to be significant.

Conclusions: It was observed that breast milk exosome may be effective on inflammation and fibrosis formation in the treatment of corrosive esophageal burns. This suggested that breast milk exosome reduces stricture formation due to esophageal corrosion.

UG17_SO / 10:10 – 10:15

BUILDING A MODEL FOR DAY CASE UPPER GASTROINTESTINAL SURGERY IN CHILDREN: LESSONS LEARNT OVER 7-YEAR PERIOD IN A HIGH-VOLUME UNIT

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Abstract

Aim of the Study: Laparoscopic surgery has become the standard treatment for symptomatic refractory gastro-esophageal reflux disease, achalasia, and gallstone disease. Successful upper gastro-intestinal surgery (UGIS) involves safe, minimally invasive surgery, resulting in symptom resolution, with minimal side effects. This study aims to assess the feasibility and safety of day case UGIS focusing on peri- and post-operative outcomes as a measure of success.

Methods: Data was collected from the hospital database from 2015 to 2022. Data collection included demographics, surgeon, mode of admission, length of stay and complications. Electronic records were independently scrutinized for all patients with a length of stay of more than two nights.

Main results: 66 neurologically normal patients underwent laparoscopic UGIS (25 fundoplication's, 11 Heller myotomies, 29 cholecystectomies and 1 cholecystectomy plus splenectomy) with a day case rate of 12.1%. 20 (30%) patients were discharged within 23 hours from surgery (early morning nurse-led discharge). Zero 30-day readmission was recorded. Overall, 8 (12.1%) patients had complications including failure of initial fundoplication (defined as recurrence of symptoms) in 5 (7.5%) of them, requiring a re-operation, but only 1 (1.5%) required a re-operation within 12 months of the initial procedure. Of note is a re-do fundoplication that was done as a day case with satisfactory outcome.

Conclusions: Laparoscopic UGIS in children can be performed safely as a day case in high-volume specialist centers with good outcomes. Raising the national standard for day case UGIS promotes good practice and should be the model for future commissioning.

UG18_SO / 10:15 – 10:20

The impact of intestinal lengthening in ultrashort bowel syndrome: does it make any difference?

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Abstract

Aim of the Study: to identify the effect of autologous intestinal reconstructions (AIR) on the management of ultrashort bowel syndrome (ultra-SBS).

Methods: the history of 37 patients with residual small bowel <30 cm was evaluated. All patients were dependent on parenteral nutrition (PN) with little or no tendency for enteral autonomy. All patients were observed remotely while receiving home PN and were being hospitalized timely for reevaluation or surgery. Twenty-three patients (62.2%, main) developed intestinal dilation and were eligible for autologous intestinal reconstruction (AIR). Fourteen patients (37.8%, control) didn't meet surgical criteria and were receiving standard SBS treatment without surgery. The key milestone was picked for both groups: time of AIR for the main group and 12 months of treatment for the control. We evaluated patient's nutritional status, frequency of SBS-related complications and PN-dependency before, after and at the time of the milestone. Among complications we considered central line infection/thrombosis, intestinal failure-associated liver disease, bacterial overgrowth with translocations and D-lactic acidosis.

Main results: 27 surgeries were performed in which serial transverse enteroplasty (STEP) was the procedure of choice. All patients improved their nutritional status while being of PN although operated patients showed significant difference compared to control (p=0.006). Number of central line-related complications decreased significantly long-term after surgery (p=0.012) in the main group. These patients also showed 2-fold decrease of PN-dependency (58%, p=0.023) compared to control.

Conclusions: with relatively low chance of enteral autonomy, AIR plays a significant role in the treatment of ultra-SBS by decreasing PN-dependence and reducing risk of complications.

UG19_SO / 10:20 – 10:25

I-FAB, CITRULLINE, K67 AND LGR-5 EXPRESSION COMPARING WITH THE EARLY HYSTOLOGICAL CHANGES OF SMALL INTESTINE IN MESENTERIC ISCHEMIA RAT MODEL

Olafs Volrāts[1], Karīna Goluba[1], Elga Poppela[1], Ivars Melderis[2], Marina Makrecka-Kuka[3], Una Riekstina[1], Ruta Muceniece[1], Baiba Jansone[1]
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Abstract

Aim of the Study: To investigate the consequences of early hypoxia-induced jejunal wall damage, plasma I-FABP, Citrulline, intestinal K67, Lgr-5 levels were compared with early histological small bowel changes.

Methods: Wistar Hannover male rats were subjected to 15, 30, 60, 90, 120 min ischemia (n = 7-10) ligating superior mesenteric artery and vein. Procedure - performed in accordance to EU Directive 2010/EU/63 and approved by Food and Veterinary service of Latvia No. 120/2020.Jejunum was investigated under light microscope (hematoxylin, eosin) using Chiu classification. I-FABP, citrulline - commercially available kits - fluorometric (Ex/Em 535/587 nm) and spectrophotometric (450 nm) techniques. The mRNA expression levels Ki67 and leucine-rich repeat-containing G-protein coupled receptor 5 (Lgr5) were compared between ischemia and sham tissue samples by quantitative polymerase chain reaction (qPCR).

Main results: 15 minutes: mucosal injury - from development of subepithelial (Gruenhagen`s) spaces near the apex of villus to denuded villi with exposed lamina propria and dilated capillaries. I-FABP increased from 60th minute; citrulline decreased from 90th minute (mean ± SD. $p < 0.05$ vs sham). 30 min: mRNA expression level of Lgr5 was upregulated (3,23 ± 0.17, $p < 0.05$ vs sham); 60 min (4.44 ± 0.27, $p < 0.05$ vs sham) after ligation; 90 min - returned to pre-ischemia level (1.18 ± 0.09). Ki67 expression levels remained unchanged (1.41 ± 0.37).

Conclusions: Early histological changes of the jejunal wall were observed already after 15 min of bowel hypoxia, before the increase of I-FABP, citrulline, Lgr-5 and Ki67 levels could be detected.

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UG20_SO / 10:25 – 10:30

EFFICACY OF TOTAL GASTRIC WRAPPING AS A BARIATRIC SURGICAL METHOD AND COMPARISON WITH SLEEVE GASTRECTOMY: AN EXPERIMENTAL RAT STUDY

Müge Aydınöz[1], Osman Zeki Karakuş[2], Oktay Ulusoy[1], Cansu Kural[1], Serra Sabuncu[3], Oğuz Ateş[1], Gülce Hakgüder[1], Mustafa Olguner[1], Feza Miraç Akgür[1]
[1]Dokuz Eylul University, Medical School, Department of Pediatric Surgery, İzmir, Turkey. [2]Sanko University, Medical School, Department of Pediatric Surgery, Gaziantep, Turkey. [3]Nevşehir State Hospital, Department of Pediatric Surgery, Nevşehir, Turkey

Abstract

Aim of the Study: Sleeve gastrectomy (SG) is one of the preferred surgical treatments for obesity. However, there is increased risk of gastroesophageal reflux up to 47% after SG. We aimed to investigate the effects of "Total Gastric Wrapping" (TGW) method on post-operative body weight (BW) loss and stomach volume in rats with obesity and to evaluate its effectiveness compared to the SG method.

Methods: An obesity model was created by feeding Wistar-albino rats with a high-calorie diet (Rat Diet-D12492) for 12 weeks. The rats were randomly divided into 3 groups as sham, SG and TGW and surgical procedures were performed. Post-operative BW and their stomach volumes were measured. Results were statistically analyzed and a p-value <0,05 was considered statistically significant.

Main results: The average BW went up to 385.47 g (362-415 g) from 231.05 g (214-249 g) after 12 weeks. At the postoperative 4th week, the BW decreased from an average of 386.67 g to 312.33 g (19.2%) in the SG and from an average of 385.67 g to 325.67 g (15.7%) in the TGW group. No BW change was detected in the Sham group. There was no significant difference between SG and TGW groups in post-operative BW loss. The gastric volume measurements were found to be significantly higher in the Sham group than in the SG and TGW groups ($p<0.004$).

Conclusions: TGW can be used as a reversible restrictive bariatric surgical method. The TGW method is as effective as the SG method in terms of providing BW loss in obesity.

08:30 - 10:30

Scientific Session VII

Urology-EUPSA-ESPU Session
(Parallel Session)
(M1) Regency 2

Chair: Peter Vajda (HUN)

Emillio Merlini (ITA)

UR01_LO / 08:30 – 08:40

CHALLENGES IN MANAGEMENT OF 46 XX CONGENITAL ADRENAL HYPERPLASIA REARED AS MALES INCLUDING GENDER REVERSAL POST PUBERTY.

Shilpa Sharma, Jyotsna P Viveka, Anurag Srivastava, Rakesh Chadda, Koushik S Deb, Devendra K Gupta
All India Institute of Medical Sciences, New Delhi, India

Abstract

Aim of the Study: Females with Congenital Adrenal Hyperplasia (CAH) may present late in developing countries, being reared as boys. We aimed to describe the challenges in management.

Methods: Cases records of 46XX CAH reared as boys were studied and long-term outcome assessed. Follow up was done for their mental make-up and adjustment in society.

Main results: Of 221 46XX CAH, nine presented late with severe virilization being reared as males. All were assigned male sex with removal of female adnexa. Male genitoplasty was done and hormonal supplementation with glucocorticoids and testosterone was given. Mean age at presentation was 8.5 (5 – 21) years. Staged male genitoplasty; chordee correction, male urethroplasty, and bilateral testicular prosthesis was performed. Panhysterectomy with bilateral salpingo-ophorectomy was done. At the time of male genitoplasty, the mental makeup was masculine in 8 and bigender in one. Bilateral mastectomy was performed at puberty in 7. Eight patients were satisfied with outcome of genitoplasty, one had a short-sized phallus. At follow up of 8-32 years, social adjustments were good in 7. However, two, after 8;12 years of male genitoplasty expressed a strong feminine inclination. After repeated psychiatric assessment, female genitoplasty was done for both at 22; 32 years of age. Bilateral breast implants were done for one who she got married to a man 2 years later.

Conclusions: Severe virilization in late presenting CAH patients may retain the assigned male gender, meeting the socioeconomic compulsions of society with satisfactory results. However, occasional cases may deviate from the assigned gender and need medical help.

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UR02_LO / 08:40 – 08:50

DO EXOSOMES DERIVED FROM ADIPOSE MESENCHYMAL STEM CELLS PREVENT ISCHEMIA-REPERFUSION INJURY AFTER TORSION-DETORSION IN RAT TESTES?

Fatma Bilgecan Simsek[1], Aydın Sencan[1], H. Seda Vatansever[2]
[1]Manisa Celal Bayar University, Department of Pediatric Surgery, Manisa, Turkey. [2]Manisa Celal Bayar University, Department of Histology and Embryology, Manisa, Turkey

Abstract

Aim of the Study: We investigate whether exosomes obtained from adipose mesenchymal stem cells (AMSC) have an effect on preventing experimental testicular ischemia-reperfusion (I/R) injury.

Methods: AMSCs obtained from rat adipose tissue were cultured. Characterization of cells was evaluated by immunohistochemical staining. Exosomes from AMSCs were obtained with the MiRCURY Exosome Kit. 21 prepubertal rats were divided into 3 groups. I/R model was performed by 720° testis torsion for 4 hours then reperfusion for 4 hours. In the control group (CG), only scrotal incision was performed. After detorsion, in the torsion-control group (TCG) 100µL of cell culture medium and in the torsion-treatment group (TTG) 100µL of exosome was applied to the testicular parenchyma. Finally, left orchiectomy was performed. The percentage of apoptotic cells was determined by TUNEL method and spermatogenesis evaluated by Johnsen score. The difference between groups was measured with the Kruskal-Wallis test.

Main results: In the immunohistochemical staining, CD44/CD90 were positive, CD34/CD45 were negative which bore the characterization of AMSCs. In H&E staining, the seminiferous tubule structures were deteriorated in TCG, but normal in CG and TTG. Johnsen scores were 8.64±0.39, 7.24±0.28, 8.48±0.34 in CG, TCG, TTG respectively. Apoptotic cell ratios were 11.28±5.25%, 60.58±16.68%, 17.71±8.34% in CG, TCG, TTG, respectively. In both parameters, the difference between TCG-TTG and CG-TTG was significant ($p<0.05$); the difference between CG-TTG was insignificant ($p>0.05$).

Conclusions: AMSC-derived exosomes are effective in preventing testicular I/R injury. This effect appears to occur as a result of suppression of apoptotic activity.

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UR03_LO / 08:50 – 09:00

EUROPEAN PAEDIATRIC SURGEON' ASSOCIATION ON THE ADHERENCE TO EAU/ESPU GUIDELINES IN THE MANAGEMENT OF UNDESCENDED TESTES

Ophelia Aubert[1], Hind Zaidan[2], Hanna Garnier[3], Amulya Saxena[4], Salvatore Cascio[5]
[1]Department of Pediatric Surgery, University Hospital Leipzig, Leipzig, Germany. [2]Department of Pediatric Surgery, King Hamad University Hospital, Busaiteen, Bahrain. [3]Department of Surgery and Urology for Children and Adolescents, Medical University of Gdansk, Gdansk, Poland. [4]Department of Pediatric Surgery, Chelsea Children's Hospital, Chelsea and Westminster Hospital NHS Fdn Trust, Imperial College London, London, United Kingdom. [5]Department of Paediatric Surgery, School of Medicine, University College Dublin and Children's Health Ireland at Temple Street, Dublin, Ireland

Abstract

Aim of the Study: The aim of this study was to assess the adherence to European Association of Urology (EAU)/ European Society for Paediatric Urology (ESPU) 2016 guidelines in the management of undescended testes (UDT).

Methods: An online questionnaire was sent in 2023 to members of the European Paediatric Surgeons' Association (EUPSA).

Main results: Among 126 members (51,5% EU countries, 67% tertiary referral pediatric hospital) 47% and 44% perform orchidopexy before 12 and 18 months respectively. 94% recommend conservative management of retractile testes and 57% offer close follow-up. In case of non-palpable testes, 81% favor laparoscopy and 16% ultrasonography. If a peeping testicle is identified at laparoscopy, 76% perform orchidopexy. In case of a high-testicle, a staged-procedure (70% Fowler-Stephens, 15% Shehata-technique) is preferred. If blind ending spermatic vessel are found, management is heterogenous with 30% exploring the inguinal canal and removing the testicular nubbin, 29% additionally fixing the contralateral testis and 38% ending the operation. Only 15% recommend hormonal therapy to improve fertility potential in bilateral UDT. A majority (61%) discuss removal of testis in UDT in postpubertal boys. 75% declare following EAU/ESPU guidelines. Unawareness of guidelines was the most common reason cited for non-adherence. While international guidelines have the greatest influence (70%), personal experience (49%) and institutional practice (44%) seem to play an important role (Fig.1).

Conclusions: Most recommendations of EAU/ESPU guidelines are being followed by EUPSA members, however personal and institutional practice impact decision making. Hormonal therapy in bilateral UDT and management of vanishing testes could be improved.

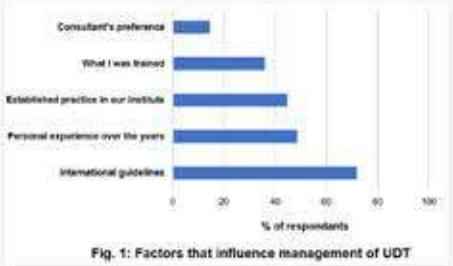

Fig. 1: Factors that influence management of UDT

UR04_SO / 09:00 – 09:05

THE CLAVIEN-DINDO CLASSIFICATION UNDERESTIMATES UNEXPECTED EVENTS IN PEDIATRIC UROLOGICAL PATIENTS

Julia Brendel, Omid Madadi-Sanjani, Joachim Kuebler, Benno Ure, Alejandro Hofmann
Department of Pediatric Surgery, Hannover Medical School, Hannover, Germany

Abstract

Aim of the Study: The Clavien-Dindo classification is validated to assess the severity of surgical adverse events. However, various other events may affect patients' clinical course. We aimed to compare events assessed according to the classical Clavien-Dindo (C-D) in an urological cohort with the results of a modified instrument (mC-D), that includes non-surgical and organizational alterations in the management of those patients.

Methods: Following ethical approval (2739-2015), all unexpected events in pediatric urological patients were prospectively assessed daily from 01/2021-12/2022. Events were graded according to C-D (surgical events) and mC-D (surgical/non-surgical events, errors, organizational problems, e.g. miscommunication or limited capacities in ICU/anesthesia), with Grade I-IIIa being minor and Grade IIIb-V being sentinel events.Fisher's exact test was used for determining correlation between variables.

Main results: C-D recorded 91 events: 18 grade I, (19.8%) *, 19 grade II (20.9%), 1 grade IIIa (1.1%), 52 grade IIIb (57.1%) and 1 IVa (1.1%). mC-D identified 168 events: 74 grade I (44.0%) *, 27 grade II (16.1%), 2 grade IIIa (1.2%), 62 grade IIIb (36.9%), 2 IVa (1.2%), 1 V (0.6%). mC-D identified statistically significant more Grade I events ($p < 0.05$). mC-D recognized ten additional Grade IIIb events, while C-D interprets these as "failure to cure". The grade V event (death) was associated with the underlying disease rather than surgery.

Conclusions: Including non-surgical and organizational alterations increases the event number by 50% in our cohort. Those additional events impair the patient's treatment and recovery. The classical C-D might underreport events in pediatric urological patients.

UR05_SO / 09:05 – 09:10

PROGNOSTIC MODEL FOR ENDOSCOPIC HIGH PRESSURE BALLOON DILATATION SUCCESS IN PRIMARY OBSTRUCTIVE MEGAURETER IN CHILDREN

Alexandra Galuzinskaya, Sergei Zorkin, Rimir Baiazitov, Dmitry Shakhnovskiy
National Medical Research Center for Children's Health, Moscow, Russian Federation

Abstract

Aim of the Study: Currently most of primary obstructive megaureter (POM) cases are treated conservatively. Endoscopic high pressure balloon dilatation (EHBD) is effective alternative for ureteral reimplantation. The aim of this study was to develop the model for prospective evaluation for EHBD in children.

Methods: From 2018 to 2022 a total of 115 children aged 1 month to 2 years (median 11 months) were treated by EHBD. Results were evaluated using ultrasonography (US) and MAG-3 renogram. Positive outcome was decrease of pelvic anteroposterior diameter and renogram drainage improvement.

Main results: Dilatation was not possible in 7 cases, treated further with ureteral reimplantation. Overall success rate was 92,5% with 96.1% rate for children under 1 year and 85,9% rate for children after 1 year of age. Three features of ureteral stenotic tract were predictive for treatment outcome. Area of stenosis before dilatation lower than 96,6% was the most predictive for good outcome (AUC 0,79; p=0.002). Stenosis diameter after dilatation more than 2,7 mm. also predicted good outcome (AUC 0,9; p=0.001). Length of stenotic tract under 1,65 mm. was the least predictive for good treatment outcome (AUC 0,80; p=0.001). Then we developed a linear logistic regression model based on these factors measured before the surgery (AUC 0.977; p<0.0001).

Conclusions: This study confirms EHBD to be effective in majority of POM cases. We identified predictors of success for EHBD. Further studies are needed to evaluate the sensitivity and specificity of the developed model in real clinical practice.

UR06_SO / 09:10 – 09:15

CLASSICAL VERSUS MECHANICAL CIRCUMCISION. INITIAL RESULTS OF A PROSPECTIVE RANDOMIZED STUDY.

Maria Dolores Blanco Verdu, Isabel Bada Bosch, Beatriz Fernandez Bautista, Ruben Ortiz Rodriguez, Laura Burgos Lucena, Jose Maria Angulo Madero, Juan Carlos De Agustin Asencio
Hospital Gregorio Marañon, Madrid, Spain

Abstract

Aim of the Study: Mechanical circumcision is an accepted method in adults; however, experience in children is limited. The aim of this study is to compare the results of mechanical circumcision with classical circumcision.

Methods: A prospective randomized study was designed. Patients aged 6-16 years with phimosis and indication for circumcision were included, excluding those with penile malformation, xerotic balanitis or reoperation. Fifty patients were randomized, 25 per branch, using the www.randomizer.at platform. Mechanical circumcision was performed with the CircCurer® device. Surgical time, intraoperative or postoperative complication, analgesic requirement, period until return to usual activities, complete stitch/staple removal and aesthetic satisfaction were analyzed.

Main results: 50 patients underwent surgery between June 2021-October 2022. No statistically significant differences were found between conventional versus mechanical circumcision in: mean age (12.4 vs 12.7 years), analgesia (3.9 vs 3.3 days), complication (intraoperative: bleeding 4% vs 13.6% p=0.06; postoperative: hematoma 8. 3% vs 14.3%), return to usual activities (4.9 vs 5.2 days), sports (19.8 vs 19.9 days), stitch/staple drop (29.6 vs 29.5 days), patient satisfaction (4.1 vs 4.2; scale 1-5), parents (4.3 vs 4.5) or surgeon (4.3 vs 4.5). The difference in favor of mechanics was significant in surgical time (19.6 vs. 10.9 minutes, p=0.0001) and asymmetry (28.6% vs. 0%, p=0.028).

Conclusions: Mechanical circumcision appears to be an easily reproducible, valid and safe procedure. In our initial experience it presented less operative time and asymmetry. However, we need to enlarge the sample number to establish more definitive conclusions.

UR07_SO / 09:15 – 09:20

ARE MEASUREMENTS OF PLASMA CREATININE USEFUL IN CHILDREN WITH SPINA BIFIDA? A 2 YEAR REVIEW OF CHILDREN ATTENDING OUR CLINIC.

Farah Mahar, Miriam Doyle, Michael Riordan, Salvatore Cascio
Children's Health Ireland at Temple Street, Dublin, Ireland

Abstract

Aim of the Study: EAU/ESPU 2019 guidelines on the management of neurogenic bladder in children recommend serial measurements of plasma creatinine. The aim of this study is to assess the utility of these recommendations.

Methods: Retrospective reviewed of blood results of the children who attended our multidisciplinary spina bifida clinic (SBC) over a 2-year period (2017-2019). Estimated GFR (eGFR) was calculated using creatinine (CReGFR - Bedside Schwartz equation 2009); where cystatin C measurements were available eGFR (CYSeGFR) was calculated according to Le Bricon et al.

Main results: 180 children were included in our analysis – 104 females; mean age 5 years. 89% (n=160) had an CReGFR of more than 90 ml/min/1.73m2; 74% (n=86) based on CYSeGFR. Stage 2 chronic kidney disease (eGFR of 60-89 ml/min/1.73 m2) was seen in 11% (n=20) of patients based on CReGFR and 22% (n=26) using CYSeGFR. None of the patients had Stage 3A CKD based on CReGFR; 3% of patients had CKD Stage 3B based on CYSeGFR (n=4) - no cases of CKD 3B or higher were identified in the cohort.

Conclusions: Performing plasma creatinine in isolation was not sufficient to identify children at risk of CKD. Height/length was required to allow eGFR calculation. We recommend using creatinine and cystatin C measurement combined with anthropometry at 1; 5; 10 and 15 years of age. More frequent serial monitoring should focus on children at high risk of CKD, e.g. –with a known underlying renal anomaly or with significant radiological abnormalities on ultrasound or nuclear imaging.

UR08_SO / 09:20 – 09:25

MANAGEMENT OF VESICOURETERAL REFLUX IN NEUROGENIC BLADDER: A PROSPECTIVE 6 YEAR FOLLOW UP STUDY

Salvatore Cascio, Elena Vinchesi, Miriam Doyle
Children's Health Ireland at Temple Street, Dublin, Ireland

Abstract

Aim of the Study: Secondary Vesicoureteral reflux (VUR) may be present in up to a third of children with neurogenic bladder. The aim of this study is to analyse the outcome of VUR in patients with neurogenic bladder secondary to spina bifida.

Methods: All renal investigations and management of children with spina bifida and neurogenic bladder from 01-2016 to 12-2021 were collected in our database. Patients were regularly followed up in our fortnightly spina bifida clinic with clinical examination, ultrasound of the urinary tract and video-urodynamics (VUD).

Main results: A total of 82 patients from birth were included in our database. VUR was identified in 12(14%) patients at first 3 monthly VUD and was bilateral in 6 patients (18 ureters). VUR was dilating (3-5) in 12 ureters and non dilating (Grade 1-2) in 6 ureters. VUR resolved after commencing anticholinergic and Clean Intermittent Catheterization (CIC) in 5 ureters (28%), after total endoscopic management (TEM=Botox +/- STING) in 6 (33%) ureters. In one patient bilateral VUR was downgraded and is waiting a repeat TEM, while another patient TEM failed and underwent detrusorectomy due to worsening renal function. One patient has been unfit for a general anaesthetic due to comorbidity/large defect and the last patient is waiting a follow up VUD.

Conclusions: In approximately a third (28%) of patients VUR resolved after starting anticholinergic and CIC and in another third with TEM. Only one patient (8%) required detrusorectomy due to deterioration of renal function and progression of VUR.

UR09_SO / 09:25 – 09:30

PSYCHOSOCIAL AND PSYCHOSEXUAL ADJUSTMENT IN ADULT PATIENTS WITH CLASSIC BLADDER EXSTROPHY: LONG-TERM OUTCOMES OF A HIGH-VOLUME TERTIARY REFERRAL CENTER.

Irene Paraboschi[1], Michele Gnech[1], Erika Adalgisa De Marco[1], Dario Guido Minoli[1], Gianantonio Manzoni[1], Waifro Rigamonti[2], Massimo Di Grazia[3], Alfredo Berrettini[1]
[1]Department of Pediatric Urology, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milano, Italy. [2]Section of Pediatric Urology, Urology Unit, Department of Oncological and Surgical Sciences, University Hospital of Padoa, Padova, Italy. [3]AUSL Romagna - Infermi Hospital, Rimini, Italy

Abstract

Aim of the study: To examine long-term psychosocial and psychosexual outcomes of adult patients with classic bladder exstrophy (BE).

Methods: The validated Sexrelation Evaluation Schedule Assessment MOnitoring (SESAMO) questionnaire was used to assess the psychosocial and psychosexual adjustment of adult BE patients. Section I investigated domains common to all patients, section II singles, section III couples. Z-scores were calculated for each item and compared in relation to patients' gender, relationship status, and the voiding technique used to empty the bladder.

Main results: A total of 33 (F:M12:21; singles: couples11:22) BE patients were enrolled in the study at a median age of 39(32-47) years. The results of the questionnaire showed mild to moderate dysfunctions in all the domains investigated, with no significant differences between the different voiding techniques used to empty the bladder. Lower z-scores were recorded for psychosexual identity (z-score: -1.282), areas of pleasure (z-score:-0.915) and desire (z-score:-0.583); singles for relational attitude (z-score:-1.751) and imaginative eroticism (z-score:-0.806); couples for extramarital sexuality (z-score:-1.175) and communicativeness sexual sphere (z-score:-0.524). Overall women performed significantly worse than men regarding psychosexual identity (p-value:<0.0001) and sphere of pleasure (p-value:<0.001), single women on present masturbation (p-value:<0.05), single men on relational attitude (p-value: <0.05), coupled women on present masturbation (p-value:<0.05), coupled men on sexual intercourses (p-value:<0.01).

Conclusions: Several psychosocial and psychosexual outcomes were affected in BE adults, regardless of the voiding technique used to empty the bladder. A long-term psychosexuological follow-up is required to help them cope with their past medical experience and actual clinical condition.

UR10_SO / 09:30 – 09:35

THE USE OF VIRTUAL REALITY DISTRACTION THERAPY IN PAEDIATRIC UROLOGY OFFICE PROCEDURES: A FEASABILITY STUDY

Hazem Mosa, Joanne Parr, Azad Mathur, Milind Kulkarni, Ravindar Anbarasan
Jenny Lind Children's Hospital, Norwich, United Kingdom

Abstract

Aim of the Study: Different distraction techniques have been used in anxious paediatric patients. Virtual reality (VR) is a promising technology to achieve this reliably. we aimed to evaluate the feasibility of VR use to reduce anxiety and pain during paediatric urology office procedures.

Methods: The use of a VR headset (Dr.VR Junior) was offered to all patients aged 5 and above requiring a paediatric urology procedure between July 2022 and January 2023 at a tertiary paediatric urology center. Anxiety and pain scores, measured on a Wong-Baker Faces scale, were collected pre and post procedure. A student t-test was used to compare anxiety reduction in active vs passive VR experiences.

Main results: 20 patients were offered the use of VR. 7 patients declined VR. 13 children (age range: 5–15 years) agreed to participate (table 1). 6 patients chose a passive VR experience while 7 chose an active experience. 84% (11/13) showed a reduction in anxiety scores, 16% (2/13) had no change in score. 30% (4/13) showed a reduction in pain scores. 30% (4/13) did not experience pain pre or post procedure and 40% (5/13) had no change in pain scores. There was no significant difference between active vs passive VR (P= 0.42). simulator sickness was not observed in any patients.

Conclusions: VR distraction therapy is a safe, practical, and feasible technique to alleviate anxiety in children undergoing office paediatric urology procedures.

Procedure	Number (13)
Urodynamics	4
Urethral catheter insertion	7
Hypospadias dressing	1
Penile wound debridement	1
Procedures where VR was used	

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UR11_SO / 09:35 – 09:40

Internet health resources on nocturnal enuresis – a readability, quality, and accuracy analysis

Adrian Chi Heng Fung[1], Mattew Hon Lam Lee[2], Jessie Ling Leung[1], Ivy Hau Yee Chan[1], Kenneth Kak Yuen Wong[1]
[1]Department of Surgery, School of Clinical Medicine, Li Ka Shing Faculty of Medicine, The University of Hong Kong, Hong Kong, Hong Kong. [2]Department of Paediatrics & Adolescent Medicine, Queen Mary Hospital, Hong Kong, Hong Kong

Abstract

Aim of the study: Nocturnal enuresis (NE) is a common yet quality of life-limiting condition. The quality of internet health-related information varies greatly and is largely unregulated. With this study, a readability, quality, and accuracy evaluation on the health information on NE is carried out.

Method: A questionnaire was administered to parents and patients with NE to determine their use of the internet. The first 30 websites returned by the most popular search engines were assessed for readability using the Gunning-Fog, SMOG index and Dale-Chall score; for quality using the DISCERN score and for accuracy compared to ICCS guidelines by three pediatric urologists and nephrologists.

Results: 30 websites were assessed and classified into five categories: professional (n = 13), non-profit (n = 8), commercial (n = 4), government (n = 3), and other (n = 2). Comprehension of the information was considered difficult to public with a mean Gunning-Fog, SMOG index and Dale-Chall score of 12.1+/-4.3, 14.1+/-4.3 and 8.1+/-1.3 respectively. Mean summed DISCERN score was 41+/-11.6 out of 75. Only 7 (23%) websites were considered of good quality (DISCERN score > 50). Mean accuracy score of the websites was 3.2+/- 0.6 out of 5. Commercial websites were of the poorest quality and accuracy. Websites generally lacked references and information regarding treatment risks and mechanisms.

Conclusions: Online information about NE exists for parents; however, most websites are of suboptimal quality, readability, and accuracy. Paediatric surgeons should be aware of parents' health information-seeking behavior and be proactive in guiding parents identify high-quality resources.

UR12_SO / 09:40 – 09:45

IS A CHECK CYSTOSCOPY NEEDED FOLLOWING POSTERIOR URETHRAL VALVES RESECTION?

Somita Sarkar, Irene Paraboschi, Joanna Clothier, Pankaj Mishra, Massimo Garriboli
Evelina London Children's Hospital, London, United Kingdom

Abstract

Aim of the Study: While valve resection is unanimously accepted as the gold standard treatment for boys born with posterior urethral valves (PUV), the follow up protocol varies among different centres. To prove the complete resection of the valves some authors advocate the need of post-resection micturating cystourethrogram, others limit the follow up to a clinical, sonographic and/or serological improvements. Others suggest a second look (check cystoscopy). We follow the latter, in our unit boys undergo a second cystoscopic examination. We aimed to ascertain the rate of re-resection.

Methods: We retrospectively reviewed all the case notes of boys who had PUV resection at our institution between 2008-2021. Patients are treated with cold knife resection followed by a re-look cystoscopy at an interval of a few months. Data collected included demographics and their requirement for further valve ablations.

Main results: Files of 261 boys were who underwent valve resection were reviewed; median age at time of primary valve resection was 92 days (range 1- 6261). 224 boys had a documented relook cystoscopy for which the median interval time was 4 months after the first resection. In 94 of the 224 boys (42%) residual valves requiring further resection were identified.

Conclusions: From the data of the analysed cohort of boys undergoing PUV resection, a second resection is required in a significant number. In order to prevent worsening bladder dysfunction and renal loss we would, therefore, advocate the need for a systematic second look in their follow up, regardless of the clinical/radiological improvement.

UR13_SO / 09:45 – 09:50

PRENATAL PREDICTORS OF POSTNATAL RENAL OUTCOMES OF FETUSES WITH MEGACYSTIS UNDERGOING VESICOAMNIOTIC SHUNT PLACEMENT: A SINGLE-CENTRE EXPERIENCE.

Irene Paraboschi[1], Michele Gnech[1], Erika Adalgisa De Marco[1], Dario Guido Minoli[1], Veronica Accurti[2], Fulvia Pampo[2], Mariana Catalano[2], Valentina Esposito[2], Valentina Capone[3], Francesca Taroni[3], Giovanni Montini[3], Simona Boito[2], Nicola Persico[2], Gianantonio Manzoni[1], Alfredo Berrettini[1]
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Abstract

Aim of the study: To identify prenatal predictors of postnatal renal outcomes of fetuses with megacystis undergoing vesico-amniotic shunt placement (VAS) in utero.

Methods: Retrospective unicentric cohort study of fetuses with megacystis undergoing VAS placement in utero. Maternal and fetal demographic data and ultrasound parameters were compared between fetuses who preserve good renal outcomes (Group A) and those who developed an impaired kidney function (Group B) as defined by perinatal death or eGFR < 60 mL/min/1.73m^2 at the last follow-up.

Main results: 21 fetuses with megacystis underwent VAS placement in our center at a median gestational age of 20.5 (18.3 - 27.2) weeks. In a median follow-up period of 2.8 (1.8-5.1) years, 5 (23.8%) patients preserved a good kidney function (CKD 1: n=4; CKD: n=1) while the large majority (n=16; 76.2%) experienced adverse renal outcomes (perinatal deaths: n=3; CKD 3a: n=1; CKD 3b: n=4; CKD 4: n=2; CKD 5: n=6). Of the maternal and fetal demographic data and ultrasound findings investigated, the amniotic fluid volume measured at the time of the procedure was the only parameter that was significantly different between the two cohorts of patients (single deepest vertical pocket: 3.8 vs 2.2; p-value:<0.01; amniotic fluid index: 12.0 vs 3.6; p-value:<0.05).

Conclusions: A reduced amniotic fluid volume was associated with adverse renal outcomes in fetuses with megacystis undergoing VAS placement. Further studies are required to establish the proper timing of fetal surgery and whether fetal procedures performed with a normal amniotic fluid volume could maximize postnatal renal outcomes.

UR14_SO / 09:50 – 09:55

FEMINIZING GENITOPLASTY IN PEDIATRIC CONGENITAL ADRENAL HYPERPLASIA PATIENTS: CLINICAL OUTCOMES AND EVALUATION OF RISK FACTORS FOR COMPLICATIONS

Şeref Selçuk Kılıç, Önder Özden, Kamuran Tutuş, Selcan Türker Çolak, Murat Alkan, Recep Tuncer
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Abstract

Aim of the Study: In congenital adrenal hyperplasia, accumulation of androgens induces virilization in the genitourinary system in girls, and feminizing genitoplasty is one of the treatment method in these patients. We aimed to evaluate the clinical outcomes and risk factors for complications of girls with congenital adrenal hyperplasia (CAH) who underwent feminizing genitoplasty.

Methods: The data of 61 patients who underwent feminizing genitoplasty with the diagnosis of CAH between 2007-2022 were analyzed retrospectively. To identify the variables influencing the development of complications following feminizing genitoplasty, statistical analysis was conducted.

Main results: The median operative age of the patients was 5 (2-16) years and median length of common canal was 30 (5-80) millimeters. As a surgery method, cut-back was applied to 5 (8.1%), modified Passerini-Glazel to 13 (21.4%) and partial urogenital mobilization to 43 (70.5%) patients. As long-term complications, urethro-vaginal fistula developed in 5 individuals (8.1%), vaginal orifice stenosis in 14 patients (22.9%), and vaginal orifice closure in 1 patient (1.6%). There was no difference between the groups with and without complications in terms of length of common canal, age of surgery and surgical method (p=0.3, p=0.09, p=0.8). One patient underwent urethro-vaginal fistula repair and 14 patients underwent vaginal dilatation. The median follow-up period of the patients was 48 (2-138) months.

Conclusions: In our study group, vaginal stenosis was the most common complication in feminizing genitoplasty. The length of the common canal, the age of surgery, and the type of surgery had no effect on the development of complication.

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UR15_SO / 09:55 – 10:00

A 20-YEAR, SINGLE-CENTRE EXPERIENCE OF URINARY DIVERSION: COMPARISONS OF OUTCOMES BETWEEN VESICOSTOMY, LOOP AND END URETEROSTOMIES.

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Abstract

Aim of the Study: Urinary diversion is an invaluable tool in the management of urinary tract pathologies. Several techniques are available to achieve diversion, with a variety of factors influencing which is ultimately selected.

Methods: We compared three diversion techniques; loop ureterostomy (n=17), end ureterostomy (n=11) and vesicostomy (n=35) in children, over a 20-year period. We aimed to evaluate outcomes, in terms of achieving improvement in either kidney function or renal structural parameters on USS, as well as complication rates.

Main results: Patients were followed-up for an average of 2.7yrs (0.5 – 16yrs).
Improvement in kidney function was deemed to have been achieved when pre-diversion elevated creatine levels were normalized at follow-up post-diversion. This occurred in significantly more patients having undergone loop or end ureterostomy (42% and 66% respectively) than with vesicostomy (15%). Furthermore, while average drop in creatinine was 258 and 67 in loop and end groups, respectively, average improvement in creatinine was minimal in the vesicostomy group (16).
Pre- and post-diversion USS characteristics were compared between groups (table1). No statistically significant differences were found, although end ureterostomies were noted to induce improvement in all three categories in a greater percentage of patients than loop ureterostomies and vesicostomies.
There were significantly more complications encountered over the course of follow-up in the vesicostomy group (49%) than in either loop (14%) or end (7%) ureterostomy groups, with complications including stenosis, prolapse and infection.

Conclusions: We conclude that ureterostomy of either kind result in better outcomes in the paediatric population, both in terms of improvement in kidney function and complication profile.

UR16_SO / 10:00 – 10:05

THE EVIDENCE BEHIND HIGH PRESSURE ENDOSCOPIC BALLOON DILATATION OF PRIMARY OBSTRUCTIVE MEGAURETER - A SYSTEMATIC REVIEW AND META-ANALYSIS OF THE LITERATURE

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[3]Childrens Health Ireland at Temple Street, Dublin, Ireland

Abstract

Aim of the Study: High Pressure Endoscopic Balloon Dilatation (HPBD) has been shown as a safe, effective treatment of primary obstructive megaureter (POM). Success ranges from 58% to 100%. This study aims to systematically review the literature to assess the outcomes, complications, and requirements for JJ stenting of HPBD.

Methods: An electronic search of Pubmed, Medline, Embase and Cochrane library was conducted up to October 2022. Studies were selected if they presented post operative outcome data. Success of balloon dilatation treatment was declared if there was an improvement or resolution of obstruction on follow up ultrasound and/or drainage on diuretic renogram. Failure of treatment was defined as progression of upper tract obstruction requiring ureteric reimplantation. Secondary outcomes included intra and post-operative complications, requirement for JJ stenting and length of follow up.

Main results: 10 retrospective studies involving 250 children were included. Using a random effects meta-analysis, the overall success rate was 87%, 95% confidence interval (81%, 92%). A test for heterogeneity between studies was not statistically significant (p-value > 0.05). Routine post dilatation insertion of an indwelling JJ stent was performed in 8 studies. The complications observed were febrile UTIs, transient haematuria and stent displacement. Median follow up ranged from 2 months to 14 years.

Conclusions: HPBD is a safe, successful treatment option for POM, although all evidence to date is level IV. Long term follow up into adolescence is required to ensure resolution. Randomised controlled trials comparing HPBD to other treatment modalities are needed in order to provide level I/II evidence.

UR17_SO / 10:05 – 10:10

TRENDS IN MANAGEMENT OF FETUSES WITH SUSPECTED LOWER URINARY TRACT OBSTRUCTION: HIGH-RISK FETAL AND PEDIATRIC CENTER EXPERIENCE IN AN UNIVERSAL-ACCESS-TO-CARE-SYSTEM

Juliane Richter[1,2], Shiri Shinar[3], Hayley Good[4], Fabian Doktor[5,6], Jin Kyu Kim[1,7], Joana Dos Santos[1], Natasha Brownrigg[1], Michael Chua[1,8], Armando Lorenzo[1,7], Mandy Rickard[1], Tim Van Mieghem[3]
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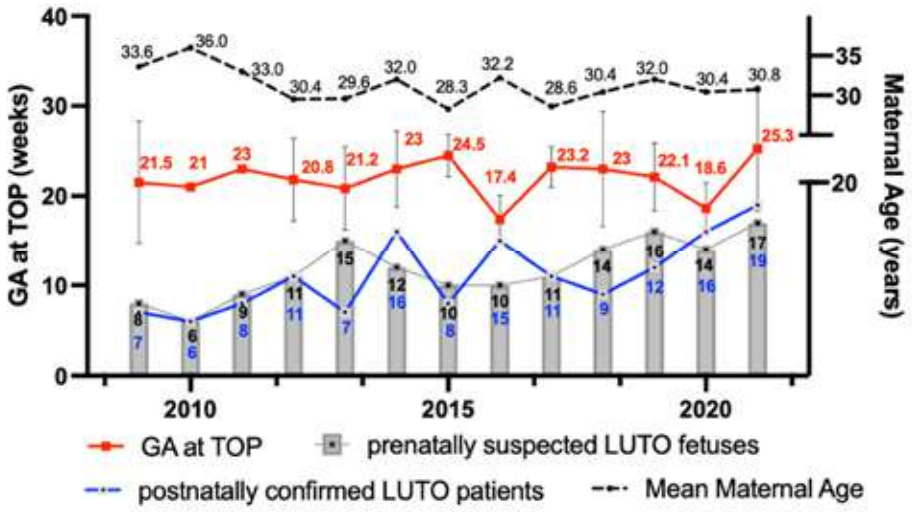
Abstract

Aim of the Study: Patients with lower urinary tract obstruction (LUTO) experience high morbidity and mortality associated with the development of chronic kidney disease. The prenatal detection rate for LUTO is less than 50%, with late or missed diagnosis leading to delayed management and long-term sequelae. We aimed to explore trends of prenatal management and determine if similar trends were noted for the same time postnatally.

Methods: A prenatal LUTO database from 2009-2021 was reviewed at a high-risk-fetal-center, capturing maternal and gestational age (GA), performed investigations and terminations. Time series analysis using autocorrelation was performed to investigate time trend changes for prenatally suspected and postnatally confirmed LUTO.

Main results: 160 fetuses with suspected LUTO were identified, including 70 terminations. No significant time trend was found when evaluating the correlation between time periods, prenatal suspected and postnatal confirmed LUTO cases (Durbin-Watson [DW]=1.4, p=0.06 and DW=2.6, p=0.8, respectively). GA at referral was 18.9±3.9 and 25.2±6.6 weeks for TOP and continued pregnancies (p<0.0001). GA at initial US was earlier in terminated fetuses compared to continued (19.1±1.7 weeks vs. 25.5±3.3 weeks, p<0.0001). While postnatal presentations remained higher, the number of suspected LUTO fetuses and terminations remained stable over time (p=0.75, p=0.61), as were genetic testing, GA at termination and maternal age (Figure 1).

Conclusions: This study demonstrated that more severe cases are referred earlier and undergo more terminations. No trend was detected between time and prenatal suspected or postnatal confirmed LUTO, highlighting the need for further studies to better delineate factors that can increase prenatal detection.


GA at TOP (weeks)
Maternal Age (years)
40
30
20
10
0
35
30
20
2010
2015
2020
33.6
36.0
33.0
30.4
29.6
32.0
28.3
32.2
28.6
30.4
32.0
30.4
30.8
21.5
21
23
20.8
21.2
23
24.5
17.4
23.2
23
22.1
18.6
25.3
GA at TOP
prenatally suspected LUTO fetuses
postnatally confirmed LUTO patients
Mean Maternal Age

UR18_SO / 10:10 – 10:15

PROXIMAL HYPOSPADIAS REPAIR: ONE-STAGE VS TWO-STAGE SURGERY

Marko Bencic[1,2], Borko Stojanovic[1,2], Marta Bizic[1,2], Miroslav Djordjevic[1,2]
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Abstract

Aim of the Study: Severe hypospadias still presents a big challenge for surgical reconstruction, due to significant rate of complications. We compared outcomes of one and two-stage repair of proximal hypospadias.

Methods: From January 2015 to June 2022, 56 patients with penoscrotal or scrotal hypospadias underwent surgical reconstruction. Mean age was 16 months (ranged from 12 to 28 months). One-stage urethroplasty was performed in 36 patients by combined buccal mucosa graft and longitudinal island penile skin flap (Group I). Group II includes 20 cases of two-staged urethroplasty. In the first stage chordee was corrected by using buccal mucosa or skin graft, which is tubularized in the second stage to finish urethroplasty.

Main results: Follow-up ranged from 3 to 92 months. Good aesthetic and functional results were achieved in both groups. An average of 1.2 procedures were done in Group I, and 3 procedures in Group II, including repair of complications. A significant difference between groups in urethral complications was not registered. Urethral fistula and stricture developed in 2 and 2 cases (11%) of Group I, and 2 and 1 cases (15%) of Group II. A total of 6 patients from group II (30%) developed re-curvature after first stage, due to retraction of the graft and scar formation, which required excision of scars and penile shaft reconstruction. Re-curvature developed in 2 patients (5.5%) from Group I.

Conclusions: Both one-stage and two-stage repair of severe hypospadias have satisfactory outcomes. However, two-stage surgery results in significantly higher rate of re-curvature, which requires additional surgical procedures.

UR19_SO / 10:15 – 10:20

EVIDENCE FOR INVOLVEMENT OF AQP2 IN FERTILITY DEVELOPMENT OF CRYPTORCHID TESTIS

Faruk Hadziselimovic[1], Gilvydas Verkauskas[2], Michael B. Stadler[3,4]
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Abstract

Aim of the Study: Aquaporins transport water and solutes across membranes. AQP2 and AQP9 are expressed in Leydig cells, round, and elongated spermatids. The regulation of AQPs in the male reproductive tract is controlled by many factors, including androgens and oestrogens. In boys with cryptorchidism, prepubertal hypogonadotropic hypogonadism induces suboptimal expression of ASZ1, PIWIL, and CFTR. The abrogated expression of these genes leads to transposon reactivation, and ultimately, infertility. Here we report evidence suggesting a novel role of AQP2 in cryptorchid testis.

Methods: Testicular biopsies from bilateral cryptorchid boys were processed for histological examination and RNA profiling using the Illumina system. The absence or presence of Ad spermatogonia distinguishes high and low infertility risk patients (HIR/LIR). HIR patients were randomized for treatment either with surgery and GnRHa or surgery only.

Main Results: AQP2 expression is lower in HIR than in LIR samples, (0.08 HIR, 0.24 LIR: reads per kilobase of transcript, per million mapped reads (RPKM); log2 fold-changes (log2FC): -2.25; false discovery rate (FDR): 0.015. Following GnRHa treatment expression increases to 0.41 RPKM; log2FC: +1.04; FDR: 0.03. Furthermore, GnRHa stimulates AQP4-AS1 (+1.68 log2FC; FDR: 0.0005) expression and downregulates AQP1 and AQP11.

Conclusions: We observe that the testicular expression of AQP2, and AQP4-AS1 in samples from cryptorchid HIR patients is regulated by LH and testosterone. Our finding associates aquaporins with the development of Ad spermatogonia and fertility outcome in cryptorchid males and possible synergistic effects of cystic fibrosis transmembrane conductance regulator with AQP2 together with AQP4-AS1.

11:00 - 12:30

Scientific Session VIII

Thoracic (Parallel Session)

(M1) Regency 1

Chair: Nazia Khen-Dunlop (FRA)

Benno URE (GER)

TH01_LO / 11:00 – 11:10

DYNAMIC IMAGING GRADE OF SWALLOWING TOXICITY (DIGEST) IN CHILDREN WITH ESOPHAGEAL ATRESIA

Numan Demir[1], Begüm Pişiren[2], Selen Serel Arslan[1], Özlem Boybeyi[2], Tutku Soyer[2]
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Abstract

Aim of the Study: The Dynamic Imaging Grade of Swallowing Toxicity Scale (DIGEST) was developed to evaluate the safety, efficiency, and overall pharyngeal swallowing performance in patients with dysphagia. Although, various swallowing dysfunction are encountered in children with esophageal atresia (EA), oropharyngeal dysphagia poses risk for aspiration. Therefore, a retrospective study was performed to evaluate the safety and efficacy of swallowing by using DIGEST score in children with EA.

Methods: Thirty-nine patients with EA included in the study. The demographic features, respiratory problems, results and outcomes of surgical treatment were evaluated. The videofluoroscopic evaluation of swallowing (VFSE) investigated for both airway protection and bolus residuals at the level of vallecula, posterior pharyngeal wall and pyriform sinus at liquid and pudding consistencies. The penetration-aspiration scale (PAS) was used to define penetration and aspiration severity, and DIGEST was used to evaluate safety (DIGESTs), efficiency (DIGESTe), and overall pharyngeal swallowing performance (DIGESTt).

Results: The median age of the patients were 13 months (7-39 months), and male to female ratio was 25:14. 67% of patients were type-C EA and 61% of them has associated anomalies. 38% of patients had aspiration (PAS=6-8) in liquids and 10% in pudding consistency. Life threatening/profound swallowing dysfunction in DIGESTe (DIGEST=4) was seen in 13% (n=5) of patients. 40% of EA patients showed severe problems in DIGESTt. There was a significant strong correlation with PAS and all DIGEST scores (p=0.001, r=0.954).

Conclusions: DIGEST is a valid and reliable tool to define the efficacy and safety of swallowing in children with EA.

TH02_LO / 11:10 – 11:20

BIAS IN THE PRENATAL LUNG MEASUREMENTS IN FETAL CONGENITAL DIAPHRAGMATIC HERNIA WITH INTRAUTERINE GROWTH RESTRICTION

Emrah Aydin[1], Narmina Khanmammadova[1], Patricia Burns[2], Foong Yen-Lim[2], Mounira Habli[2], Jose Peiro[2]
[1]Tekirdağ Namık Kemal University, Tekirdağ, Turkey. [2]Cincinnati Children's Hospital Medical Center, Cincinnati, USA

Abstract

Aim of the Study: Intrauterine growth restriction (IUGR) is the failure of a fetus to reach its growth potential generated by maternal or placental causes. Fetal head growth is usually preserved in that situation producing a potential discordance between head and body size. Herein, we aim to find if the prenatal ultrasound measurements obtained for evaluation of pulmonary development in congenital diaphragmatic hernia (CDH) are affected by IUGR.

Methods: A retrospective chart review (IRB#2017-6361) was performed on all prenatally diagnosed CDH patients from 2007 to 2016. Data collected was focused on patient demographics, fetal and neonatal anthropometric measurements, and fetal lung parameters. Fetal growth was assessed by the curves based on US data by Olsen et al. and by Peleg et al.

Main results: Of 147 CDH patients, 19 (12.9%) patients diagnosed with IUGR prior to 30th gestational week while there were 20 (13.6%) patients after 30th gestational week. Patients with IUGR and the O/E LHR less than 25% had better survival rates both to discharge and to date compared to non IUGR group (p=0.226, OR 2.25 95% CI 0.60-1.08 and p=0.175, OR 2.40 95% CI 0.66-1.17, respectively). Moreover, the ECMO need of the patients who had IUGR and O/E LHR less than 25% was significantly less than the patients without IUGR (38.5% vs 80.0%, p=0.005)

Conclusions: This study suggests that the intrauterine measurements to predict pulmonary hypoplasia in CDH patients using O/E LHR may not be applicable or generalizable to patients affected by growth restriction.

TH03_LO / 11:20 – 11:30

HEALTH-RELATED QUALITY OF LIFE IN ADULT CONGENITAL DIAPHRAGMATIC HERNIA SURVIVORS: THE SIDE OF CARING WE SHOULD NOT FORGET

Rebecca Pulvirenti[1], Ulrike Kramer[2], Lieke Kamphuis[3], Rene MH Wijnen[1], André B Rietman[4], Hanneke IJsselstijn[1]
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Abstract

Aim of the study: Patients born with a congenital diaphragmatic hernia (CDH) are at higher risk of long-term physical and psychosocial impairment, which has hardly been evaluated in young adults. Therefore, the aim of this study was to investigate multiple mental quality of life (QoL)-related aspects in young adult CDH survivors and to assess potential risk factors for poor QoL.

Methods: Patients with CDH born between 1989-2001 were recruited to join a prospective cross-sectional observational cohort study. Perinatal and clinical data were retrieved from medical records and during structured interviews. Patients were asked to complete four questionnaires assessing QoL (RAND-36), fatigue (FSS), emotional and behavioral problems (ASR), and participation in daily life (IPA). Descriptive and inferential statistical analyses were performed.

Main results: We included 61 patients (mean age of 23.75 years; 52% males, 82% left-CDH; 34% ECMO). Pain and general health were the only RAND-36 domains that differed from normal ($p<0.001$), although physical and mental QoL component scores resulted to be in line with the normal population. Overall, 23 (37%) patients reported fatigue, which was scored as severe (score > 5.1) in 10 (16%) of them. Referring to emotional and behavioral problems, internalizing was the most affected domain. Participation and autonomy were significantly impaired ($p<0.001$; Figure 1).

Conclusions: Psychosocial behavior and QoL should not be underestimated in CDH patients. Psychologic support to improve coping strategies should be considered in young adults with CDH. Future studies should focus on cardiorespiratory rehabilitation programs and their effect on QoL and participation.

TH04_LO / 11:30 – 11:40

INNOVATIVE COMPLEX APPROACH FOR TREATMENT OF POSTOPERATIVE BRONCHOPLEURAL FISTULA IN CHILDHOOD

Nikola Kartulev, Yanko Pahnev, Zdravka Antonova, Nadezhda Tolekova, Angelina Vlahova, Velichka Oparanova, Hristo Shivachev
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Abstract

Aim of the Study: We demonstrate our protocol for using a synthetic bronchial blocker for treatment of a postoperative bronchopleural fistula (BPF) in childhood.

Methods: 71 children operated for different pulmonary diseases manifested postoperative BPF. 38 of them underwent endoscopic occlusion of BPF. A rigid and flexible bronchoscopy are used for placing a synthetic bronchial blocker. The blocker then is removed several weeks after application. The diagnostics and postoperative follow-up are based on clinical examination, imaging, and spirometry if applicable.

Main results: 71 children showed postoperative air leakage. In 33(46.48%) of them the leakage persisted for 4-7 days and have resolved spontaneously without any further treatment. 38(53.52%) children underwent postoperative bronchoscopy with application of a synthetic blocker. The blocker is applied 1 to 9 days from the onset of the leakage and removed 20 to 42 days after application. 2(5.26%) children received subsequent pulmonary resections. All patients show normal physical development in the follow-up period of 3 years. In the follow-up period the group of children with bronchial occlusion shows less residual morphological changes on CT-scans, compared to the group with resectional surgery.

Conclusions: The temporary use of a synthetic blocker for BPF, placed with rigid bronchoscopy is fully compliant with the principles of low tissue trauma. Applying different types of bronchial blockers is easy and minimally invasive method, which limits the air leakage effectively. That modality eliminates the necessity of further extensive surgery and large volume lung resections. It leads to accelerated healing.

TH05_LO / 11:40 – 11:50

ESOPHAGEAL ATRESIA ASSOCIATED WITH CONGENITAL DUODENAL OBSTRUCTION: A NATIONAL REGISTRY EVALUATION

Cigdem Ulukaya Durakbasa[1], Tutku Soyer[2], Huseyin Ilhan[3], Mustafa Onur Oztan[4], Osman Uzunlu[5], Binali Firinci[6], Rahsan Ozcan[7], Akgun Oral[8], Ilhan Ciftci[9], Esra Ozcakir[10], Ibrahim Akkoyun[11], Dogus Caliskan[12], Onder Ozen[13], Cengiz Gul[14], Coskun Ozcan[15], Ayse Parlak[16], Emrah Aydin[17]
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Abstract

Aim of the study: Coexistent congenital duodenal obstruction (CDO) and esophageal atresia (EA) is known to have significant morbidity and mortality. Management strategies are not well-defined for this association. We aimed to evaluate the relevant data of our national EA registry.

Methods: A database search was done for the years 2015-2022.

Main Results: Among 857 EA patients, 31 (3.6%) had CDO. The mean birth weight was 2110 (± 468) g. Twenty-six (84%) had Type C EA. CDO type was "atresia" in 15, "annular pancreas" in 13, "stenosis" in two and "web" in one. CDO diagnosis was delayed in 10 (32%) babies for a median of 7.5 (1-109) days. Diagnosis for esophageal pathologies was delayed in additional two. Other anomalies were detected in 27 (87%) patients. VACTERL-H was present in 15 (48%), ARM in 10 (32%), a "major" cardiac malformation in six (19%) and Trisomy-21 in three (10%). One died without undergoing any surgery. Of the remaining 18 patients without a delayed diagnosis, 6 underwent triple repair for TEF, EA and CDO, and 3 for TEF and CDO in the same session. A staged repair was planned in the remaining nine. Fifteen (48%) patients received a gastrostomy, the indication was long-gap EA in eight. Twenty-five (77%) patients survived. The cause of mortality was major cardiac malformations (n=3) and sepsis (n=3).

Conclusions: DA associated with EA is a complex problem. Delayed diagnosis is common. Management strategies regarding single stage repairs or gastrostomy insertions vary notably depending on the patient characteristics and institutional preferences.

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European Paediatric Surgeons' Association

TH06_LO / 11:50 – 12:00

INCREASED MUSCULOSKELETAL DEFORMITIES AND DECREASED THORACIC MOTILITY IN CHILDREN AFTER OPEN TEF/EA REPAIR – A REALTIME-MRI STUDY

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Abstract

Aim of the Study: Musculoskeletal deformities and pulmonary morbidity are common in children after esophageal atresia (EA) repair. This study aims to assess morphological and functional postoperative changes after open or minimally invasive (MIS) approach compared to healthy controls by thoracic real-time MRI. This novel technique provides ultrafast, high-quality images during spontaneous breathing, without sedation even in young children.

Methods: Children aged 3-18 years were prospectively examined with MRI at 3T. Musculoskeletal deformities, thoracic motility, and static thoracic cross-sectional areas (CSA) at three different levels, as well as dynamic right-to-left ratio of CSA of hemithoraces during deep breathing were evaluated.

Main results: 72 children (41 open, 8 MIS, 23 controls) were recruited. Mean age at examination was lower in MIS (6.8±2.8) than open (10.4±4.0) and control (10.8±3.5) patients ($p<0.05$). In the EA group, rib fusions (76%) and scoliosis (15%) were found after thoracotomy, but not after MIS. Mean right-to-left ratio of CSA were lower after thoracotomy compared to MIS and controls ($p<0.05$), indicating decreased thoracic motility and impaired thorax development. This was significantly aggravated by an increasing number of thoracotomies. Mean right-to-left ratio of CSA in MIS patients did not differ from controls.

Conclusions: For the first time, morphological changes and thoracic motility after EA repair were visualized by dynamic real-time MRI. Children after open repair showed more musculoskeletal deformities, decreased right-sided thoracic motility and development compared to MIS and controls. Our study emphasizes that the musculoskeletal morbidity following thoracotomy in infancy is high.

Fig. 1: Rib fusion (circled) 4 years after open repair (A). Realtime-MRI investigation 17 years after open (B) and 6 years after MIS repair (C).

TH07_SO / 12:00 – 12:05

OUTCOMES OF PATIENTS UNDERGOING INITIAL ESOPHAGEAL ATRESIA REPAIR IN HIGH-VOLUME CENTRES ARE SUPERIOR TO THE ONES REFERRED AFTER UNSUCCESSFUL OPERATIONS

Marianna Scuglia[1,2], Laura Valfré[3], Joseph R Davidson[1], Stavros Loukogeorgakis[1,4], Joseph I Curry[4], Pietro Bagolan[3,5], Andrea Conforti[3], Paolo De Coppi[1,2,4]
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Abstract

Aim of the Study: Esophageal atresia (OA) repair is challenging procedure associated with severe complications. Failure of initial management can lead to worse outcomes. Our aim is to analyze the management and outcomes of patients referred to 2 tertiary centres after failed initial repair.

Methods: Retrospective study of all consecutive patients with OA treated over the last 20 years at 2 large volume centres. Patients were divided into two groups based on whether they were referred after failed initial surgery (S) or at diagnosis (D). Groups were compared for type of OA, associated anomalies, number, and type of surgeries required, and age at definitive repair.

Main results: During the study period 519 patients with OA were treated. 68 (13%) were referred after unsuccessful operations, of those 24 were referred for recurrent trachea-esophageal fistula, 36 for failed repair, 1 for esophageal perforation, and 7 for strictures. 56% had long gap OA. S patients required 4 surgeries (mean), compared to 1.19 (mean) in D (p 0.0001). Six patients underwent esophageal anastomosis, 23 required traction techniques (4 Foker, 19 Kimura), 19 esophageal replacements (15 gastric, 1 jejunal, 3 colonic transpositions). Significant differences were found in the age of the definitive repair [S: 515.5 (1-2404), D: 53.7 (1-2744) mean; p 0.00001].

Conclusions: Unsuccessful initial repair of OA increased the prevalence of complications, the number of required surgeries, and delayed the age of definitive repair. Although the patency of the digestive tract can be re-established, primary repair in a high-volume centre seems to ameliorate OA patients' outcomes.

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Hyatt Regency Hotel IZMIR / TURKIYE
European Paediatric Surgeons' Association

TH08_SO / 12:05 – 12:10

CHEST TUBE DRAINAGE WITH INTRAPLEURAL FIBRINOLYITC THERAPY VERSUS VIDEO-ASSISTED THORACOSCOPIC SURGERY FOR THE TREATMENT OF EMPYEMA IN CHILDREN: A META-ANALYSIS

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Abstract

Aim of the Study: The optimal management of pleural empyema (PE) in children remains controversial. This study aimed to compare complications, effectiveness, and clinical outcomes of chest tube drainage (CTD) with intrapleural fibrinolytic therapy (IPFT) versus video-assisted thoracoscopic surgery (VATS) for the treatment of pediatric PE.

Methods: A systematic literature search was conducted using MEDLINE®, Embase®, CENTRAL and CINAHL® databases following PRISMA guidelines. Statistical meta-analysis was performed using a random-effect model. Odds ratios (OR) and mean differences (MD) with 95% confidence intervals are presented.I^2 values were used to assess study heterogeneity.

Main Results: Eighteen studies were included, comprising 6628 children with PE [4127 (62.3%) IPFT,2501 (37.7%) VATS]. Pooled estimates showed no differences in overall complications [OR:1.09 (0.7-1.7); P=0.69; I^2=18%] and mortality [OR:6.59 (0.33-130.98); P=0.22] between IPFT and VATS. There were no differences in need for ICU admission [OR:1.45 (0.96-2.18); P=0.08; I^2=79%], mechanical ventilation [OR:1.07 (0.76-1.52); P=0.70; I^2=31%] and length of oxygen support [MD:0.18 (-0.55-0.91) days; P=0.62; I^2=0%]. Duration of CTD and fever was longer after IPFT (**Fig.1A+B**), but similar for analgesic [MD: -0.22 (-2.39-1.96) days; P=0.85; I^2=62%] and IV antibiotic usage [MD:3.78 (0.62-6.94) days; P=0.05; I2=0%]. There were no differences in postinterventional [MD:0.86 (-0.31-2.86) days; P=0.15; I^2=86%] and overall length of stay [MD:0.53 (-0.79-1.85) days; P=0.43; I^2=86%]. Failure and reintervention rates were higher after IPFT (**Fig.1C+D**), but readmission rates [OR:0.31 (0.06-1.61); P=0.16; I^2=0%] and total costs [MD:267.35 (-954.99-1489.68) US$; P=0.67; I^2=96%] were similar.

Conclusions: IPFT and VATS are equivalent for treatment of pediatric PE in terms of complication rates and most clinical outcome measures, including length of stay, readmissions and costs. However, VATS is associated with a lower reintervention rate, shorter duration of CTD and fever.

TH09_SO / 12:10 – 12:15

ABDOMINAL WALL MUSCLE WEAKNESS OUTCOMES AFTER SPLIT ABDOMINAL WALL MUSCLE FLAP REPAIR OF LARGE CONGENITAL DIAPHRAGMATIC HERNIAS

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Abstract

Aim of the Study: Split Abdominal Wall Muscle Flap (SAWMF) is a technique to repair large defects in Congenital Diaphragmatic Hernia (CDH). A possible objection to this intervention could be any associated abdominal muscle weakness. The aim is to analyze the evolution of abdominal muscle wall weakness.

Methods: Retrospective review of CDH repaired by SAWMF from 2004 to 2022.

Main results: Seventeen neonates of 140 CDH patients (12,1%) had a repair using SAWMF. Five were female and 12 males. Mean gestational age and birth weight were 35.2±3.3 weeks and 2503±779g. Two CDH defects were right sided and 15 left sided. Mean LHR was 0.97±0.4. Eight patients (42%) were prenatally treated by tracheal occlusion. 94% of the flaps were used for primary closure and one to repair a recurrence. Two patients experienced recurrence at 2 months and 6 years. Abdominal muscle wall weakness was present in the form of a bulge. Median time to resolution was 12 months (P25:6m - P75:18m), 53% resolved in the first 12 months and 76% in the first 24 months. Only one patient (5.8%) required abdominoplasty, his flap had not only internal oblique muscle and transverse abdominis but included abdominis rectus muscle. Mean follow-up was 8.7 years (SD 6.7) and no patient died during this time.

Conclusions: Abdominal muscular weakness after a split abdominal wall muscle flap repair is not a limitation for its realization. These concerns about abdominal wall weakness might not be necessary given that it is asymptomatic, and the majority present a prompt spontaneous resolution.

TH10_SO / 12:15 – 12:20

ENDURING EFFECTS OF PATCHING THE DIAPHRAGM: A LONG-TERM PROSPECTIVE STUDY IN HIGH-RISK CONGENITAL DIAPHRAGMATIC HERNIA

Laura Valfre, Francesca Silvestri, Alessandra Di Pede, Irma Capolupo, Lucia Aite, Francesca Bevilacqua, Barbara Daniela Iacobelli, Pietro Bagolan, Annbella Braguglia, Andrea Conforti
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Abstract

Aim of the Study: Higher survival rate in congenital diaphragmatic hernia (CDH) infants had led to increase late morbidity. CDH Study Group showed that diaphragmatic defect size is the only independent risk factor related to early mortality. Nonetheless, a clear correlation between diaphragmatic defect size and late morbidity, although suspected, is not yet been proved. Our aim was to evaluate the role of patch repair (proxy of diaphragmatic defects size) on long term morbidity.

Methods: Between 2012 to 2022, all high risk CDH infants treated at our Institution and survived to discharge were enrolled in a multidisciplinary outpatient clinic part of a longitudinal prospective study. For present analysis, follow-up assessments were evaluated at 2, 5 and 8-year of life. Patients were grouped based on patch repair. Auxological, neurodevelopmental, gastro-esophageal, pulmonary, orthopedic outcomes were evaluated, as well as recurrence, intestinal obstruction, and late pulmonary hypertension.

Main results: 185 patients were treated, 129 out of 136 survivors (95%) entered present study and prospectively evaluated. Patched infants progressively amended auxological gap [2yBMI: 14.5(13.7-15.6)vs15.3(14.4-16.2), p 0.04; 5yBMI: 13.5(13-14.6)vs15(14-16), p0.1; 8YBMI: 14.9(11.8-18.10)vs15.6(14.8-16.5), p0.2], and neurodevelomental tests [2Y:35%vs15%,p0.02, 5Y:14%vs12%,p0.7; 8Y:33%vs12%, p0.2], while persisting GERD [2Y: 62%vs34%,p0.03; 5Y: 38%vs12%,p0.02; 8Y:42%vs9%, p0.02] and chest wall deformities [2Y:67%vs32%,p0.007; 5Y:86%vs29%,p0.0001; 8Y:83%vs32%,p0.005]. Recurrence rate was similarly [2Y:17%vs7%, p0.14, 5Y:5%vs2%, p0.5, 8Y: -], as intestinal obstruction rate [2Y:3%vs15%, p0.17; 5Y:55%vs2%, p0,5; 8Y:8%vs0, p0.3]. Late PPHN was persistent in patched patients: 2Y:10%vs0%, p0.6, 5Y:10%vs0%, p0.08; 8Y:25%vs0%, p0.01

Conclusions: patch repair correlates with higher morbidity at mid and long-term follow-up, increasing the need for closer follow-up to prevent late sequalae.

TH11_SO / 12:20 – 12:25

THE CEREBELLUM IN CHILDREN BORN WITH CONGENITAL DIAPHRAGMATIC HERNIA – INVOLVED IN IMPAIRED NEURODEVELOPMENT?

Sophie de Munck[1], Nina CJ Peters[2], Leontien Toussaint -Duyster[1,3], Maayke Hunfeld[1], Hanneke IJsselstijn[1], Suzan CM Cochius - den Otter[1], André B Rietman[1,4]
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Abstract

Aim of the Study: Survivors of congenital diaphragmatic hernia (CDH) are at risk for neurodevelopmental impairments. In the search for risk factors, focus is broadening to prenatal brain development. Recently, smaller transcerebellar diameters (TCD) were demonstrated in fetuses diagnosed with CDH (van der Veeken, 2008), yet the relationship with outcome is still unknown. We aimed to study the association between prenatal TCD and long-term motor and cognitive outcomes that are at least partially mediated by cerebellar functions.

Methods: We included all children born with CDH (2007-2014) with TCD measured between GA 29-32 weeks and who visited our follow-up program at age eight. The Movement Assessment Battery for Children was used to assess manual dexterity, ball and balance skills, and the Wechsler Intelligence Scale for Children (III/V) to assess processing speed.

Main results: We included 35 children. Mean z-score TCD: 0.13 (-0.22 – 0.47, p=0.46 difference from z=0, reference curve Verburg, 2008). Mean z-score manual dexterity -0.22 (95% CI -0.68 – 0.23, p=0.33), ball skills -0.43 (-0.90 – 0.03, p=0.07), balance skills -0.74 (-1.16 – -0.33, p<0.001), processing speed -0.11 (-0.42 – 0.21, p=0.50). Univariable regression analysis revealed no significant association between TCD and outcome z-scores.

Conclusions: As the involvement of the cerebellum in motor and cognitive functions in CDH is still underexposed, this was a first step to investigate its role in the neurodevelopment of this population. TCD in our cohort fell within normal range, yet more specific markers like cerebellar blood flow and volumetric measurements (e.g., by MRI) are needed to gain insight, intervene, and improve outcomes.

TH12_SO / 12:25 – 12:30

FACTORS AFFECTING INFLAMMATORY CHANGES IN CONGENITAL PULMONARY MALFORMATIONS

Andrea Zulli[1], Francesca Tocchioni[2], Chiara Oreglio[1], Chiara Caporalini[3], Antonino Morabito[2], Francesco Morini[4]
[1]Department of NEUROFARBA, University of Florence, Florence, Italy. [2]Department of Pediatric Surgery, Meyer Children's Hospital IRCCS, Florence, Italy. [3]Pathology Unit, Meyer Children's Hospital IRCCS, Florence, Italy. [4]Department of Neonatal Surgery, Meyer Children's Hospital IRCCS, Florence, Italy

Abstract

Aim of the Study: Patients with CPM may present inflammatory changes within the malformation. However, little is known about factors influencing them. The aim of this study was to evaluate if type of anomaly and age at surgery may affect inflammatory changes in CPM.

Methods: Patients with CPM who underwent surgical resection between January 1st, 2005, and December 31st, 2021 were included. Histology was analyzed by a dedicated pathologist. The grade of inflammation was defined with a purpose-made score including type and extent of inflammation ranging from 0 (no inflammation) to 5 (acute inflammation any location: interstitial, bronchial, alveolar). The association of type of CPM and age at surgery with grade of inflammation was analyzed.

Main results: A total of 105 patients with CPM were collected, 52 had congenital pulmonary airways malformations (CPAM), 28 bronchopulmonary sequestrations (BPS, 11 hybrid lesions), and 25 congenital lobar emphysema (CLE). Ninety-one patients had inflammatory changes. Mean (SD) inflammation score was 2.1 (1.5), 1.2 (0.9), and 1.3 (1.5) in CPAM, BPS, and CLE (ANOVA p value<0.01). Age at operation was significantly related to the grade of inflammation ($r^2=0.1357$, $p<0.0001$). Accordingly, patients below 6 months of age had a significantly lower mean (SD) grade of inflammation [1.4 (1.0) vs 2.0 (1.4), $p<0.02$].

Conclusions: CPM often present with inflammatory changes. Grade of inflammatory changes significantly correlates with type of anomaly, with CPAM having the highest grade, and age at surgery. These findings support early resection in patients with CPM, especially CPAM.

13:30 - 14:30

Poster Presentation Session 8

Urology III / Hepatobiliary

(M2) Studio 1+2

Chair: Irene Paraboschi (ITA)

Martin Metzelder (AUT)

UR25_PO / 13:30 – 13:35

PREVENTION OF URETHROCUTANEOUS FISTULA IN HYPOSPADIAS REPAIR – ROLE OF PLATELET RICH FIBRIN PATCH

Muhammad Sharif, Sadaf Abbas, Malik Asad Munir, Kashif Bashir, Hafiz Muhammad Arif, Azwa Janjua
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Abstract

Aim of the Study: To compare the urethrocutaneous fistula rate in hypospadias repair for anterior and mid penile hypospadias repair with and without autologous platelet rich fibrin patch.

Methods: After taking ethical approval and informed consent, a randomized controlled trial was conducted. Patients were divided in two groups (A & B) by using lottery method. All patients with anterior and mid penile hypospadias fulfilling the inclusion criteria, were included. In all patients double dartos hypospadias repair was done. In group A autologous platelet rich fibrin patch was not applied while in group B autologous platelet rich fibrin patch was used. Both groups were compared for urethrocutaneous fistula as primary outcome and meatal stenosis and infection as secondary outcome. Data was analyzed by using SPSS.26.0.0. and chi square was applied to compare both groups taking P value 0.05 as statistically significant.

Main results: Total 76 patients with anterior and middle hypospadias were included in the study, with 38 in each group. Eight patients (21.1%) in group A (without autologous platelet rich fibrin patch) and only two patients (5.3%) in group B (with autologous platelet rich fibrin patch) developed urethrocutaneous fistula with statistically significant p value 0.042. Meatal stenosis was observed in ten patients (26.3%) in group A while in group B only four patients (10.5%) with a p value 0.07. No infection was observed in both groups.

Conclusions: We conclude 'that the use of Autologous platelet rich fibrin patch reduces the urethrocutaneous fistula in anterior and mid penile hypospadias repair.

UR26_PO / 13:35 – 13:40

FEWER KNOTS IN CIRCUMCISION ARE ASSOCIATED WİTH LESS POSTOPERATIVE PAIN: A RETROSPECTIVE COMPARATIVE STUDY

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Abstract

Aim of the study: Our aim in this study was to investigate the effect of the number of sutures placed during circumcision on postoperative pain, infection, bleeding amount, and analgesic need in children.

Methods: Totally 715 patients' records were analyzed. The patients were randomly divided into three groups according to the number of knots used during the surgical procedure: Group 1 (8 sutures), group 2 (6 sutures), and group 3 (4 sutures). The patients were evaluated in terms of whether they needed analgesics in the postoperative period (1-hour), bleeding status, and whether this bleeding needed re-intervention.

Main results: The average age of the participants in the study was 4.06±2.51 years, and the average weight was 18.66±7.07 kg. The number of participants who needed analgesia for the first hour after the operation was 66.8%. The median value of the postoperative pain scale was 5 (range: 1-9), those with pain scale of 5-9 were 65.5%. There was no significant difference between the groups in terms of age, weight, development of infection, and bleeding ($p>0.05$). Analgesia was needed in 88.7% of those in group 1, 69.9% of those in group 2, 21.6% of those in group 3 ($p<0.001$). A score (MPOS) of 5 or higher was found in 86.8% of those in group 1, 71% of those in group 2, and 18.6% of those in group 3 ($p<0.001$).

Conclusions: Our study showed that group 3 achieved lower pain scores, less analgesic consumption, and lower agitation scores after circumcision compared to other groups.

UR27_PO / 13:40 – 13:45

A CHALLENGING PROBLEM IN PEDIATRIC UROLOGY; POSTERIOR URETRAL TRAUMA; EVALUATION OF 17 CASES

Bilge Başaran[1], Gökhan Demirtaş[2], Süleyman Tagci[2], Bilge Karabulut[2], H.Tuğrul Tiryaki[2]
[1]Ankara City Hospital Pediatric Surgery Clinic, Ankara, Turkey. [2]Ankara City Hospital Pediatric Urology Clinic, Ankara, Turkey

Abstract

Aim of the Study: Posterior urethral trauma is a rare type of trauma that is difficult to treat in children. In our study, it was aimed to share the treatment experience of pediatric patients with posterior urethra trauma of our clinic, which is a tertiary referral center.

Methods: The results of 17 cases with posterior urethral trauma treated between 2010 and 2022 were retrospectively reviewed from hospital records.

Main results: Two girls and 15 boys aged 4-19 (mean 9.94+5.10 years) were evaluated. While there were only pelvic fractures in 7 cases, it was accompanied by femur fracture in 4 cases, diaphragm rupture and brain trauma in 1 case, bowel perforation in 1 case, and rectal injury in 4 cases. Only 2 cases were found to have urethral trauma without fracture detection. Endoscopic approach in 2 cases, resection anastomosis with perineal approach in 12 cases, abdominoperineal approach in 3 cases. Continence was achieved in a total of 15 cases. Erection problem is present in 2 of our cases. While a single intervention was sufficient in three cases (two girls and a boy), recurrent urethroplasty was required in the remaining 5 cases, healing after urethroplasty in 4 cases, and more than one dilatation surgery was required in 5 cases.

Conclusions: Posterior urethral trauma is an entity that requires repetitive interventions in children, can be treated mostly with perineal approach, and incontinence and erection problems can be seen in long-term follow-ups, which should be kept in mind. Multidisciplinary follow-up and adult andrology support are also important in long-term follow-ups.

UR28_PO / 13:45 – 13:50

THE EFFECT OF TEMPORARY CUTANEOUS DIVERSION ON ULTIMATE BLADDER FUNCTION.

Souha Laarif, Cyrine Saadi, Fatma Bchini, Asma Jabloun, Fatma Trabelsi, Aida Daib, Rabiaa Be Abdallah, Youssef Hellal, Nejib Kaabar
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Abstract

Aim of the Study: Young children with high-grade primary vesicoureteric reflux (VUR) may develop renal scarring and severe sepsis. In such cases surgical treatment should be considered; however, ureteric reimplantation in the first months of life may be technically challenging. Consequently, the creation of a cutaneous vesicostomy (CV) might be considered an alternative method. To evaluate bladder function in young infants with VUR who had undergone an initial temporary CV followed by later antireflux surgery.

Methods: From 2010 to 2019, nine boys (1–24 months old) with primary VUR were treated with an initial vesicostomy, followed by delayed closure of the vesicostomy and the simultaneous surgical correction of reflux. The mean age at vesicostomy was 8.22 months. Only four patients had cystometry after re-functionalization of the bladder. The mean age at the time of urodynamic testing was 4.25 years.

Main results: After re-functionalization, in three patients, the cystometric capacity is similar to the expected bladder capacity for age. One had diminished bladder capacity. A high detrusor activity was seen in 2 cases. All patients had a normal range of bladder compliance, one of whom had associated hypertonicity of the external urethral sphincter. There is no residual urine volume in all cases. At the follow-up, no one had urinary incontinence.

Conclusions: A temporary vesicostomy is a simple and effective form of surgical treatment for neonates and infants with high-grade VUR. Additionally, the urodynamic studies after closure showed that transient vesicostomy did not adversely affect bladder function in most patients with primary VUR.

UR29_PO / 13:50 – 13:55

ROBOTIC VS LAPAROSCOPIC VASCULAR HITCH FOR POLAR VESSELS IN PEDIATRIC PYELOURETERIC JUNCTION OBSTRUCTION (PUJO): OUR EXPERIENCE AND LITERATURE REVIEW

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Department Of Pediatric Surgery, Policlinico San Marco-G.Rodolico, Catania University, Catania, Italy

Abstract

Aim of the Study: The extrinsic compression by an anomalous polar vessel is usually an uncommon cause of PUJO, which occurs symptomatically especially in older children. Transposition of lower pole crossing vessels has been described as a valid alternative for these patients.

Methods: We performed a retrospective study on 8 children affected by PUJO due to polar vessels compression, operated in our department by transperitoneal laparoscopic or robotic surgery between 2016 and 2022. Surgical indications included: presence of clinical symptoms, worsening of intermittent hydronephrosis, signs of obstruction on MAG-3 scan, clear or suspected images of polar crossing vessels on CT scan or Uro-MRI. The aim of this study is, based on our experience, to show that the minimal invasive approach to this kind of PUJO can be management by single vascular hitch. In fact, in our experience the furosemide test is sufficient to verify if we need to associate dismembered pyeloplasty or not.

Results: Five patients were operated by laparoscopic approach and three by robotic approach. There was no complication during surgery and post operative was uneventful in all cases. The mean follow-up was 28 months, and all patients are doing well with no recurrence of PUJO or symptoms.

Conclusions: In our experience when polar vessels represent mechanical cause of PUJO, the vascular hitch technique by laparoscopic or robotic approach represents the gold standard. In additional we believe that robotic procedure is technically less demanding that laparoscopic with very lower complication rate.

UR30_PO / 13:55 – 14:00

SURGICAL CORRECTION OF H-FORM ANORECTAL MALFORMATIONS IN CHILDREN

Nasriddin Ergashev, Furkat Otamuradov, Akmal Atamuratov
Termez Branch of the Tashkent Medical Academy, Termez, Uzbekistan

Abstract

Aim of the study: Anorectal malformations are represented by a wide range of nosological forms. Many aspects of the surgical treatment of H forms of fistulas with a normally formed anus remain debatable since the literature is insufficiently covered.

Methods: In 2009-2019, there were 504 patients in the clinic aged from 1 day to 15 years with ARM, of which 30 (5.9%) were patients with H-type. Patients were examined and subjected to surgical treatment according to the developed tactics.

Main results: In 6 (20.0%) patients, localization corresponded to anovestubular, in 11 (36.7%) - rectovestubular - an intermediate form; 12 (40%) had a high form, 1 (3.3%) boy had a rectourethral fistula with a normally formed anus. Invagination extirpation according to A.I. Lyonyushkin underwent 3 (10.0%) patients, elimination of the fistula by the anterior sagittal approach - 5 (16.7%). 22 (73.3%) patients, including repeated surgeries for relapses, were performed according to the clinic's methodology.

Conclusions: At intermediate and low localizations of the fistula, one-stage correction is indicated. Comparatively better results were obtained in the elimination of the fistula with the reduction of the anterior wall of the rectum. With high fistulas, this type of operation is advisable after the imposition of a preventive double sigmastoma.

UR31_PO / 14:00 – 14:05

PRIMARY REPAIR VS DELAYED STAGED REPAIR IN INFANTS WITH PRIMARY OBSTRUCTIVE MEGAURETERS AND THEIR LONG-TERM OUTCOMES - SINGLE CENTER EXPERIENCE.

Dr Neehar Patil, Dr Tarun Javali, Dr Padmalatha Kadamba
Ramaiah Medical College, Bangalore, India

Abstract

Aim of the Study: Comparing 2 approaches in management of infants with unilateral primary obstructive megaureters.

Methods: This was a retrospective analysis of prospectively maintained data base between 2005-2021. Infants < 1 year with unilateral primary obstructive megaureter were included. Children presenting with sepsis, in whom diversion was imperative, were excluded. They were divided into those who underwent an upfront extravesical ureteric reimplantation during infancy -Primary Repair and those who underwent end cutaneous ureterostomy during infancy followed by intravesical ureteric reimplantation after 1 year of age -Delayed staged repair. All were followed up annually after definitive repair with ultrasound, diuretic renogram and estimated glomerular filtration rate. Failure was persistent obstruction on renogram with worsening function / presence of high-grade reflux with recurrent infection; both of which necessitated a redo reimplantation.

Main results: 18 infants (Primary repair) and 16 infants (Delayed Staged Repair). Urinary tract infections were commonest symptom amongst both groups i.e., > 50 %. Post operative complication rate was 11 % (Primary repair); 31% (Delayed Staged Repair). 1 child in each group (2 girls) required redo reimplantation (5.8%). At the 3rd year follow up there was significant reduction in hydronephrosis ,improvement in renal function with no obstruction & improvement in estimated glomerular filtration rate amongst all which was statistically significant i.e. $p < 0.05$ .The success rate was 94.4% (Primary Repair) & 93.75% (Delayed Staged Repair). Mean follow up was 9.7 years (Primary Repair); 9 years (Delayed Staged Repair).

Conclusions: Primary Repair may be considered as preferred line of management of unilateral obstructed megaureters during infancy.

HB01_PO / 14:05 – 14:10

CHOLELITHIASIS IN CHILDREN, 16-YEARS EXPERIENCE

Asli Nur Abay, Ibrahim Karaman
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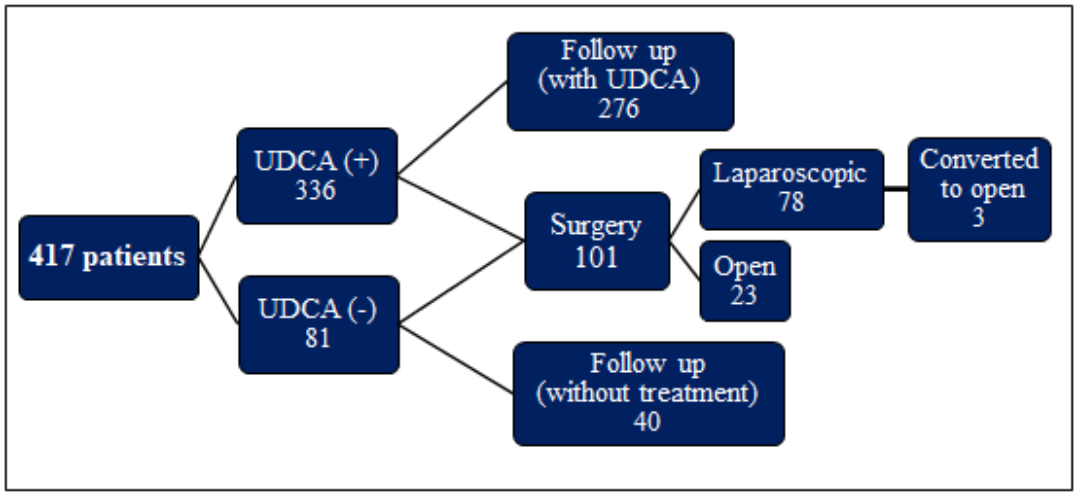
Abstract

Aim of the Study: The small number of patients and the wide variety of risk factors associated with gallstones in children make it difficult to create a comprehensive treatment guideline. To facilitate this, we aimed to define the factors affecting the development, presentation, and treatment of cholelithiasis in children.

Methods: Patients under the age of 18 who were diagnosed with cholelithiasis in our hospital between 2005 and 2020 were identified and information about their clinical histories and treatments were retrospectively analyzed from the hospital automation system.

Main results: 417 patients were included in the study. Obesity was the most common risk factor and was present in 34.7% of patients over 10 years of age. The number of patients diagnosed with cholelithiasis had doubled in the last 8 years, but there was no significant difference in the rates of asymptomatic patients and obesity compared to the previous 8 years. The stone disappearance rate was 70% in those using ceftriaxone and 37.5% in those using TPN. There was no relationship between stone size and the rate of being symptomatic, becoming complicated or stone disappearing (p=0,080, p=0,908, p=0,071). The complication rate of the stone was 6.2% in all patients, 9.8% in the older age group, and 12.2% in those with obesity.

Conclusion: Patients with a history of using ceftriaxone or TPN should be followed up because the stone disappearance rate is high, and the complication rate is low. Surgical treatment should be considered primarily in patients with complicated gallstones, symptomatic patients, and adolescents.



HB02_PO / 14:10 – 14:15

CUSUM ANALYSIS OF THE OUTCOMES OF PORTOENTEROSTOMY FOR BILIARY ATRESIA.

Mark Davenport, Peter Cornuaud, Ben Jones, Rania Kronfli, Erica Makin
Kings College Hospital, London, United Kingdom

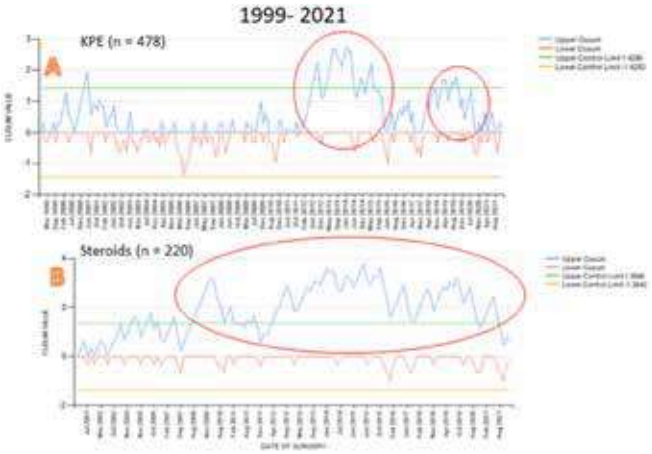
Abstract

Aim of the Study: Outcomes of the Kasai portoenterostomy (KPE) for biliary atresia (BA) have been inconsistent and unpredictable despite a long history of its use. We analysed such outcomes using CUSUM (CUMulative SUM) analysis to identify key variables.

Methods: Analysis of prospective single-centre database (Jan. 1999 – Dec. 2021) using CUSUM techniques. We chose clearance of jaundice (< 20 umol/L) as the key measure of outcome, most clearly related to surgical performance, with upper and lower control limits set at 4 SD. A clearance rate of 50% was chosen for the baseline. Variables included age at KPE (<40; 41-60;61-89; >90 days); use of steroids; presence of +ve CMV serology; and presence of BASM features. Data are presented as median (IQR).

Main results: 478 infants were included (median age at KPE – 54 days) with BASM (n = 73, 15.3%); CMV (n = 45, 9.4%); use of steroids (n = 220, 46%). Raw clearance rate was 275 (57.5%). Significantly greater clearance was observed in two periods (June 2012 – May 2015 and Apr 2018 – July 2020) (Fig 1A). Significant greater clearance was observed in the same period for those with BASM. Steroid use was associated with significantly greater clearance from 2008 (FIG 1B). Only infants <40d had any significant variation with consistent improvement from 2006 (not shown).

Conclusions: CUSUM analysis may suggest changes in clinical outcomes where there are multiple possible variables of interest. The use of high-dose steroids was associated with significantly improved outcomes.



HB03_PO / 14:15 – 14:20

CONGENITAL EXTRAHEPATIC PORTOSYSTEMIC SHUNT: IS EARLY TREATMENT NECESSARY?

María San Basilio, Ane Andres-Moreno, Dolores Ponce, Loreto Hierro, Carla Ramírez-Amorós, Karla Estefanía-Fernández, Paloma Triana, Francisco Hernández
Hospital Infantil La Paz, Madrid, Spain

Abstract

Aim of the study: Congenital extrahepatic portosystemic shunt (CEPS) or Abernethy malformation is a rare anomaly in which there is a direct communication between portal and systemic circulations that can associate serious complications such as hepatic encephalopathy, pulmonary hypertension, or tumors. The aim of this study was to analyze presentation, management, and outcomes in our case series.

Methods: A retrospective observational study was conducted on patients with CEPS treated in our institution between 2015-2022, excluding patients with intrasystemic shunts. We analyzed demographics, clinical data, imaging tests, type of treatment as well as postoperative complications and follow-up.

Main results: We included 9 patients (4 males and 5 females) with a median age of 17 years (Q1-Q3: 10.5-22.5 years), of which 4 had hyperammonaemia at diagnosis. In 4 patients the imaging diagnosis was CEPS type I, but in all cases the presence of hypoplastic portal circulation was evident during shunt closure, confirming type II. In 8 patients, percutaneous closure of the shunt was performed by vascular intervention, with clinical improvement and normalization of ammonia values in 6 cases, with a median follow-up of 14 years (Q1-Q3; 7-19 years). In the remaining 2 cases, there was migration of the closure device into the pulmonary arteries, requiring urgent cardiac surgery for their removal. In the 9th patient, liver transplantation was decided upon due to anatomopathological diagnosis of hepatocarcinoma.

Conclusions: The severity of potential complications of congenital extrahepatic portosystemic shunts requires early shunt closure, by interventional or surgical approach, including liver transplantation in certain cases.

HB04_PO / 14:20 – 14:25

HEALTH-RELATED QUALITY OF LIVE AFTER PEDIATRIC LIVER TRANSPLANTATION: UNICENTRIC STUDY OF 50 CHILDREN

Lucas Moratilla-Lapeña[1], María Sarmiento[1], Karla Estefanía-Fernández[1], Carla Ramírez-Amorós[1], Alba Bueno[2], Javier Serradilla[1], Alba Sánchez-Galán[1], Carlos De la Torre[1], José Luis Encinas[1], Ane Andrés[1], Francisco Hernández[1]
[1]Hospital La Paz, Madrid, Spain. [2]King's College Hospital NHS Foundation Trust, London, United Kingdom

Abstract

Aim of the study: Liver transplantation (LT) has a great 5-year patient survival with rates near 88% for paediatric recipients, so health-related quality of live (HRQOL) increase of these patients has become a focus area. Few studies have been published with a specific questionary as it is the Paediatric Quality of Life Inventory 3.0 Transplant Module (PedsQL TM).

Methods**:** Retrospective unicentric study of paediatric patients who underwent LT in the last 18 years by means of a digital questionnaire from PedsQL TM (0-100). Parents also answered Zarit caregiver interview (0-88) with punctuations <46 absence of burden.

Main results**:** 34 patients and 50 parents answer the questionary. Mean time since LT was 76,84 ± 51,08 months. Total quality of life children-proxy report mean was 76,97±13,14; 78,22±19,36 for physical health and 68,65±19,44 for psychosocial health; while parent proxy report was 75,33±13,10 for total score, 80,9±12,98 for physical health and 65,94±17,71 for psychosocial health. Zarit interview mean results were 22,40±12,64 with no reports over 46 punctuation. No relation between time since of LT and total quality of life was seen (r=-0,0291; p=0,1 and r=-0,229; p=0,113).

Conclusions**:** Our results are in line with the literature, which describes results around 75-80 points in PedsQL. Most patients describe scores values for good quality of life, but we should try to improve this as much as possible, especially on the psychosocial aspect. Finally, no parents reported signs of caregiver overload.

HB05_PO / 14:25 – 14:30

RISK FACTORS OF CHOLECYSTECTOMY IN SPHEROCYTOSIS AND DREPANOCYTOSIS IN CHILDREN

Benoit Tessier[1], Perinne Mahe[2], Géraldine Hery[3], Margot Ollivier[1], Olivier Maillet[1], Dominique Forgues[1], Marie Pierre Guibal[1], Aurore Haffreingue[4], Alexis Belgacem[5], Guillaume Rossignol[6], Anne Dariel[7], Jean François Lecompte[8], Camille Duchesne[9], François Varlet[10], Ichrak Belbahri[11], Nicolas Molinari[12], Eric Jeziorski[2], Arnaud Bonnard[13], Nicolas Kalfa[1]
[1]Pediatric Surgery Department, Hospital Lapeyronie, Montpellier, France. [2]Pediatric Department, Hospital Arnaud de Villeneuve, Montpellier, France. [3]Pediatric Surgery Department, Hospital Kremlin Bicêtre, Paris, France. [4]Pediatric Surgery Department, Hospital Caen, Caen, France. [5]Pediatric Surgery Department, Hospital Limoges, Limoges, France. [6]Pediatric Surgery Department, Hospital Lyon, Lyon, France. [7]Pediatric Surgery Department, Hospital Marseille, Marseille, France. [8]Pediatric Surgery Department, Hospital Nice, Nice, France. [9]Pediatric Surgery Department, Hospital Rennes, Rennes, France. [10]Pediatric Surgery Department, Hospital Saint Etienne, Saint Etienne, France. [11]Pediatric Surgery Department, Hospital Toulouse, Toulouse, France. [12]Department of Biostatistics and Medical Information, CHU Montpellie, Montpellier, France. [13]Pediatric Surgery Department, Hospital Robert Debré, Paris, France

Abstract

Aim of the Study: Spherocytosis and drepanocytosis are associated with hemolysis and gallbladder lithiasis. The aim of this study is to determine the risk factors of cholecystectomy in these conditions.

Methods: This multicentric (n=11) national retrospective comparative study included children with spherocytosis or drepanocytosis between 2005 and 2017. The minimum follow up was 5 years. Univariate and multivariate logistic regression was performed for the whole cohort and for each condition.

Main results: 206 children were included (110 drepanocytosis, 96 spherocytosis) with a mean follow up of 8,5 years (5-17 years). Half benefited from a cholecystectomy (43,6% drepanocytosis, 58,3% spherocytosis). Multivariate analysis identified 3 risk factors for surgery : 1- Increasing age with an increase in risk of 15% per year (OR = 1,15 ; IC [1,06 – 1,24] ; p < 0,001); 2- Partial splenectomy compared to total splenectomy (OR = 2,53 ; IC [1,04 – 6,1] ; p = 0,04); 3- The occurrence of vaso-occlusive crisis in case of drepanocytosis (OR= 3,99 ; IC [1,20-13,22] ; p =0,02).

Conclusions: Advanced age, partial splenectomy and occurrence of vaso-occlusive crisis are risk factors for cholecystectomy in our cohort. These factors may reflect a longer duration or more intense hemolysis leading to gallbladder complications. This result may help to determine which patients would benefit for a specific follow-up.

13:30 - 14:30

Poster Presentation Session 9

Case Reports I

(M2) Studio 1+2

Chair: Tatjana Koenig (GER)

Luca Matthysens (BEL)

CR01_PO / 13:30 – 13:35

LOWER LIMB COMPARTMENT SYNDROME AFTER BLUNT TRAUMA COMPLICATED BY A PSEUDOANEURYSM – CASE REPORT

Felix Omoregbee, Balazs Bota, Zsolt Jorasz
Bethesda Children's Hospital, Budapest, Hungary

Abstract

Aim of the study: Paediatric nonfracture acute compartment syndrome (NFACS) is rare and poorly described within the literature. We present a case of NFACS caused by blunt trauma and bleeding from a pseudoaneurysm of the deep femoral artery (DFA).

Case Description: During handball training, a 16-year-old healthy, active boy sustained blunt trauma to his right thigh from contact with a teammate's knee. In the next two hours, he noted progressive pain and swelling of his thigh and presented to our department, unable to bear weight. Following admission, the clinical diagnosis of NFACS of the anterior compartment of the thigh was confirmed by intra-compartmental pressure measurement. We performed urgent fasciotomy through lateral incision, and the anterior compartment was released. The muscles were viable, and there was no evidence of active bleeding or significant haematoma. The medial and posterior compartments were intact.
We started negative pressure wound therapy (NPWT) the next day. After 72 hours of continuous NPWT, we experienced 1400 mL serosanguinous drainage, and the patient became anaemic. Ultrasound examination raised suspicion, and MR-Angiography confirmed pseudoaneurysm of a branch of the DFA. Successful coil embolization was performed the same day.
With ongoing NPWT, we could achieve definitive fasciotomy wound closure in seven days. The patient was discharged fully weight-bearing, made a full recovery, and returned to competitive sport in six months.

Conclusions: Beyond muscle crush injury, there should be suspicion of associated vascular injuries in NFACS. We recommend NPWT for the closure of fasciotomy wounds in children as the first choice.

CR02_PO / 13:35 – 13:40

Heterotaxy syndrome associated with polyspenia, gut malrotation and agenesis of the dorsal pancreas presenting with splenic infarction: A case report.

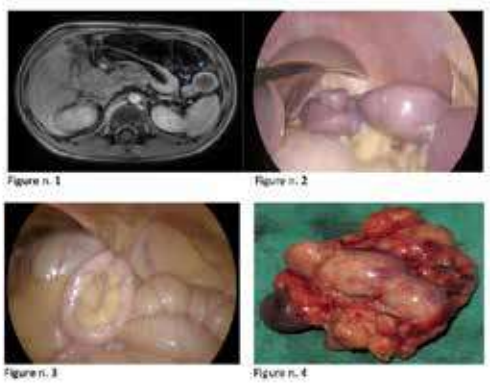
Petra Zahradnikova, Daniela Trepáčová, Igor Béder, Jozef Babala
Department of Pediatric Surgery, Faculty of Medicine, Comenius University, National Institute of Children´s Diseases, Bratislava, Slovakia

Abstract

Aim of the Study: Heterotaxy syndrome (HS) is a rare embryological disorder comprising of polysplenia, agenesis of dorsal pancreas, malrotation of gut, cardiac and vascular anomalies resulting from failure of development of the usual left–right asymmetry of organs. HS affects every child differently. Symptoms may be mild or severe, depending on the complexity of the heart defects and problems in other organs

Case description: We describe a rare case of HS syndrome associated with spontaneous wandering splenic infarction. A 5-year-old boy was presented to the pediatric emergency room with a 2-day history of abdominal pain. He did not report fever, nausea or vomiting. Abdominal tenderness or organomegaly was not found on physical examination. Abdominal sonography was performed to evaluate the cause of abdominal pain which revealed polysplenia and partial agenesis of the dorsal pancreas. Magnetic resonance confirmed polysplenia with an elongated splenic vascular pedicle suggesting splenic torsion, partial agenesis of the dorsal pancreas and gut malrotation (Figure 1). Echocardiogram showed no abnormalities. Laparoscopy revealed polysplenia with torsion of infarcted accessory spleen (Figure 2) and gut malrotation (Figure 3). Ladd procedure was performed, accessory spleen was removed. At pathology, the accessory hemorrhagic spleen with infarction was discovered (Figure 4). The postoperative course was uneventful, and the patient was discharged on the 4th day postoperatively without complications.

Conclusions: Heterotaxy syndrom is a complex compilation of a broad spectrum of cardiac and extra-cardiac abnormalities. This case demonstrates unusual accessory splenic torsion in the setting of polysplenia and heterotaxy syndrome presented with signs of acute abdomen.



CR03_PO / 13:40 – 13:45

A NOVEL ABDOMINAL WALL TRACTION DEVICE TO ACHIEVE FASCIAL CLOSURE IN NEONATAL AND PEDIATRIC PATIENTS

Marietta Jank[1], Daniel Svoboda[1], Raimund Stein[2], Neysan Rafat[3], Thomas Schaible[3], Michael Boettcher[1]
[1]1. Department of Pediatric Surgery, University Medical Center Mannheim, Heidelberg University, Mannheim, Germany. [2]2. Center for Pediatric, Adolescent and Reconstructive Urology, University Medical Center Mannheim, Heidelberg University, Mannheim, Germany. [3]3. Department of Neonatology, University Medical Center Mannheim, Heidelberg University, Mannheim, Germany

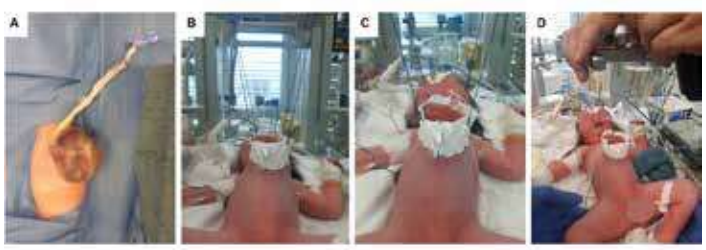
Abstract

Aim of the Study: Current methods of abdominal wall reconstruction in neonatal and pediatric patients often require multiple procedures to achieve complete fascial closure and are associated with a significant complication rate. A novel abdominal wall traction device gradually stretches the fascia until primary abdominal closure is possible.

Methods: This observational study investigates the feasibility of this method in newborns and children. We conducted a single-center retrospective analysis, including patients treated with a vertical traction device, from May 2021 to January 2023. Data was collected with a focus on indication for treatment, clinical application, duration, and complications of the procedure.

Main results: In total, 5 patients were identified during the study period. Indications for treatment with vertical traction included congenital abdominal wall defects (n=2), ventral hernia (n=1), viscero-abdominal disproportion after congenital diaphragmatic hernia (n=1) and cloacal exstrophy (n=1) repair. Duration of traction varied between 30 minutes to 22 days. After a median follow-up of 6.5 (2-19) months there was one case of incisional hernia.

Conclusion: To our knowledge, we are the first to evaluate this novel traction device to achieve primary abdominal wall closure in neonatal and pediatric patients with substantial abdominal wall defects. However, future research is necessary to optimize the application of this procedure.



24th EUPSA CONGRESS
June 7 - 10, 2023
Hyatt Regency Hotel IZMIR / TURKIYE
European Paediatric Surgeons' Association

CR04_PO / 13:45 – 13:50

MINIMALLY INVASIVE RESECTION OF A SYMPTOMATIC BIFID INTRATHORACIC RIB

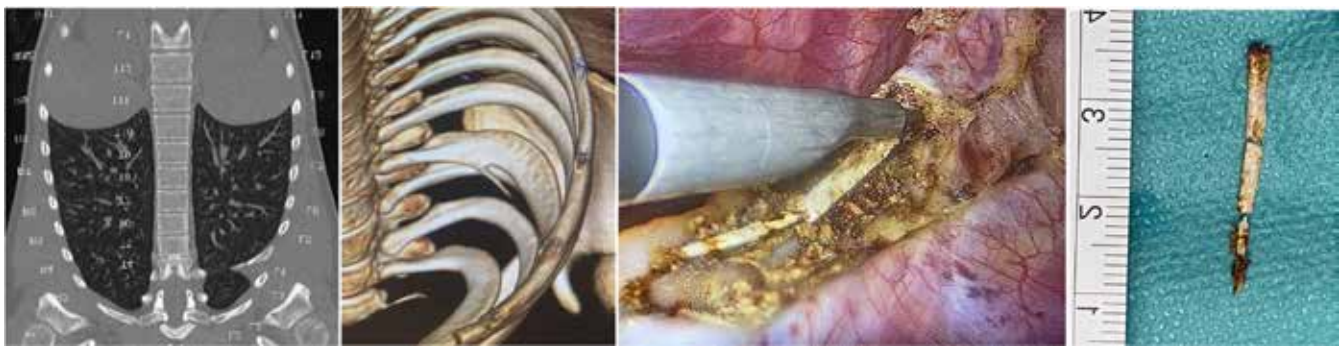
Carlos Delgado-Miguel[1,2], Pablo Fernández[1], Antonio Muñoz-Serrano[1], Pablo Aguado[1], Ennio Fuentes[1], Ricardo Díez[1]
[1]Fundación Jiménez Díaz University Hospital, Madrid, Spain. [2]Institute for Health Research IdiPAZ, La Paz University Hospital, Madrid, Spain

Abstract

Aim of the Study: Intrathoracic ribs are rare congenital anomalies where a supra- or normonumerary rib follows an abnormal course within the thorax. Less than 10 cases have been reported in children, being commonly asymptomatic and usually found incidentally, causing misdiagnosis in the majority. We report a unique case of bifid intrathoracic rib arising from the posterior portion of a deformed 4th rib which caused recurrent severe chest pain.

Case description: A 14-year-girl diagnosed with Noonan syndrome presented over 6-months history of recurrent left thoracic pain, unrelieved by oral analgesics. She had no history of trauma, fever or coughing, and no sign of respiratory distress, tachypnoea or tachycardia. Chest radiography showed no abnormalities. Unenhanced helical thorax CT identified an incomplete development of the 4th left rib, which was associated with the presence of an accessory intrathoracic rib (type I-b of Hiroshi) that had a non-articulated origin in the posterior third of the rib body and was indented into the thoracic cavity (3 cm in length). Elective thoracoscopy was performed, with identification and resection of the intrathoracic rib, which was removed en bloc by a 10 mm trocar. There were no intraoperative or postoperative complications. The patient was discharged 48 hours after surgery, asymptomatic, and returned to her everyday activities immediately. After 12 months of follow-up, she remains asymptomatic, with no recurrence of chest pain.

Conclusions: Intrathoracic rib thoracoscopic resection is an effective and minimally invasive alternative for the treatment of symptomatic cases, leading to a rapid recovery and a satisfactory cosmetic outcome.



CR05_PO / 13:50 – 13:55

Laparoscopic repair of a hydrocele of the canal of Nuck using a combination of cyst resection and the Burnia technique

Theresa Lohse, Anne-Sophie Holler, Oliver Muensterer
Department of Pediatric Surgery, Dr. von Hauner Children's Hospital, Ludwig-Maximilians-University Medical Center, München, Germany

Abstract

Aim of the Study: Hydroceles of the canal of Nuck are very rare when diagnosing a swelling of the groin in girls. They develop based on an incomplete obliteration of the canal of nuck, equivalent to a hydrocele in boys. Open repair is the standard of care in most hospitals.

Case description: We report a case of a 5-month-old girl born at 24 weeks of gestation who presented in our department with a non-painful swelling of her right groin. A laparoscopy was performed for suspected inguinal hernia. Intraoperatively, a nuck cyst protruding into the peritoneal cavity was found. Repair was performed by partial resection of the cyst and obliteration of the open processus vaginalis using the Burnia technique. On the left side, the processus vaginalis was closed. The laparoscopic repair was performed within 50 minutes. There were no intraoperative or postoperative complications. Postoperatively, the girl was monitored in the newborn intensive care unit, due to significant medical comorbidities. Follow-up 3 months later showed well healed scars and no recurrence.

Conclusions: Only few reports about laparoscopic nuck cyst repair exist. To our knowledge, this is the first laparoscopic repair using a combination of cyst resection and closure of the processus vaginalis using the Burnia technique. The technique is simple and yields excellent results. A cyst of the canal of nuck is relatively rare but should always be a differential diagnosis when finding inguinal masses in girls.

CR06_PO / 13:55 – 14:00

MULTIDISCIPLINARY TREATMENT OF A PATIENT WITH CANTRELL'S PENTALOGY AND ACCOMPANYING MAJOR CONGENITAL CARDIAC ANOMALIES IN THE COVID-19 PANDEMIC

Mustafa Karacelik[1,2], Akgun Oral[3,2], Cagatay Bilen[4], Kamer Polatdemir[5]
[1]Department of Pedieatric Cardiac Surgery, Health Sciences University, Izmir Faculty of Medicine, Izmir, Turkey. [2]Izmir Dr. Behçet Uz Children's Hospital, Izmir, Turkey. [3]Department of Pediatric Surgery, Health Sciences Universityi İzmir Faculty of Medicine, Izmir, Turkey. [4]Department of Pedieatric Cardiac Surgery, Health Sciences University,Izmir Dr. Behçet Uz Children's Hospital, Izmir, Turkey. [5]Department of Pediatric Surgery, Health Sciences Universityi.Izmir Dr. Behçet Uz Children's Hospital, Izmir, Turkey

Abstract

Aim of the study: We present, how we managed a patient with Cantrell's pentalogy (cp) and major cardiac malformations in the covid-19 pandemic.

Case description: A newborn suffering from complete form of CP and large supraumbilical hernia sac with a pulsation of diverticula (originating from left ventricle to top-end of the sac), and sternum defect was admitted to our medical center. Dextrocardia, perimembranous VSD (7 mm), Secundum ASD (4 mm), pulmonary valvular stenosis (peak grade 40 mm), and omphalocele-related diverticula (4x4 cm) were detected. Because of the pandemic lockdown constraints, it was planned to perform a single prospective operation as the pulmonary valve stenosis would protect the patient from pulmonary hypertension. Following an angiography indicating no pulmonary hypertension exists, an operation was performed by pediatric and cardiovascular surgeons, at 18 months of age. Lower 1/3 of the sternum was not developed. After median sternotomy, incision was extended to top of the omphalocele-sac. Left ventricle diverticulum was separated, diaphragm defect was repaired by separated nonabsorbable sutures. Cardiopulmonary bypass was applied after the aorto-bicaval cannulation. Left-ventricle oriented diverticulum was excised. Following right atriotomy, perimembranous VSD was closed using bovine pericardial patch. Next-to pulmonary arteriotomy, valvuloplasty was performed on bicuspid pulmonary valve. Finally, abdominal wall was repaired cosmetically. The patient was extubated on the same-day and discharged on the sixth day.

Conclusions: From our standpoint, even there exists Cantrell's Pentalogy with major cardiac anomalies, a single-operation in infancy period opposed-to consecutive operations during newborn period provided the operation success.

CR07_PO / 14:00 – 14:05

ATRESIA OF MAIN DUODENAL PAPILLA AND PANCREATICOBILIARY MALJUNCTION IN THE PATIENT WITH DUODENAL ATRESIA ASSOCIATED WITH ANNULAR PANCREAS

Hiromu Miyake, Masaya Yamoto, Akiyoshi Nomura, Juma Obayashi, Yuri Nemoto, Takafumi Tsukui, Koji Fukumoto
Shizuoka Children's Hospital, Shizuoka, Japan

Abstract

Aim of the Study: Annular pancreas is usually associated with duodenal obstruction in neonates. Previous studies have reported an association between pancreaticobiliary maljunction and annular pancreas. However, a coincidence with another pancreaticobiliary anomaly has rarely been reported. Here, we report a case of atresia of the major duodenal papilla and pancreaticobiliary maljunction associated with annular pancreas.

Case description: A male patient with trisomy 21 underwent duodenoduodenostomy for duodenal atresia with annular pancreas in neonatal period. After surgery, he experienced recurrent pancreatitis. At the age of 7 years, endoscopic retrograde cholangiopancreatography revealed diffuse dilatation of the bile duct, choledochocele, and pancreaticobiliary maljunction. At that time, surgical intervention was not performed due to the patient's refusal. Surgery was performed at the age of 14 years owing to recurrent abdominal pain and vomiting. Intraoperative cholangiopancreatography showed diffuse dilatation of the bile duct, pancreaticobiliary maljunction, and atresia of the major duodenal papilla. Amylase level of the bile juice was high. Dilatation of the common channel was not because of choledochocele, but congestion of bile and pancreatic juice was caused by atresia of the papilla. Bile and pancreatic juice were drained via the minor papilla (Figure). He underwent choledochal cyst excision, hepaticojejunostomy, and papilloplasty. The postoperative course was uneventful, and the symptoms resolved.

Conclusion: The absence of duodenal papilla is extremely rare. To our best knowledge, this is the first report of a coincidence of atresia of the major duodenal papilla and pancreaticobiliary maljunction in a patient with duodenal atresia associated with annular pancreas.

CR08_PO / 14:05 – 14:10

IDIOPATHIC ISCHEMIC PRIAPISM IN A 12-YEAR-OLD BOY

Maria Moormann[1], Hagen Graf Einsiedel[2], Christian Roth[3], Martin Lacher[1], Gabriel Götz[4]
[1]Pediatric surgery, Leipzig, Germany. [2]pediatric oncology, Leipzig, Germany. [3]pediatric radiology, Leipzig, Germany. [4]Pediatric surgery, leipzig, Germany

Abstract

Aim of the Study: Priapism is defined as a pathological and usually painful erection without any sexual stimulus for at least four hours. Treatment depends on the subtype and needs to be initiated as soon as possible to avoid subsequent erectile dysfunction. The etiology of priapism is multifactorial. It may be idiopathic but can also develop based on a hematological disease, trauma, or drug abuse.

Case description: We report on a 12-year-old boy with painful priapism persisting for 12 hours. He denied any previous hematological disease, trauma, medication intake or drug abuse. Doppler sonography revealed low-flow-type priapism, which was confirmed by blood gas analysis after therapeutic puncture of the corpora cavernosa (figure 1). Furthermore, we injected Etilefrine 5mg on each side. The symptoms improved only briefly, and two additional punctures were performed with injection of Etilefrine 5mg and 2500IE heparin on each side. Finally, we observed a decrease of the erection. MRI of the pelvis showed no mass or arteriovenous fistula. An underlying condition, especially hematologic disease like sickle cell anemia, could not be found. Spontaneous nocturnal erections were reported during the follow-up after two weeks.

Conclusions: Ischemic priapism in children is rare. Clinical and sonographic findings should be confirmed immediately by blood gas analysis of the corpora cavernosa. In our case, multiple punctures were necessary to induce detumescence. The goal of treatment is to avoid erectile dysfunction in the long-term course.

CR09_PO / 14:10 – 14:15

Case report: Successful surgery in a newborn with sternal cleft and partial ectopia cordis

Elisabeth Haag, Wilfried Krois, Dominik Wiedemann, Martin Metzelder
Medical University Vienna, Vienna, Austria

Abstract

Aim of the study: The sternal cleft is a rare congenital malformation caused by partial or total absence of fusion of the sternum at an early embryonic stage. Sternal clefts are often associated with other malformations. Especially additional cardiac malformations cause a worsening of the outcome. The diagnosis can be made clinically by palpation postnatally. MRI or CT should be chosen for accurate visualization of the malformation. Detailed therapy recommendations are still lacking.

Case description: We report the case of a partial sternal cleft combined with a partial ectopia cordis in a newborn. Surgery was performed succesfully on the 7th day of life. During surgery, the abdominal wall was found to be intact, with regular linea alba and regular rectus aponeurosis and musculature. The open pericardium revealed the cardiac apex with the left ventricular diverticulum which was connected to the celiac sac. This structure was clamped close to the heart and a ligation was performed. The diaphragm was completely regular and showed no gap. After surgery no further complications have been reported. The patient could be discharged 5 days after surgery without any problems.

Conclusions: Regardless of symptoms, patients with a congenital sternal cleft should undergo surgical correction during the neonatal period because it achieves direct closure with a satisfactory cosmetic effect. A careful follow-up examination is needed.

CR10_PO / 14:15 – 14:20

ABDOMINOPHRENIC DYSSYNERGIA AS A RARE CAUSE OF EXTREME ABDOMINAL DISTENSION

Carmen López-Hierro[1], Laura García-Martínez[2], Marina Alvarez[2], Carlos Gine-Pradés[2], Ana Laín-Fernández[2], María Díaz-Hervás[2], Rodrigo Maluje-Juri[2], Manuel López-Paredes[2]
[1]Hospital Universitary Vall d'Hebron, Barcelona, Spain. [2]Hospital Universitari Vall d'Hebron, Barcelona, Spain

Abstract

Aim of the study: Abdominophrenic dyssynergia (APD) occurs in patients with functional gut disorders and consists of an abnormal diaphragmatic contraction with relaxation of the abdominal wall, resulting in an exaggerated abdominal distension. Treatment consists in EMG biofeedback, diaphragmatic breathing and strengthening abdominal exercises. Publications on pediatric patients are scarce, with only two reported cases of APD related to aerophagia. In both of them a surgical consultation was made, being performed one laparoscopy (without any findings). Our aim is to report a pediatric case of APD and to point out this rare entity that should be taken into account in the differential diagnosis of patients with abdominal distension.

Case description: A 14-year-old patient with healthy urinary and depositional habit developed urinary incontinence and non-neurogenic neurogenic bladder after SARS-Cov-2 infection. Intravesical botox injection was attempted developing acute urinary retentions and severe constipation afterwards. Under suspected chronic pseudo-obstruction diagnosis, the patient was referred to our center. Exaggerated abdominal distension was observed, and intermittent vesical catheterization and rectal enemas were initiated. Abdominal imaging was normal, and a central catheter was placed for parenteral nutrition. During the procedure under general anesthesia, immediate flattened abdomen was incidentally observed, and extreme distension reappeared once the anesthesia was over. APD was suspected and the functional gastrointestinal disorders team confirmed the diagnosis. Treatment with diaphragmatic breathing and biofeedback was initiated with distension improvement.

Conclusions: APD should be considered in patients with chronic intestinal pseudo-obstruction symptoms and exaggerated abdominal distension in absence of mechanical occlusion or intestinal motility disorders.

CR11_PO / 14:20 – 14:25

TRIPLICATION OF SIGMOID: A RARE ACCIDENTAL FINDING IN ASSOCIATION WITH ANORECTAL MALFORMATION DURING CLOSURE OF COLOSTOMY (CASE REPORT)

Ahmed Zain[1], Sara Fadil[2]
[1]Nahrain university college of medicine, Baghdad, Iraq. [2]Central Teaching Hospital of Children, Baghdad, Iraq

Abstract

Aim of the Study: To highlight on a very rare gastrointestinal anomaly associated with anorectal malformation (ARM).

Case description: Triplication of colon is an extremely rare variant of enteric duplication with only a few previously reported cases Herein we present a case of 9-month old male who is a known case of imperforate anus with rectourtheral fistula (prostatic fistula) admitted to theater for closure of his divided sigmodostomy as a third stage to complete the surgical correction of his ARM, during release of distal stoma we find three bowel lumen and we insert a catheter in each lumen to detect the native bowel and then we did closure of stoma.

Conclusions: Triplication of sigmoid is a very rare congenital anomaly with ARM and it is very difficult in diagnosis during preoperative investigations.

CR12_PO / 14:25 – 14:30

FALLOPIAN TUBE TERATOMA MIMICKING OVARIAN TORSION IN A 16-YEAR-OLD ADOLESCENT

Fatma ÖZCAN SIKI, Mehmet SARIKAYA, Gamze KAYGISIZ BAYINDIR, Metin GÜNDÜZ, Tamer SEKMENLİ, İlhan ÇİFTCİ
Selcuk University, Faculty of Medicine Department of Pediatric Surgery, KONYA, Turkey

Abstract

Aim of the Study: Fallopian tube teratomas are rare cases. It is most common in childbearing age. It is very rare in the adolescent age group. We present a case of fallopian tube teratoma, which has not been seen before in the adolescent age group in the literature.

Case description: 16-year-old female patient;she applied to the emergency department with complaints of abdominal pain and vomiting for the last 6 hours. On physical examination, there was widespread tenderness and defence, especially in the left lower quadrant. Pelvic Doppler ultrasonography revealed a 5x5.5 cm heterogeneous hyperechoic lesion originating from the left ovary, containing cystic-calcified areas and no blood supply was observed. Alpha Feto Protein (AFP): 447 and beta-human chorionic gonadotropin (B-HCG) values were normal in the preoperative blood tests of the patient. In operation ; A mass containing hematoma areas with irregular walls was observed on the left fallopian tube. It was seen that the left tuba was torsioned 5 turns and was detorsioned. It was observed that the blood supply of the tubal improved and there was a mass containing hair and calcified dpoculi within its borders with the tuba. The mass was excised totally . The pathology result confirmed that the mass was a teratoma. AFP value returned to normal after surgery.

Conclusions: Teratomas originating from the fallopian tube are rare. It should be kept in mind that it can also be seen in the adolescent age group and may mimic ovarian torsion.

13:30 - 14:30

Poster Presentation Session 10

Case Reports II

(M2) Studio 1+2

Chair: Milena Vrebic (SLO)

Roel Baxx (NED)

CR13_PO / 13:30 – 13:35

DELAYED PNEUMOTHORAX IN POSTOPERATIVE NUSS PROCEDURE WITH CRYOANALGESIA

Clara Massaguer Bardaji, Laura Saura García, Pedro Palazón Bellver, Leopoldo Tapia Moral, Irene De Haro Jorge, Xavier Tarrado Castellarnau
Hospital Sant Joan de Déu, Barcelona, Spain

Abstract

Aim of the study: To present a case of pneumothorax secondary to cryoanalgesia in a patient with pectus excavatum.

Case description: Thirteen-year-old male patient with marphanoid features and pectus excavatum with Haller index 4 and correction index of 38%. Spirometry was normal and had light aortic valve dilation in echocardiogram. Nuss procedure (with cryoanalgesia two weeks before) was performed, uneventfully. A month later, in routine outpatient checkup, he referred middle abdominal pain, denying respiratory symptoms nor thoracic pain. He presented bilateral apical and right basal hypophonesis. Chest x-ray showed bilateral pneumothorax and right pleural effusion. He was admitted to the emergency room and chest CT was ordered, reporting right apical blebs. Bilateral thoracoscopy was performed. Apexes were checked for pulmonary blebs to rule out primary pneumothorax. In the right chest a wedge resection of a distorted area on the apex and pleuroabrasion were done. Four round parenchyma injuries in the right lower lobe with air leakage, corresponding to cryoanalgesia intercostal eschars were found, and were closed by primary suture. In the left chest there were no blebs. Another four pleural lesions in the left lower lobe were also found. Postoperative course was uneventful. Chest drains were removed at 48 hours. He remains asymptomatic 6 months after discharge.

Conclusions: Cryoanalgesia in pectus excavatum is spreading due to the improvement in postoperative pain control. However, some complications may occur. To the best of our knowledge, this is the first reported direct visualization of cryoanalgesia lung injuries causing delayed pneumothorax.

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CR14_PO / 13:35 – 13:40

FOUR ARM ROBOTIC LEFT PNEUMONECTOMY IN CHILDREN: FIRST CASE REPORT

Marion DURAND[1], Rani KASSIR[2], Charlotte ROY[2], Daniel ORBACH[3], Morgane DERVAUX[2], Giorgia OROFINO[2], Agnes CHURCH[2], Christophe DELACOURT[2], Sabine SARNACKI[2], Thomas BLANC[2], Naziha KHEN-DUNLOP[2]
[1]Groupe Hospitalier Privé Ambroise Paré Hartmann, Paris, France. [2]University Hospital Necker-Enfants Malades, AP-HP, Paris, France. [3]Institut Curie, Paris, France

Abstract

Aim of the Study: Robotic lobectomy has shown to achieve similar perioperative outcomes than VATS lobectomy with the exception of a lower conversion rate to thoracotomy. Very few cases of robotic pneumonectomy are described in adults, and none has been published in children yet. We present a pediatric case of a left robotic pneumonectomy.

Case description: A 10 years-old boy was admitted with dyspnea and dry cough with a weight loss of 10 kilograms over 6 months. A computed tomography scan and bronchoscopy revealed a low-grade endo-bronchial mucoepidermoid tumor obstructing the left lung at the origin of the main left bronchus, responsible for lower lobe atelectasis and upper lobe bronchial dilatation. Preoperative pulmonary scintigraphy showed a left lung function of less than 10%. A left lung pneumonectomy was then decided, and a 4-arm robotic approach was chosen. The setting and surgical procedure was adapted from adult's technic. Vessels and bronchial controls were done with reticulating staplers. Length of procedure was 3h50 min. Surgery and post-operative course were uneventfull. No transfusion was required. Chest tube was removed day1 ant patient was discharged after five days. Pathology confirmed R0 resection. The 6-month control was without complications.

Conclusion: Thoracic robotic pneumonectomy is safe and feasible in selected children. It allows complex thoracic procedure in a closed chest, ensuring the required technical skills whilst sparing muscle and nerve, thus improving patient outcome and sequalae. This approach should not replace VATS procedures but has to be considered as a reasonable alternative to thoracotomy.

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CR15_PO / 13:40 – 13:45

ACUTE APPENDICITIS AFTER PERFORATED APPENDICITIS: DOUBLE APPENDIX

Selcan Turker Colak[1], Osman Gereklioglu[2], Cem Kaan Parsak[3], Kamuran Tutus[1], Seref Selcuk Kilic[1], Onder Ozden[1], Recep Tuncer[1], Murat Alkan[1]
[1]Çukurova University, Faculty of Medicine, Department of Pediatric Surgery, Adana, Turkey. [2]Ortadogu Hospital, Adana, Turkey. [3]Çukurova University, Faculty of Medicine, Department of General Surgery, Adana, Turkey

Abstract

Aim of the study: Double appendix (appendix vermiformis duplication) is a very rare pathology with a rate of 0.004%. If not recognized it can lead to serious medical problems. We aimed to present a patient who underwent laparoscopic appendectomy due to perforated appendicitis, who again underwent laparoscopic appendectomy due to acute appendicitis, 18 months later.

Case description: A 15-year-old female patient presented with abdominal pain that started 5 days ago. On physical examination and radiological evaluation revealed findings consistent with perforated appendicitis. Laparoscopic exploration revealed the appendix was perforated, abscess in the right lower quadrant and appendectomy was performed. Histopathological examination of the specimen was reported as appendicitis. Again, 18 months later, patient had tenderness in the right lower quadrant of the abdomen. Abdominal ultrasonograpy and computed tomography showed a 7.5 mm diameter structure of the appendix with fecaloid lumen in the rigth lower quadrant of the abdomen. This structure was evaluated as stump appendicities or diverticulitis. In the laparoscopic exploration, it was observed that the patient developed appendicitis again. It was not stump appendicitis. Appendectomy was performed in the patient who was thought to have TypeB2 appendix duplication. The histopathological result of the specimen was reported as accute appendicitis.

Conclusions: Double appendix is a very rare pathology. If it is retrocecally located, it may not be seen in a classical appendectomy procedure. Although it is rare, it is a pathology that should be kept in mind in patients who apply with the complaint of abdominal pain again after appendectomy.

CR16_PO16 / 13:45 – 13:50

Simultaneous thoracoscopic & Laparoscopic removal of hydatid cyst from lung & liver of an eight-year-old girl: A case report

Sohail Dogar, saqib qazi
Aga khan university, karachi, Pakistan

Abstract

Aim of the Study: Human infection with Echincoccus granulosus leads to the development of one or more hydatid cysts located most often in the liver and lungs, and less frequently in the bones, kidneys, spleen, muscles, and central nervous system. Signs depend on the location of the hydatid cysts and the pressure exerted on the surrounding tissues.

Case description: We report a case of an eight-year-old girl who presented with hemoptsis and hematemesis for 1 month. On examination she has a palpable abdominal mass. Ultrasound was done that showed a cyst in the hypochondrium and left hemithorax. It was reported as duplication cyst of duodenum and esophagus. CT scan was also done that goes in favor of hydatid cyst in liver and left lower lobe of the lung. Blood titer for echinococcus was done that turned out to be positive. Diagnosis of hydatid cyst was confirmed and Albendazole therapy was started. Surgery was planned 2 weeks later. Firstly, endocyst was removed from the liver laparoscopically. The liver was checked for any biliary leak and a drain was placed. Then the position was changed from supine to left lateral and endocyst was removed from the left lower lobe of the lung. Lung was checked for any leak and a chest tube was passed. Post operatively the girl developed pneumothorax on the 3rd day that was managed conservatively.

Conclusions: Hydatid cyst can be removed safely with laparoscopy and thoracoscopy simultaneously in uncomplicated cysts.

CR17_PO / 13:50 – 13:55

SPONTANEOUS EVISCERATION FROM UNCOMPLICATED UMBILICAL HERNIA IN AN INFANT: CASE REPORT

Perla Bonifazi[1], Giorgio Fava[1], Angelo Sartori[1], Anna Morandi[1], Francesca Maestri[1], Ernesto Leva[1,2]
[1]Department of Pediatric Surgery, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy. [2]Department of Clinical Sciences and Community Health, University of Milan, Milan, Italy

Abstract

Aim of the study: We report a case of spontaneous evisceration from umbilical hernia in a two-month-old girl, affected by congenital nephrotic syndrome.

Case description: A 19-day old infant was referred to our centre for renal failure in nephrotic syndrome, Finnish type. On arrival she presented generalized edema and a voluminuos, easily reducible, umbilical hernia (4cm diameter). The patient developed sepsis from *Streptoccocus pneumonie* requiring CPAP ventilation. The sepsis worsened patient's conditions leading to anasarca, albumin levels around 2 mg/dl. On clinical examination she had distended abdomen with bulging but easily reducible hernia leaking transudate [Fig1.a]. Three days after she developed spontaneous evisceration of the ileum from the umbilical hernia [Fig1.b]. She was taken to the operating room where the ileum was reduced in the abdomen and the fascial defect was closed with interrupted 2/0 non-absorbable stitches. The post operative course was complicated by the recurrence of the umbilical hernia (1,5cm diameter). Sepsis was successfully treated, and renal failure is under management. The patient is now 1 year old and in consideration of her general conditions repair of the recurrence has been delayed.

Conclusions: Chouikh et Al. reviewed 20 cases of spontaneous evisceration from umbilical hernia since 1956. Reported risk factors are ulceration, sepsis and conditions that raises intrabdominal pressure, usually in a debilitated infant. Mortality rate is low and the sudden surgical intervention carries low morbidity. Spontaneous evisceration remains a rare occurrence that should be kept in mind dealing with voluminous umbilical hernia in debilitated infants.

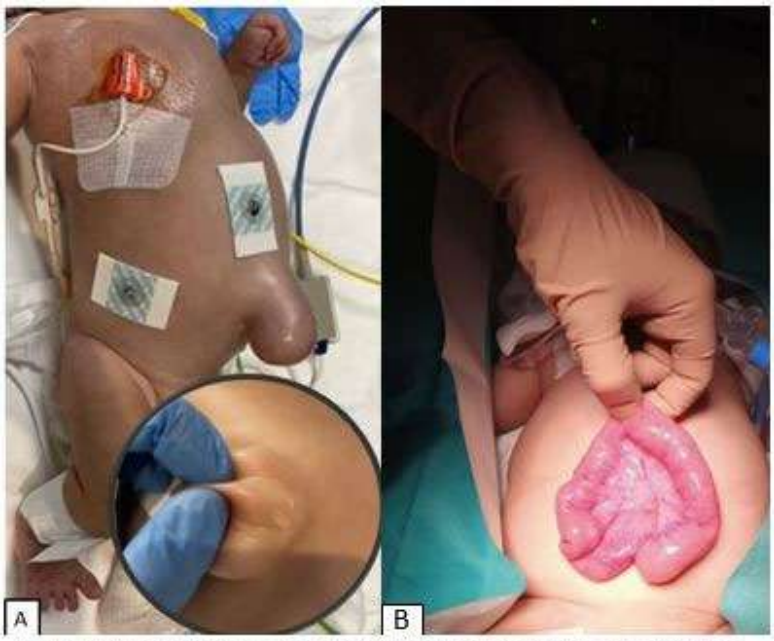

Fig. 1: A) Umbilical hernia, 4 cm of diameter, leaking transudate ; B) Ileum eviscerated from the umbilical hernia, without evidence of lesions.

CR18_PO / 13:55 – 14:00

PATENT OMPHALOMESENTERIC DUCT OF VERMIFORM APPENDIX: CASE REPORT AND SYSTEMATIC REVIEW

Patipol Chaimongkhon, Jiraporn Khorana
Chiang Mai University, Chiang Mai, Thailand

Abstract

Aim of the study: Patent omphalomesenteric duct is one of the causes of abnormal umbilical condition among pediatric patients. Generally, patent omphalomesenteric duct connects between the umbilicus and terminal ileum. Rarely, the duct was found to connect to vermiform appendix or caecum. This study, we aimed to report a case of patent omphalomesenteric duct of vermiform appendix.

Case description: A term female neonate presented with meconium discharge from the base of the umbilical stump with progressively swelling. At first, she was diagnosed patent omphalomesenteric duct. Umbilical exploration was performed and found that the tip of appendix attached to the umbilicus with ruptured. Appendectomy and umbilicoplasty was performed. There are 15 cases of patent omphalomesenteric duct of vermiform appendix that were previously reported. We found that most common clinical presentations are meconium or fecal discharged from umbilicus (56.25%). All patients had mobile cecum and underwent appendectomy. 60% of the patients was performed operation via umbilical exploration. Meckel diverticulum and umbilical hernia were not found in these cases. These findings suggested that the fistula from vermiform appendix to the umbilicus could be patent omphalomesenteric duct.

Conclusions: Patent omphalomesenteric duct of vermiform appendix is a rare congenital anomaly. The concern of the exist in this condition could help in the management of umbilical anomaly or incidental finding while umbilical port insertion in laparoscopic surgery.

CR19_PO / 14:00 – 14:05

SPLENOGONADAL FUSION BY SURPRISE

María Velayos López[1], Antonio Muñoz-Serrano[2], Karla Estefanía-Fernández[1], María San Basilio[1], Carla Ramírez Amoros[1], Ricardo Mejía[1], Arturo Almeyda[1], Virginia Amesty[1], Francisco Hernández Oliveros[1], Juan Carlos López Gutiérrez[1], José Luis Encinas Hernández[1]
[1]Hospital Universitario La Paz, Madrid, Spain. [2]Fundación Jiménez Díaz, Madrid, Spain

Abstract

Aim of the study**:** Splenogonadal fusion (SGF) is a rare congenital malformation with a complex clinical diagnosis that in most cases is incidental. Since its first description by Bostroem in 1883, only about 200 cases have been reported. We describe and illustrate a case of SGF and its treatment.

Case description**:** A 4-year-old male with extended Moebius syndrome came to our hospital with a left inguinal tumor. Physical examination revealed a lump that increased with Valsalva maneuvers, testicles in pouch and normal male genitalia. He presented an ultrasound with a diagnosis of left inguinal hernia. The patient was scheduled for inguinal herniorraphy, but on the day of the operation it was discovered that the left teste was absent in the inguinal canal and pouch. A new ultrasound was requested and showed an intra-abdominal left teste, so a laparoscopic orchidopexy was scheduled. Intraoperative findings showed an anomalous connection between the spleen and the left teste being diagnosed as a continuous splenogonadal fusion. A division and sealing between both elements were performed, ending with an orchidopexy of the left teste. The evolution was good, the patient is asymptomatic and with both testicles in bag.

Conclusions**:** The laparoscopic approach allows the diagnosis and treatment of SGF, although its recognition remains a great challenge due to its rarity. High clinical suspicion is needed to avoid misdiagnosis and unnecessary orchiectomy.

CR20_PO / 14:05 – 14:10

MINIMALLY INVASIVE APPROACH TO PEDIATRIC INTESTINAL OBSTRUCTION CAUSED BY SUPERIOR MESENTERIC ARTERY SYNDROME (WILKIE´S SYNDROME)

Gabriela Vallejo Chamorro, Roberta Patti, Diletta Doná, Giada Loria, Maria Grazia Scuderi, Vincenzo Di Benedetto
Department Of Pediatric Surgery, Policlinico San Marco-G.Rodolico, Catania University, Catania, Italy

Abstract

Aim of the Study: We report the clinical case of an adolescent affected by Wilkie´s Syndrome treated surgically using a minimally invasive approach.

Case description: A 15-year-old boy presenting repeated episodes of biliary vomiting for one week's associated bowel obstruction. Was admitted in our department: the physical examination highlights extreme thinness and skin pallor, soft abdomen and hypertympanism in the epigastric area. Abdominal CT confirmed the diagnosis of Wilkie´s Syndrome and showed the presence of Nutcracker syndrome of the right kidney. Surgery was performed using minimally invasive approach (transumbiical laparoscopic assisted). The adhesions were release laparoscopically and the loop of jejunum is identified about 30 cm from the Treitz, which is exteriorized through the umbilical breach, previously dilated with Alexis. Duodenal-jejunal bypass surgery with Roux-style loop were performed. Postoperative period was uneventful. No late complications were found after 17 months of follow-up.

Conclusions: Minimally invasive surgical techniques, such as the video-assisted approach used in this case, are preferred for several advantages, such as: reduced recovery and hospitalization times, better postoperative pain control, and lower hospitalization costs. This technique is safe in cases of intestinal obstruction. We decided to use a surgical technique different from the usual ones to resolve the patient's symptoms with greater certainty and avoid recurrence, as well as to take advantage of the already mentioned advantages of the minimally invasive approach.

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CR21_PO / 14:10 – 14:15

GIANT CELIAC TRUNK ANEURYSM REPAIR WITH AORTO-HEPATIC BIOSYNTHETIC BY-PASS

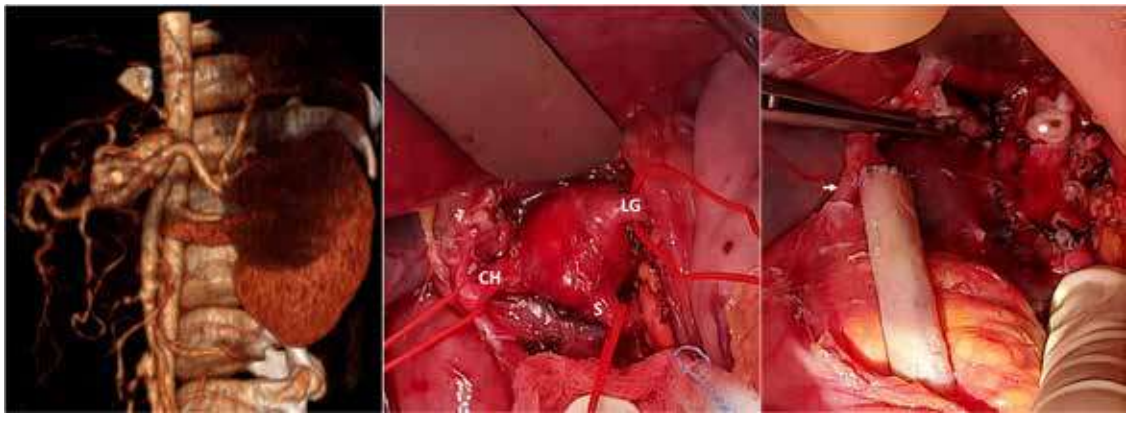
Carlos Delgado-Miguel[1,2], Elena Marín[3], Covadonga Mendieta[3], Manuel López-Santamaría[1], Francisco Hernández Oliveros[1]
[1]La Paz Children´s Hospital, Madrid, Spain. [2]Fundación Jiménez Díaz University Hospital, Madrid, Spain.
[3]La Paz University Hospital, Madrid, Spain

Abstract

Aim of the Study: Celiac trunk aneurysms are truly uncommon among splanchnic artery aneurysms, which are already rare in the paediatric population, although potentially lethal.

Case presentation: We present a 7-year-old boy with a multianeurysmal syndrome incidentally diagnosed by ultrasound in the context of acute abdominal pain. CT-angiography showed a fusiform aneurysmal celiac trunk dilatation (Figure 1). Screening study identified 8 fusiform aneurysms in upper limbs and another 2 in lower limbs.Elective surgery was performed by bilateral subcostal laparotomy, in which the celiac trunk aneurysm and its common hepatic, splenic and left gastric arteries were identified (Figure 2). Selective splenic and left gastric artery clamping were performed, with adequate hepatic and splenic flow through collateral vascularisation. Subsequently, aneurysm ligation and resection were performed at the neck and an aorto-hepatic by-pass was performed from the infrarenal aorta to the common hepatic artery, using a biosynthetic prosthesis of cross-linked ovine collagen with a polyester mesh endoskeleton measuring 8 cm in length and 5 mm in diameter (Figure 3). Adequate hepatic flow was checked with intraoperative Doppler after aortic unclamping. Patient was discharged 7 days after surgery, without postoperative complications. Histological study identified fibrosis in the aneurysm wall with non-specific chronic inflammation. Genetic study did not find mutations in genes associated with connective tissue disorders. Currently, 18 months after the intervention, the patient remains asymptomatic. Follow-up is performed with Doppler-ultrasound monitoring every 6 months.

Conclusion: Aorto-hepatic by-pass with biosynthetic prosthesis is an effective alternative in splanchnic aneurysms in children, although long-term follow-up is still needed.



CR22_PO / 14:15 – 14:20

PERICARDIAL TAMPONADE SECONDARY TO LATE PRESENTED BILIOMA IN A PATIENT WITH LIVING DONOR LIVER TRANSPLANTATION

Pari Khalilova[1], Ege Ekiyor[1], Nur Dikmen[2], Mehmet Ramoglu[3], Ergun Ergun[1], Suat Fitoz[4], Ercan Tutar[3], Meltem Bingol-Kologlu[1]
[1]Ankara University, Faculty of Medicine, Department of Pediatric Surgery, Ankara, Turkey. [2]Ankara University, Faculty of Medicine, Department of Cardiovascular Surgery, Ankara, Turkey. [3]Ankara University, Faculty of Medicine, Department of Pediatric Cardiology, Ankara, Turkey. [4]Ankara University, Faculty of Medicine, Department of Radiology, Pediatric Radiology, Ankara, Turkey

Abstract

Aim of the Study: Liver transplantation in children is the standard treatment for end-stage liver disease. Despite improvements in surgical techniques, life-threatening complications can occur even in the late postoperative period. This report aimed to present a patient who developed pericardial effusion secondary to bilioma as a rare complication six months after living donor liver transplantation.

Case Description: A 14-year-old female patient who had a Kasai operation at 4 months due to biliary atresia underwent living donor liver transplantation with a right lobe graft. Six months after transplantation, she was admitted for abdominal distension and vomiting. The computed tomography revealed a fluid collection with 77x89x49 mm diameters, located between the liver graft's medial border and the stomach's lesser curvature, extending to the subdiaphragmatic area to the level of the T12 vertebra. Additionally, increased pericardial collection with 2 cm thickness was observed. Echocardiography showed advancement to pericardial tamponade. The patient underwent emergency laparotomy with drainage of bilioma and pericardial effusion, a pericardial tube was placed, and a bile leak from the cut liver surface was found and repaired. During two weeks of follow-up, bilioma and pericardial collection resolved.

Conclusion: The development of biloma can occur due to anastomotic or non-anastomotic bile leak in a patient who had liver transplantation. They usually resolve with percutaneous drainage and living external bile duct stent to gravity. Pericardial effusion and tamponade can develop as a rare complication due to extensive dissection of the suprahepatic vena cava during transplantation.

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CR23_PO / 14:20 – 14:25

TRAUMATIC ABDOMINAL WALL HERNIA AFTER BLUNT ABDOMINAL TRAUMA: A CASE REPORT

Paolo Grassi[1], Antonio Di Cesare[1], Martina Ichino[1], Ilaria Marcoccio[1], Anna Morandi[1], Ernesto Leva[1,2]
[1]Department of Pediatric Surgery, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy. [2]Department of Clinical Sciences and Community Health, University of Milan, Milan, Italy

Abstract

Aim of the study: to present a case of traumatic abdominal wall hernia (TAWH): a rare outcome of blunt abdominal trauma.

Case description: a 5-years-old boy was taken to the emergency department after a wardrobe fell on his abdomen. Primary survey according to the Advanced Trauma Life Support protocol showed: normal parameters, no external bleeding, stable pelvis, Glasgow Coma Scale 15 and in the left mesogastric region a linear excoriation on the skin with reducible swelling, compatible with TAWH (figure 1). Haemoglobin was 12,4 g/dl with normal platelets, liver and renal function. Focused assessment with sonography in trauma showed free fluid in the splenorenal recess. The patient underwent abdominal CT-scan showing an anterior abdominal wall hematoma (10x8x2 cm), small bowel herniation through a wall defect (figure 1) and intra-abdominal free fluid. No intra-abdominal injury (IAI) nor free air were present. Exploratory laparotomy was performed with a longitudinal, paramedial incision over the TAWH. CT findings were confirmed, with complete section of the left rectus muscle, fascia and peritoneum, and no evidence of IAI. An interrupted suture with absorbable braided material was used for peritoneum, fascia and rectus, and intradermal suture for the skin. The post-operative course was uneventful.

Conclusions: TAWH is a rare consequence of blunt abdominal trauma, most frequently due to bicycle handlebar impact. High incidence of associated IAI is reported, mostly involving the bowel (Theodorou et al, 2021). Surgical exploration allows to rule out IAI that can be missed by CT, and to safely proceed with repair.

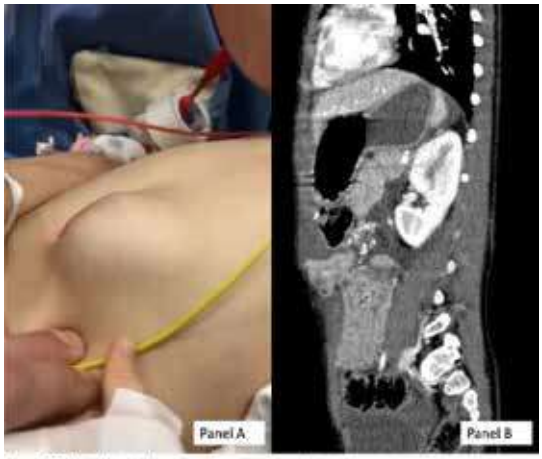

Fig. 1: A) left abdominal wall swelling at presentation in the emergency department; B) sagittal plane of CT showing the anterior abdominal wall hernia.

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CR24_PO / 14:25 – 14:30

EARLY ONSET COMPLICATION, NECROTIZING ENTEROCOLITIS, FOLLOWING CARDIAC CATHETERIZATION: TWO CASES REPORT

Yavuz Yilmaz[1], Irem Akbas[1], Emrah Senel[2]
[1]ankara City Hospital Department Of Pediatric Surgery, Ankara, Turkey. [2]ankara Yildirim Beyazit University, School Of Medicine, Department Of Pediatric Surgery, Ankara, Turkey

Abstract

Aim of the study: Cardiac catheterization has been increasingly utilized for the diagnosis and treatment of cardiac problems. Most complications have been associated with cardiac symptoms; NEC is a serious extra-cardiac complication. Here, the authors aimed to present two cases who developed NEC in the early period after cardiac catheterization.

Case description: Case 1 description: A-27-week female was applied on the post-natal 23rd day with transcatheter angiography PDA occlusion. Following 24-hours, due to the deterioration of the general condition, NEC was considered in the plain radiograph taken and the operation was performed. In the operation, the circulation of the 90 cm intestinal segment, which includes the ileum-cecum and transversal colon was poor, the relevant part was resected, and an ostomy was performed. Case 2 description: A balloon septoplasty was performed with transcatheter angiography for 3200 g, 37 weeks, female, born by cesarean section on the 1st day of birth due to prenatal diagnosis of great artery transposition. She was operated at approximately 20th hour, as pneumatosis intestinalis was seen in the stomach and right lower quadrant on plain radiography. In the laparotomy, diffuse pneumatosis intestinalis was seen in the stomach and the intestine, 10 cm of necrotic ileum at 20 cm distance from the cecum were resected, and an ileo-ileal ostomy was performed.

Conclusions: The potential causes may be associated with the vasospasm, multiple contrast injections and high osmolality. These effects occur immediately after the cardiac catheterization and increase the morbidity and mortality in the infants with a diagnosis of NEC.

13:30 - 14:30

Poster Presentation Session 11

Case Reports III / General I / Lowel Gastrointestinal I
(M2) Studio 1+2

Chair: Federica Pederiva (ITA)

Juan de Agustin (ESP)

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CR25_PO / 13:30 – 13:35

THE VENTRICULO-BILIARY SHUNT: A FEASIBLE ALTERNATIVE FOR LIQUOR DRAINAGE DESPITE GALL BLADDER SLUDGE

Jan Sabo[1], Yahya Ahmadipour[2], Philipp Dammann[2], Michael Berger[1]
[1]Pediatric Surgery Department, Essen, Germany. [2]Neurosurgery Department, Essen, Germany

Abstract

Aim of the Study: Hydrocephalus is a prevalent health problem that is encountered among pediatric surgeons and pediatric neurosurgeons. Standard treatment is either ventriculo-peritoneal (VP-) or if not feasible, ventriculo-atrial (AV) shunt. At times, neither is technically possible due to a variety of reasons, and ventriculo-biliary drainage has been described as a measure of last resort, even in the setting of preexisting sludge in the gallbladder.

Case description: We report a case of a 15-year-old girl with post-hemorrhagic hydrocephalus due to prematurity with subsequent installation of a VP shunt. He had to be removed at age of 15 years due to abdominal infection resulting from appendicitis. Multiple attempts to reimplant the shunt into the intraperitoneal cavity or the omental bursa led to recurrent reabsorption failures. Subsequently, a VA shunt was performed but had to be externalized 6 months thereafter due to massive thrombosis of superior vena cava. With no other option to fall back on, we elected to place the shunt into the gallbladder. At time of surgery, the gallbladder had significant sludge, which was washed out before placement of the shunt. Following the surgery, the sludge reappeared but did not seem to interfere with liquor drainage. The patient recovered well and continued to show sludge the next 3 months. Ursodesoxychol acid had been initiated and the sludge completely disappeared. The child is now 1 year out with no episodes of cholangitis or neurological deterioration during this time.

Conclusions: Ventriculo-biliary (VB) shunts are a feasible alternative and should be taken into consideration if other options fail.

CR26_PO / 13:35 – 13:40

SACROCOCCYGEAL YOLK SAC TUMOUR IN 19-MONTH INFANT: TYPICAL CASE WITH UNUSUAL FINDING

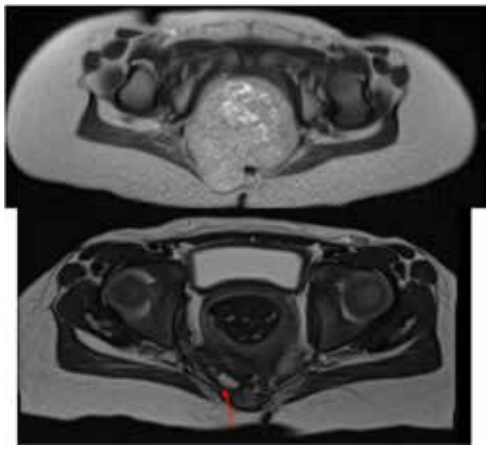
Paulina Vargova, Paolo Bragagnini Rodriguez, Ainara Gonzalez Esgueda, Paula Salcedo Arroyo, Andrea Santinno Tenorio, Ricardo Escartin Villacampa
Hospital Universitario Miguel Servet, Zaragoza, Spain

Abstract

Aim of the study: Yolk sac tumor is the most frequent malignant germ cell tumor in the sacrococcygeal region and the second most frequent pediatric extragonadal germ cell tumor after teratomas. It can metastasize to the liver and lungs. Although the tumours arise at the base of the spine from totipotent cells, intraspinal extension is infrequent. We reviewed other similar cases in the literature, in total, we found only 8 cases reported in the literature.

Case description: We present 19-month-old girl with 15 days constipation, which did not improve with disimpaction treatment. She presented progressive abdominal pain, absence of stools, an antalgic gait of the right leg and urinary incontinence. Rectal examination revealed a mass in the posterior rectum and a poorly demarcated paravertebral nodule. Complementary tests showed a pelvic mass of 63x55x64mm at presacral level, with part of the tumor inside the sacral canal imprinting the neural sac and pulmonary metastases. Ultrasound-guided biopsy was performed and the anatomopathological examination reported yolk sac tumour. Chemotherapy was administered with good response. After that, presacral tumor remnant with intrathecal component was evidenced. Surgical intervention was performed in collaboration with neurosurgery: laminectomy, excision of the mass and the coccyx and release of sacral roots. The patient is doing well after 19 months, free of disease, with good sphincter control.

Conclusions: Yolk sac tumour should always be kept in the differential diagnosis when dealing with neoplasm of the sacrococcygeal region. Intraspinal extension, although infrequent, is possible, with few cases described in the literature.



CR27_PO / 13:40 – 13:45

AZYGOS VEIN AS THE LAST ALTERNATIVE INSERTION SITE OF HICKMAN.

Vasiliki Magaliou, Eleni Boutoutridou, Eleftheria Georgiou, Christos Stefanidis, Aikaterini Tzantzaroudi, Georgios Tsikopoulos
Hippokration Hospital, Thessaloniki, Greece

Abstract

Aim of the study: Patients with Short Bowel Syndrome (SBS) are depended on long term Total Parenteral Nutrition (TPN) via Central Venous Catheters (CVCs). Their contamination or accidental removal may result in loss of all accessible central veins. Azygos vein may be proved an effective alternative in such cases.

Case description: We present two cases of SBS due to multiple intestinal atresias and meconium peritonitis respectively. Complications of long term TPN via Hickman CVCs resulted in loss of all accessible central veins. After failure of US-guided percutaneous placement of CVC, as a last attempt the posterior mediastinum was accessed through open mini-thoracotomy and Hickman CVC 2,7 Fr and 4,3 Fr were inserted respectively via the azygos vein. In both cases, this atypical site proved to be a valuable alternative.

Conclusions: Placement of Hickman CVCs is vital for the survival of patients with SBS. Azygos vein is proposed as the last but mostly precious alternative in case of loss of any other accessible sites.

GE01_PO / 13:45 – 13:50

INITIAL EXPERIENCE OF A PEDIATRIC AERODIGESTIVE UNIT: PATIENTS BENEFITS AND COSTS REDUCTION

Carlos Delgado-Miguel[1,2], Francisco Climent[1], Olga De la Serna[1], Ignacio Rabanal[1], Manuel Molina[1], Gonzalo Ruiz[1], Francisco Hernández Oliveros[1], Carlos De la Torre[1]
[1]La Paz Children´s Hospital, Madrid, Spain. [2]Fundación Jiménez Díaz University Hospital, Madrid, Spain

Abstract

Aim of the Study: Advances in the care of complex neonatal and pediatric patients have led to a growing population of children with chronic multisystemic diseases, whose management is difficult and costly, often requiring multidisciplinary assessment, numerous procedures, and multiple hospitalizations. Our aim is to describe our initial experience after the implementation of the Aerodigestive Unit and the cost-effectiveness analysis of the anesthetic and surgical procedures performed.

Methods: A prospective longitudinal study was performed on patients treated between January 2021-December 2022 by this Unit, formed by specialists from different pediatric disciplines: Pediatric Surgery, Complex Pediatrics, Pneumology, Gastroenterology, Otorhinolaryngology, Rehabilitation, Radiology, Anesthesia and Neonatology. Demographic variables, underlying diseases, procedures performed and associated economic costs were analyzed.

Main results: A total of 96 patients (56 males; 40 females) were included, with a median age of 3.6 years (range 0-15.5 years). Syndromic involvement was observed in 64 patients (66.7%), identifying some genetic disorder in 28 of them. A total of 268 surgical interventions were performed in 102 anesthetic procedures, with a mean of 2.6±1.4 interventions per anesthetic procedure. The median associated cost per procedure was €750 (interquartile range: €480-1260). A 65% reduction in associated costs was observed when compared to the total cost of the sum of the same procedures independently (2250€ vs. 750€; p<0.001).

Conclusions: This study presents the results of the first Aerodigestive Unit reported in Europe, which offers a multidisciplinary management of patients with complex aerodigestive disorders with a reduction in costs derived from the reduction of anesthetic and surgical procedures.

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GE02_PO / 13:50 – 13:55

PRELIMINARY RESULTS AFTER APPLYING AN ASP IN PEDIATRIC POPULATION WITH COMPLICATED APPENDICITIS

Miguel Angel Cárdenas Elias[1], Sara Diaz Martin[2], Chelsy Lasso Betancor[1]
[1]Department of Pediatric Surgery, Hospital Universitario de Canarias, Tenerife, Spain. [2]Department of Pediatrics, Hospital Universitario de Canarias, Tenerife, Spain

Abstract

Aim of the Study: To analyze the impact of the use of an antimicrobial stewardship program (ASP) in children with complicated appendicitis.

Methods: Data from January-2021 to December-2022 was collected from a regional appendicitis database in patients under 15-years old. We evaluated the use of broad-spectrum antibiotics, Days of Therapy (DOT), Length of Stay (LOS) and complications rate, before and after the implementation of an ASP (group A and B, respectively) in complicated appendicitis (CA), previous protocol approval.

Main results: A total of 153 children were diagnosed with appendicitis, 50.2%(n=77) were complicated. The mean age was 8.8 years-old (3-14 years). No statistical differences were found in terms of demographic variables, LOS and complications-rate in both groups. The DOT in group-B decreased 1,8 days($p>0.05$); and excluding the appendix mass, the reduction was 3 days($p<0,05$). An important reduction in the use of broad-spectrum antibiotics (piperacillin/tazobactam, carbapenems, clindamycin and quinolones) was observed in group B, with an increase of 91,8% for ceftriaxone/metronidazole.

When we evaluate according to the type of appendicitis, we observed reduction of DOT in local peritonitis(non-perforated) in 3,5 days in group B ($p<0,05$) without any complications, and 2,8 days of reduction, in diffuse peritonitis(p:0,05).

Conclusions: The implementation of ASP has improved the use of broad-spectrum antibiotics and DOT, without increased complications in CA. Although our data is limited, we believe more difference could be found in the future. More studies are needed in the pediatric population to define a best strategy for this pathology.

GE_PO03 / 13:55 – 14:00

TRANSITIONAL CARE IN PEDIATRIC SURGERY: A KEY STEP TO TAKE IN PEDIATRIC SURGERY. SINGLE CENTRE EXPERIENCE

Giovanna Riccipetitoni[1], Mirko Bertozzi[1], Alessandro Raffaele[2], Luigi Avolio[2], Piero Romano[2], Silvia Cavaiuolo[2], Carlo Ferlini[1], Marta Gazzaneo[1]
[1]IRCCS Policlinico San Matteo, University of Pavia, Pavia, Italy. [2]IRCCS Policlinico San Matteo, Pavia, Italy

Abstract

Aim of the Study: Transitional Care (TC) for patients with rare surgical diseases represents one of the main tasks for Pediatric Surgeons. Transitioning from pediatric to adult care setting is often challenging with high rate of dropout at follow-up. We report the results of the first three years of a prospective study on TC performed in our Institution (ERNS for 7 rare diseases).

Methods: The project, approved by the Ethics Committee, includes data-register of all patients divided into 6 Groups by pathology (Gastrointestinal, Urogenital, Oncology, Thoracic, Neurodevelopment and Miscellaneous). We developed multidisciplinary clinics with both pediatric and adult experts, specially trained for TC. Patient's QoL was evaluated comparing SF36 questionnaire at T0 (adhesion to protocol) and T1 (minimum follow-up 12 months). Further questionnaires were developed to assess patients and caregivers' satisfaction. The study will last 10 years.

Main results: We included 294 patients, aged 13–25 years, M:F 1.4:1, from 11 regions of Italy. The prevalence of the diseases was: Gastrointestinal 37%; Urogenital 28%; Oncology 16%; Thoracic 4%; Neurodevelopment 4%; Miscellaneous 11%. Statistical analysis with JASP software and comparison of results with T Student was performed in 156/294 patients (follow-up>12 months). Five groups showed positive results, statistically significant ($p<0.001$) in the areas of improvement of physical conditions, perception of health, and social integration.

Conclusions: TC seems to improve QoL of patients and meet caregivers' satisfaction. Thanks to TC prospective studies will be possible to evaluate long term outcome of rare disease, helping in a critical review and improving future surgical approaches.

GE04_PO / 14:00 – 14:05

UNCOMPLICATED PERIANAL ABSCESSES IN INFANTS: IS SYSTEMIC ANTIBIOTICS AND SURGICAL DRAINAGE NECESSARY?

Arturo Almeyda Paz, Ricardo Mejía Andrino, Carla Ramírez, Maria Sanbasilio, Lucas Moratilla-Lapeña, Maria Sarmiento, Karla Estefania, Maria Velayos, Alejandra Vilanova, Leopoldo Martinez, Juan Carlos Lopez-Gutierrez
Hospital Universitario La Paz, Madrid, Spain

Abstract

Aim of the Study: Although uncomplicated perianal abscesses (PA) are frequent in children, the need for systemic antibiotic treatment (ATBs) or surgical drainage (SD) is controversial. Our aim is to know the behaviour, treatment and evolution of children treated for PA in our centre.

Methods: Retrospective review of patients under 2 years of age diagnosed with uncomplicated PA from 2018 to 2022. We analysed sex, age, treatment, number of episodes and long-term evolution.

Main results: Thirty-eight patients were included, 35 males (92%) with a total of 97 episodes. The age of onset of the first PA was 3 months (1-6). Two thirds had less than 3 episodes and the remaining third 3-6. ATBs (17), topical (4) and combined (13) were prescribed. SD was performed in 24 patients (60%). The age of definitive cure was 10 months (4-22). Exploration under anaesthesia was performed in 6 cases at an age of 15 months (6-21) and 3 recurrences on average (0-5) with a fistula found in 4 of them. The number of recurrences was not related to the use of ATBs [1.7 vs 1.0 (p=0.67)] or SD [1.79 vs 1.14 (p=0.84)]. Fistula development was not related to previous SD [4vs2 (p=0.84)].

Conclusions: In our experience, neither the use of ATBs nor SD decreases the number of recurrences or advances healing. We recommend the creation of a specific protocol that includes conservative treatment of uncomplicated PA with topical antibiotics and the performance of SD only in those that do not respond to such treatment.

LG01_PO / 14:05 – 14:10

ANASTOMOSIS PLICATION IN LATE DIAGNOSED HIRSCHSPRUNG DISEASE ABOUT 43 CASES

Najoua Aballa, Salma Foura, Elouafi Kamili, Karima Fouraiji, Mohamed Oulad Saiad
General Pediatric Surgery, Mother and Child Department, Mohamed Vi Hospital, Cadi Ayyad University, Marrakesh, Morocco

Abstract

Aim of the Study: How to manage anastomosis incongruence in late diagnosed Hirschsprung disease (HD) and how to avoid caliber discrepancy.

Methods: A retrospective study of all patients diagnosed with an Hirschsprung disease, who underwent a never described before technique of a plication procedure to avoid anastomosis incongruence, in our hospital from January 2009 to December 2022. Data were analyzed for clinical presentations, investigations, surgical procedures, and post-operative outcome.

Main results: Forty-three patients who underwent Hirschsprung surgery associated to a plication procedure to avoid anastomotic incongruence. The average age is five and a half years (2-16). There were 4 cases of ultra-short segment type, 35 cases of rectosigmoid type, 3 cases of ganglion cell deficiency in descending colon, and 1 case of transverse colon. Rectal irrigation was effective in 37 patients. Four patients underwent transverse cellular colostomy. Thirty-six patients underwent one rectal pull through the rectum. Evaluation of postoperative outcomes using the Pediatric Incontinence and Constipation Scoring System showed normal incontinence function in all our patients, but constipation-related contamination in 6 patients.

Conclusions: Anastomosis incongruence can be challenging, especially in late diagnosed Hirschsprung disease; we describe a plication procedure to avoid it; and thus, to ensure less postoperative complication and good long-term outcome

LG02_PO / 14:10 – 14:15

CAN OBJECTIVE EVALUATION OF RADIOLOGIC IMAGING IN MALE NEWBORNS WITH ANORECTAL MALFORMATION AID PLANNING OF PRIMARY REPAIR?

Anna Morandi[1], Francesca Maestri[1], Martina Ichino[1], Antonio Di Cesare[1], Maria Angela Pavesi[2], Ernesto Leva[1,3]
[1]Department of Pediatric Surgery, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milano, Italy. [2]Pediatric Radiology Unit, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milano, Italy. [3]Department of Clinical Sciences and Community Health, University of Milan, Milano, Italy

Abstract

Aim of the study: To identify objective tools to interpret imaging of male newborns with anorectal malformation (ARM) type imperforate anus (IA) or rectourinary fistula (RUF).

Methods: At our Centre, since 2010 primary repair of RUF (PRUF) is offered for newborns with meconium evidence in urine. Prone cross-table lateral x-ray (CTLxRs) of males born in 2012-2022 with IA or RUF at our Center were prospectively and blindly evaluated by 3 observers independently. Pubococcygeal (PC) and ischiatic (I) lines were considered to determine rectal pouch level. We described "pigeon sign" when rectal pouch ended with a beak-like image, suspicious for RUF. RUF was defined rectobulbar (RB) when rectal pouch was below I, rectoprostatic (RP) when between PC and I, rectovesical (RV) above PC line. Intraoperative diagnosis was recorded. Interobserver concordance and concordance with intraoperative diagnosis were evaluated with Fleiss' kappa. Sensitivity, specificity, positive (PPV) and negative predictive values (NPV) of "pigeon sign" were calculated.

Main results: Since 2012, 114 patients received anorectoplasty (43.8% males); 23 had IA or RUF, 13/23 (2 IA, 9 RB, 1 RP, 1 RV) underwent complete imaging at our Center. Nine newborns underwent PRUF. Evaluating CTLxRs, interobserver agreement was: 69.2% (k=0.54) on pouch ending, 84.6% (k=0.69) on "pigeon sign", 76.9% (k=0.69) on hypothesized diagnosis; concordance with intraoperative diagnosis was 66.6% (k=0.56). "Pigeon sign" had 75% sensitivity, 100% specificity, 100% PPV, 50% NPV.

Conclusions: PC and I lines, and "pigeon sign" are effective tools in ARM diagnosis on CTLxR. Adequate CTLxR interpretation could support neonatal primary repair.

13:30 - 14:30

Poster Presentation Session 12

General II

(M2) Studio 1+2

Chair: Lucie Pos (CZE)

Ramon Gorter (NED)

GE05_PO / 13:30 – 13:35

Correction of congenital anomalies in the context of 'lethal' trisomies – time to rethink?

Jennifer Billington, Sherif Manzour, Stavros Loukogeorgakis, Simon Blackburn, Dhanya Mullassery, Kate Cross, Stefano Giuliani, Joe Curry, Finella Craig, Paolo De Coppi
Great Ormond Street Hospital, London, United Kingdom

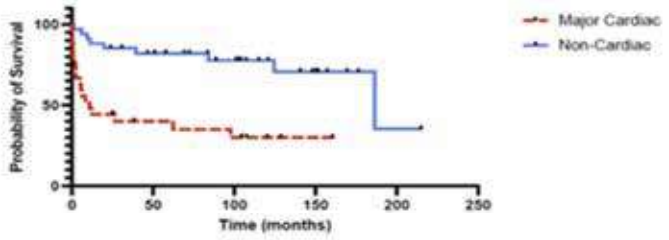
Abstract

Aim of the Study: There is ongoing ethical debate regarding the role of surgery in infants with trisomy 13 (Patau) and 18 (Edward's). This retrospective review aims to identify the impact of palliative surgery on overall survival.

Methods: A retrospective review of babies with a diagnosis of T13/T18 referred to our Palliative Care Service from 2006-2022 were included (registered service evaluation #4373). Patient demographics postnatally confirmed congenital anomalies and surgical interventions performed were identified. Primary outcome was short/long-term survival.

Main results: 61 babies were identified:65% female, 41/61 with T13(67%) and 20/61 with T18(33%). 57/61(93%) infants had a congenital anomaly that required surgical repair; of these, 41(72%) were considered for surgery at MDT forum and 32/41(78%) received surgery to correct their anomaly. Considering those that underwent surgery,15/32 vs 13/25 had mosaicism, 15/32 vs 12/25 had a major cardiac defect. Median survival in those with and without major cardiac defect was 10.89m vs 186.3m (logrank HR 0.24 [0.11-0.53] $p<0.0001$). Cardiorespiratory disease was the most common cause of death. Cox regression analysis was performed to explore associated effect on survival. Major cardiac anomalies (HR 4.8 [2.0-11.4]; $p<0.001$) were the only significant factor associated with mortality. Mosaicism (HR 0.49 [0.22-1.06]; $p=0.07$) and receiving surgery for an anomaly (HR 0.58 [0.25-1.30]; $p=0.18$) were not statistically associated with survival. Presently, 34/61(56%) are alive, 8/26(31%) with major cardiac disease and 26/35(74%) without.

Conclusion: MDT discussion with a tertiary centre is recommended noting the associated mortality risk with major cardiac defects.



Mortality (all-cause, all-time)	Mosaic	Complete Trisomy	Overall (n=61)
Major Cardiac	5/10 (50%)	13/16 (82%)	18/26 (69%)
No Major Cardiac	7/22 (32%)	2/13 (15%)	9/35 (26%)
	12/32 (38%)	15/29 (52%)	27/61 (44%)

GE06_PO / 13:35 – 13:40

CONSCIOUS SEDATION FOR DAY SURGERY ON INFANTS AND CHILDREN IN A COMMUNITY SETTING. IS KETAMINE SAFE AND EFFECTIVE?

Zahra Ahmed[1,2], Shiban Ahmed[2]
[1]University College London Medical School, London, United Kingdom. [2]Children's Surgical Consortium UK, Stoke-on-Trent, United Kingdom

Abstract

Aim of the study: Ketamine has both a sedative and an analgesic effect. It is an increasingly popular choice for procedural conscious sedation in paediatric day surgery, yet there is very little published literature on its use for conscious sedation in infants. Conscious sedation is also cheaper than a general anaesthetic. The objective of our study is to investigate the effectiveness and the number of adverse events when using ketamine for conscious sedation and demonstrate its safety profile for use in paediatric day surgery.

Methods: A single-centre, single surgeon, single procedure 5-year longitudinal prospective review of 985 children (mainly infants) undergoing elective day care surgery using ketamine for conscious sedation between 2016-2020. We age-stratified our cohort and assessed patients' pre-anaesthetic co-morbidities based on the American Society of Anesthesiologists (ASA) classification system.

Main results: 91.2% of patients were between 4 weeks-1 year and 98.4% were ASA Class 1. Most children received ketamine intramuscularly and only 3 children required additional ketamine to maintain conscious sedation. There was no failure of sedation or serious adverse events and there were 38 mild adverse events in 36 patients 3.65% of patients (Table 1). The most common adverse event occurring in 14 children was hypersalivation.

Conclusions: Ketamine is a safe drug to use for conscious sedation and should be considered more for children undergoing elective day-care surgery however it is imperative that staff conducting procedures must have advanced training and experience in paediatric and neonatal airway management and resuscitation.

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GE07_PO / 13:40 – 13:45

CONTRALATERAL SURGICAL EXPLORATION OR NOT DURING INGUINAL HERNIA REPAIR IN INFANTS (HERNIIA-TRIAL): A RANDOMIZED CONTROLLED TRIAL

Sanne Maat[1], Kelly Dreuning[1], Han Anema[1], Jos Twisk[2], Gerda Zijp[3], Jasper Been[4], Ruben Visschers[5], Olivier Theeuws[6], Mart Bender[7], Hester Langeveld[4], Robertine van Baren[8], Ernst van Heurn[1], Joep Derikx[9]
[1]Amsterdam UMC, Amsterdam, Netherlands. [2]AmsterdamUMC, Amsterdam, Netherlands. [3]HagaZiekenhuis, Den Haag, Netherlands. [4]Erasmus MC, Rotterdam, Netherlands. [5]MUMC+, Maastricht, Netherlands. [6]CHC Liege, Liege, Belgium. [7]MMC, Veldhoven, Netherlands. [8]UMCG, Groningen, Netherlands. [9]Amsterdam UMC, Amsterdam, New-Caledonia

Abstract

Aim of the Study: Evaluate the effectiveness of contralateral exploration during unilateral inguinal hernia repair in children aged 0-6 months with unilateral inguinal hernia.

Methods: This multicenter randomized controlled trial included children aged 0-6 months undergoing primary unilateral hernia repair. Participants were randomly assigned (1:1) to unilateral inguinal hernia repair without (UR-group) or with contralateral exploration and eventual patent processus vaginalis closure (CE-group). Primary outcome was proportion of infants needing re-operation related to inguinal hernia within one year after primary repair. Secondary endpoints include total time of procedure and hospital admission(s); anesthesia and surgery complications within one year after primary hernia repair. Statistical testing is performed using Chi-square tests and t-tests (two-sided, α=0.05) according to intention-to-treat-principle.

Main results: A total of 367 infants were included (UR-group: n=180, CE-group: n=187). Re-operation was performed in 12 UR-group patients and in two CE-group patients (6.7% vs 1.1%, p=0.007). Six re-operations in the UR-group were because of metachronous contralateral inguinal hernia. Other re-operation indications were ipsilateral recurrence and orchidopexy (UR-group n=4 and n=2 respectively, CE-group n=1 and n=1 respectively). Mean total procedure time was shorter in the UR-group (UR: 55 (SD 21), CE-group: 68 (SD 24) minutes, p<0.001). Hospital admission time did not differ between study groups (UR-group: 0.9 (SD 1.1), CE-group: 1.4 (SD 3.6) days, p=0.16). Complications did not differ between groups.

Conclusions: Contralateral exploration results in less re-operations in children younger than six months with unilateral inguinal hernia. Shared decision making regarding inguinal hernia repair with or without contralateral exploration should be implemented as standard care.

GE08_PO / 13:45 – 13:50

FEASIBILITY AND SAFTEY OF NEONATAL INTENSIVE CARE UNIT (NICU) BED-SIDE SURGERY IN PRE-TERM BABIES

Bshaer Albihani, Ahmed Mai, Hanan Said, Yasir El Dahshan
International Medical Center, Jeddah, Saudi Arabia

Abstract

Aim of the Study: Moving vitally unstable critically ill neonates, in urgent need of surgery for life-threatening conditions, to the operating theater involves substantial risks and could increase morbidity and/or mortality. To evaluate the outcome, feasibility, and safety of bedside NICU surgery in acute emergencies.

Methods: Cases operated on in the NICU between May 2010 and December 2022 were included in a retrospective review of the diagnosis, preoperative condition, stability of the patient, procedures performed, and their consequences. Muscle biopsies, central line insertion, and percutaneous peritoneal drain insertion, and silo insertion for gastroschisis were excluded.

Results: Thirty-four surgical procedures were performed; including 28 laparotomies, bowel resections, and/or stoma (NEC), One (1/28) had bowel atresia and primary anastomosis. In five cases, a mini laparotomy for peritoneal lavage, washout, and catheter insertion was performed, one case required a liver biopsy during this procedure. One case had a ruptured omphalocele repaired. Birthweights ranged between 650 g and 2000 g. Gestational age ranged from 26 to 32 weeks. All were intubated and mechanically ventilated. There was no mortality directly related to the surgical procedure, being bedside, or intra-operatively. Postoperatively, one patient developed a wound infection and disruption; and another one developed renal failure which needed peritoneal dialysis.

Conclusions: Bedside surgical procedures in the NICU are feasible and safe with experienced surgeons, under the supervision and presence of both an experienced neonatologist and pediatric anesthetist. The procedure could be done in NICU without needing a special area, planning for the NICU operative room would be perfect.

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GE09_PO / 13:50 – 13:55

ASSOCIATIONS BETWEEN Th1-RELATED CYTOKINES AND COMPLICATED PEDIATRIC APPENDICITIS

Matilda Elliver[1], Martin Salö[1,2], Bodil Roth[3,4], Bodil Ohlsson[3,4], Lars Hagander[1,2], Johanna Gudjonsdottir[1,5]
[1]Department of Clinical Sciences, Pediatrics, Lund University, Lund, Sweden. [2]Department of Pediatric Surgery, Skåne University Hospital, Lund, Sweden. [3]Department of Internal Medicine, Skåne University Hospital, Malmö, Sweden. [4]Department of Clinical Sciences, Lund University, Malmö, Sweden. [5]Department of Surgery, Skåne University Hospital, Malmö, Sweden

Abstract

Aim of the Study: The pathogenesis of appendicitis is not fully understood, and diagnosis can be challenging. Previous clinical and epidemiological data has suggested an association between a T helper (Th) 1-dependent immune response and complicated appendicitis. The aim of the present study was to evaluate the associations between several Th1-associated cytokines with the risk of complicated appendicitis in children.

Methods: A prospective cohort study including children <15 years with appendicitis. Blood samples were collected at the time of evaluation at the Pediatric Emergency Department and analyzed for serum concentrations of interleukin (IL)-1β, IL-6, IL-10, IL-17α and tumor necrosis factor (TNF)-β. Associations were evaluated through univariate and multivariable logistic regression. Appendicitis severity was determined through histopathological examination. The study was approved by the regional ethics committee (Regionala Etikprövningsmyndigheten, Lund, Sweden, DNR 2013/614).

Main results: A total of 138 children with appendicitis were included. The median age was 10 (IQR 8-12) years, 86 (62%) were boys and 59 (43%) had complicated appendicitis. Children with complicated appendicitis had significantly higher concentrations of serum IL-6, IL-10 and TNF-β. In the univariate logistic regression, higher concentration of IL-6 was associated with an increased risk of complicated appendicitis (OR 1.001 (1.000-1.002), p=0.018), which remained in the multivariate logistic regression after adjustment for age, symptom duration and presence of appendicolith (1.001 (1.000-1.002), p=0.022). Serum concentrations of IL-1β, IL-10, IL-17α, TNF-β were not significantly associated with the risk of complicated appendicitis.

Conclusions: Higher concentrations of IL-6 were associated with an increased risk of complicated appendicitis.

GE10_PO / 13:55 – 14:00

MICROBIOLOGY AND BACTERIAL RESISTANCE IN PAEDIATRIC APPENDICITIS IS CHANGING

Romir Patel, Hetal Patel, Mitul Patel, Ingo Jester
Birmingham Children's Hospital, Birmingham, United Kingdom

Abstract

Aim of the Study: Appendicitis is one of the most common conditions presenting to surgeons. Reports about best postoperative antibiotic management and opinions regarding non-operative treatment with antibiotics remain controversial. Growing concerns over antibiotic resistance led us to analyze changes of organism profiles and antibiotic susceptibility in our paediatric population developing appendicitis.

Methods: Retrospective analysis of a prospective database from 2015-2021

Main results: 858 patients had an appendicectomy with bacteria isolated in 560 patients (65.3%). Median age 9.5 years (range: 12 days-17 years). Most commonly isolated bacteria was Escherichia coli (E.coli) (498 isolates, 58.0%). E. coli resistance to cefpodoxime-proxetil (CPD) increased from 7% to14% during the study period (p=0.0045). E. coli resistance to co-amoxiclav, ciprofloxacin, amoxicillin, and gentamicin remained unchanged. Pseudomonas aeruginosa was the second most common isolate (110), followed by Streptococcus anginosus (104 isolates), Klebsiella oxytoca (6 isolates, 1 producing ESBL), and Klebsiella Pneumoniae (5 isolates). All but one isolate of Pseudomonas was susceptible to ciprofloxacin and every isolate of Streptococcus was susceptible to penicillin. All isolates of Klebsiella were susceptible to gentamicin, ciprofloxacin, meropenem, and co-amoxicillin.

Conclusions: There is a statistically significant increase in the laboratory resistance of E. coli to cephalosporins though this has not had clinical impact here yet. With more widespread use of non-operative appendicitis management, regional differences in morbidity following conservative management or after appendicectomy are to be expected. Therefore, it is necessary to monitor the microbiology spectrum and resistance to ensure adequate empiric therapy as cephalosporins may not continue to provide adequate cover for paediatric appendicitis.

GE11_PO / 14:00 – 14:05

CONCERNS WITH TOXICITY OF ESCHAROTIC AGENTS IN CONSERVATIVE MANAGEMENT OF OMPHALOCELE: A SYSTEMATIC REVIEW

Ayman Goneidy, Amulya Saxena
Chelsea and Westminster Hospital, London, United Kingdom

Abstract

Aim of the Study: Conservative management of omphaloceles is undertaken using escharotic agents. There has been no consensus on the use of these topical applicants. The aim of this systematic review is to identify topical escharotics specifically with regards to their toxicity in the management of omphaloceles.

Methods: A 5-decades (1963-2021) systematic review was performed according to the PRISMA guidelines of all English publications in the MEDLINE and EMBASE databases from 1963-2021. Search words were omphalocele OR exomphalos AND conservative OR non-operative AND management. Studies were scrutinized for demographics, co-morbidities, topical escharotic agent, complications, and mortality.

Main results: 1243 reports were identified; and after excluding ineligible studies, 42 studies were included offering 822 patients for analysis. Median gestational age from 16 studies was 36 weeks (29-39) and median birth weight in 21 studies was 2.6kg (1.3-3.1). Topical escharotic agents in order of frequency of their application were: 2% aqueous eosin (n=271), Silver solution or dressings (n=136), Povidone iodine (n-=98), Mercurochrome (n=91), Dressing only (n=75), Honey (n=53), Gentian violet (n=47), mixed agents (n=42) and saline (n=18). Reported toxicity described thyroid dysfunction with Povidone iodine, high blood alcohol concentration with high-concentrated alcohol, Mercury toxicity associated liver/kidney dysfunction with Mercurochrome. The present trend shows increased use of honey dressings since 2014. Mortality was reported at 22% (158/714) mostly due to associated co-morbidities and was not directly related to escharotic agent toxicity.

Conclusions: Povidone iodine, mercurochrome and high-concentrated alcohol are reported to be associated with toxicity. Honey based dressings have shown favorable outcomes in the last decade.

GE12_PO / 14:05 – 14:10

SAFETY AND COST-EFFECTIVENESS OF SPINAL ANESTHESIA (SA) IN NEONATES AND INFANTS UNDERGOING INGUINAL-SCROTAL AND PENILE SURGERY

Ahmed Mai, Bshaer Albaihani, Hanan Said, Yasser El dahshan, Samira Ahmed
International Medical center, Jeddah, Saudi Arabia

Abstract

Aim of the Study: To assess the safety and efficacy of spinal anesthesia (SA) in newborns and infants undergoing inguino-scrotal and penile surgery.

Methods: A retrospective single center experience, from July 2016 to January 2023, where 167 newborns and infants who had surgery under spinal anesthesia via hyperbaric bupivacaine: (0.5mg/kg=1ml/kg in less than 5 kg) and (0.4 mg/kg=0.8ml/kg in infant weight between 5-15 kg) by 2 pediatric anesthesiologists. Demographic data, prematurity history, comorbidities, technical data, cardiovascular stability, complications, and supplementary drugs were documented. The effectiveness and quality of anesthesia was reported upon by the operating surgeons, during and at completion of surgery.

Main results: Appropriate SA was achieved in 94.61% of cases; and at the first attempt in 71.8%. The mean number of attempts per patient was 1.51. Intravenous sedation, usually with Dexmedetomidine 0.5 to 1 mic/kg was required in 19.76% of the infant cases. Intraoperative conversion to general anesthesia was necessary in 9 patients (5.38%). The main side effect was bradycardia avoided by routine atropine at 0.02 mg/kg. No desaturation or hypotension was reported. None of the patients had postoperative meningitis or central nervous system complications. The cost of SA was 50% less than the cost of general anesthesia only, not including the NICU needed after GA.

Conclusions: SA is safe, clinically effective and cost effective in newborns and infants undergoing surgeries, especially in patient groups where general anesthesia could be hazardous. The need to deal with a small and sometimes sick patient requires the presence of an experienced pediatric anesthesiologist.

GE13_PO / 14:10 – 14:15

MIDTERM PROSPECTIVE FOLLOW-UP STUDY ON ABDOMINAL WALL DEFECTS: A SINGLE INSTITUTION EXPERIENCE

Laura Valfre, Pietro Bagolan, tommaso D'angelo, Barbara Daniela Iacobelli, Federica Delprete, Lucia aite, Francesca Bevilacqua, Chiara Demarchis, Annabella Braguglia, Andrea Conforti
Bambino Gesu Research Children's Hospital, Rome, Italy

Abstract

Aim of the Study: Outcomes of patients treated for abdominal wall defects (AWD), gastroschisis and omphalocele, are poorly explored. We report a prospective 2-year follow-up comparative study on gastroschisis and omphalocele patients.

Methods: All infants treated for AWD between 2009 and 2021 were enrolled in a multidisciplinary follow-up clinic as part of a prospective longitudinal study. For the present analysis, follow-up assessments were limited to 1 and 2 years. Demographic and auxological data, feeding behaviour, neurodevelopment, need for readmission or re-intervention were assessed. Patients were grouped according to the type of AWD: gastroschisis and omphalocele.

Main results: During the study period 81 patients were treated (43 gastroschisis;38 omphalocele). Gastroschisis patients, when compared with omphalocele infants, were more prone to preterm delivery [36wks (35-37) vs37wks (38-38), p0.002], presenting lower birth weight [2365gr (2105-2618) vs2923gr (2628-3380), p0.0001], had higher prenatal detection rate (93%vs71%, p0.02), although experiencing less associated abnormalities (16%vs52%, p0.0008). Nonetheless, 1st and 2nd year auxological (BMI 16,44(15,73-17,51)vs16,07 (14,79-18,06),p0.7 and 15,58(14,94-16,41)vs14,76 (13,75-16,14),p0.08), neurodevelopmental (5%vs6%,p1.0 and 0%vs6%, p0.2), and feeding outcomes (7%vs6%,p1.0 and 2%vs3%,p1.0) were similar between the two groups. Readmission was frequent in both groups during the 1st year (24%vs26%, p0.8), while decreasing during the 2nd year (10%vs9%, p1.0). Redo-surgery was similarly present at 1 and 2-year follow-up: 17%vs15%, p1.0, 5%vs6%, p1.0, respectively.

Conclusion: This the first report of prospective follow-up data on AWD. Patients treated for AWD experienced similar and overall good auxological outcomes. Although overall readmission rate and redo-surgery rate were significant, a minority experienced neurodevelopment and feeding problems.

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GE14_PO / 14:15 – 14:20

OUTCOME REPORTING AFTER INGUINAL HERNIA REPAIR IN CHILDREN: A SYSTEMATIC REVIEW TOWARDS A CORE OUTCOME SET

Sanne Maat[1], Ramon Gorter[1], Ernst van Heurn[1], Martin Offringa[2], Nancy Butcher[2], Joep Derikx[1]
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Abstract

Aim of the Study: A Core Outcome Set for Inguinal Hernia repair (COS-IH) in children will facilitate adequate comparison of treatment strategies and the interpretation and implementation of clinical trial results. To develop such a COS-IH, a systematic review (SR) must be performed to determine which outcomes are reported in randomized controlled trial (RCTs) and meta-analyses' (MAs) in children aged 0-16 years undergoing inguinal hernia repair.

Methods: A SR was performed in October 2021 according to PRISMA guidelines using PubMed, EMBASE, MEDLINE and the Cochrane Library databases. All available RCTs and MAs reporting outcomes of treatment of inguinal hernia repair in children aged 0–16 years were included. All reported outcomes were assigned to core areas using OMERACT Filter 2.0 (Adverse events, Pathophysiological manifestation, Life Impact, Resource Use and Death).

Main results: A total of 39 articles (n= 129053 children, n=21 RCTs, n=18 MAs) were included in this study. A total of 94 unique outcomes were identified. Most trials reported between four and ten outcome measures. The most reported outcome measures were operation time (n=21 studies) and recurrence rate (n=19 studies).

Conclusions: This SR shows that the development of a COS-IH is crucial for outcome data comparison since studies reported 94 unique outcomes. The development of COS-IH will contribute to high-quality evidence regarding the optimal treatment strategy for inguinal hernia repair in children.

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GE15_PO / 14:20 – 14:25

SPLENIC CYSTS: NEW APPROACHES FOR AN OLD PROBLEM

Joana Mafalda Monteiro, Sara Fernandes, Norberto Estevinho, Maria Garcia Fernandez, Maria Bom-Sucesso, Miguel Madureira, Miguel Campos
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Abstract

Aim of the Study: The best treatment for splenic cysts (SC) remains to be determined. We aimed to evaluate the effectiveness and safety of surgical and sclerotherapy treatments.

Methods: From 2010 to 2022, children with SC diagnosis were analyzed regarding age, gender, history of abdominal trauma, symptoms and cyst's size at diagnosis, type and rate of treatment success/failure. After sclerotherapy, cyst resolution or reduction to <5cm was considered a success.

Main results: Eighteen patients (67% female), with a median age of 13.50 (12.00-15.25) years, were submitted to SC treatment. Majority (67%) were asymptomatic and 3 (17%) had a history of abdominal trauma. The mean cyst's diameter was 8.13±3.33cm (minimum 3.2cm and maximum 15cm). Three (17%) patients remained under surveillance, nine (50%) were submitted to laparoscopic surgery and six (33%) submitted to sclerotherapy **(Figure 1)**. Four (67%) sclerotherapy (all with doxycycline) and 3 (33%) surgical patients (2 marsupialization and 1 cystectomy) required another intervention. Doxycycline presented a tendency to higher failure rates (4 in 5) regarding other sclerosants (none with polidocanol or acetic acid) (p=0,061). There were no post-treatment complications, and the groups did not differ regarding clinical data or treatment success/faillure rates. Sclerotherapy group had a higher median number of interventions than the surgical group (3.00 (2.50-7.50) vs. 1.00 (1.00-1.25), p=0.019).

Conclusions: Despite being a small cohort, our results indicate that both surgical and sclerotherapy treatments are effective and safe options for SC treatment. Nevertheless, sclerotherapy effectiveness appears more promising with sclerosants other than doxycycline.

GE16_PO / 14:25 – 14:30

RE-EVALUATION OF ADNEXAL CYST MANAGEMENT IN CHILDREN

Dilnur Sevinc[1], Bade Toker Kurtmen[1], Gokhan Koyluoglu[2]
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Abstract

Aim of the Study: There are few studies on the outcome of adnexal cysts in children, and current recommendations are based on adult guidelines. We aimed to reveal the characteristics of adnexal cysts followed in our clinic.

Methods: All patients with adnexal cysts between 2020 and 2022, who could be reached by phone, were included in the study. Clinical findings, imaging, follow-up results were compared.

Main results: Thirteen of the total 50 patients underwent surgery. The mean cyst diameter of the conservative management (CM) group (4.4±1.5) was found to be significantly smaller than the elective surgery (ES) group (7.7±1.7cm) ($p<0.001$). The mean follow-up time was 23±9 months. In the CM group, there was no difference in size between the cysts that disappeared (4.4±1.9cm) and those that did not (4.3±1.4cm)($p=0.868$), and no relationship was found between the frequency of cyst disappearance and oral contraceptive (OCP) usage ($p=1,000$). None of the patients developed torsion during the follow-up. 71.4% of the patients in the EC group were diagnosed as paraovarian cysts, and the other 2 cases had functional ovarian cysts. Patients with paraovarian cyst were followed up longer (20-months) than functional ovarian cysts patients (2-months).

Conclusions: In our study, we showed that spontaneous regression size in conservatively followed cases of adnexal cysts was not associated with the use of OCP or cyst size, and paraovarian cysts should be kept in mind in cysts that do not disappear in long follow-up.

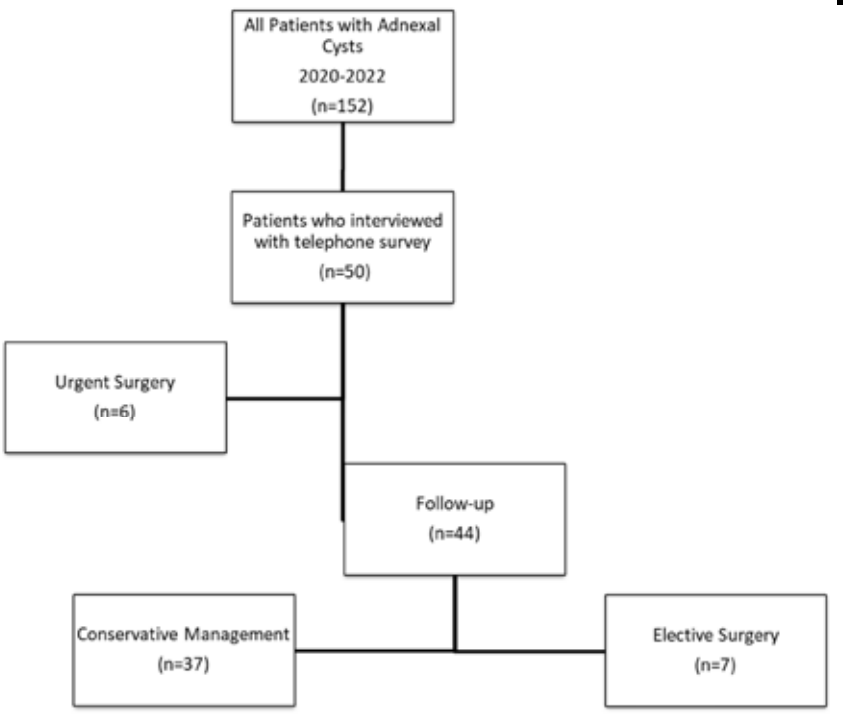

Figure. Flowchart of the Study

13:30 - 14:30

Poster Presentation Session 13

General III

(M2) Studio 1+2

Chair: Barbora Kucerova (CZE)

Steffen Berger (SUI)

GE17_PO / 13:30 – 13:35

COMPARISON OF HYDATID CYSTS OF LUNGS AND LIVER: A SINGLE CENTRE EXPERIENCE

Atike Gulsah Kiris Uzun[1], Ahmet Erturk[2], Abdurrahman Urve Uzun[1], Sabri Demir[3], Suleyman Arif Bostanci[3], Vildan Selin Cayhan[3], Elif Emel Erten[3], Can Ihsan Oztorun[2], Mujdem Nur Azili[2], Emrah Senel[2]
[1]university Of Health Sciences, Ankara Bilkent City Hospital, Department of Pediatric Surgery, Ankara, Turkey. [2]Ankara Yıldırım Beyazıt University, School of Medicine, Department of Pediatric Surgery, Ankara, Turkey. [3]Ankara Bilkent City Hospital, Department of Pediatric Surgery, Ankara, Turkey

Abstract

Aim of the Study: Hydatid cysts are caused by echinococcus parasite, seen all around the world but endemic in some countries. It's most common in liver and lungs. Our purpose is to share our experience and compare the data of lung and liver cysts.

Methods: Medical records of children, diagnosed with hydatid cysts and treated between 2008 and 2023 were retrospectively analyzed. Patients were divided in 2 groups based on localisation of the cysts (liver or lung). Patients who had both liver and lung cysts excluded.

Main results: 177 patients diagnosed with hydatid cysts in our clinic during this 15 years period. 25 patients had both lung and liver cysts at the same time. 114 patients had liver cysts and 38 had lung cysts. 53% of patients were female. Lung cysts were mostly single compared to the other group. Mean cyst diameter was similar in both groups. The most common application complaint was abdominal pain (%56) in the liver cysts group and was cough (%47) in lung cysts group. While rupture at first admission was %5,2 in liver cysts group, it was %39,5 in lung cysts group which is statisticaly significant (p<0,001).

Conclusions: Besides being asymptomatic for a long time, hydatid cysts require urgent intervention when they rupture. This situation is more common in lung hydatid cysts than in the liver. For this reason, it should be kept in mind in cases of symptoms such as sudden coughing, respiratory distress, and hydatoptysis in endemic areas.

GE18_PO / 13:35 – 13:40

THYROID SURGERY IN CHILDREN: OUR EXPERIENCE OF 20 YEARS

Kutay Bahadir[1], Selin Ural[1], Javid Abdullayev[1], Abdurrahman Karaman[1], Mesut Parlak[2], Adil Boz[3], Gungor Karaguzel[1]
[1]Akdeniz University School of Medicine, Department Of Pediatric Surgery, Antalya, Turkey. [2]akdeniz University School of Medicine, Department of Pediatric Endocrinology, Antalya, Turkey. [3]akdeniz University School of Medicine, Department of Nuclear Medicine, Antalya, Turkey

Abstract

Aim of the Study: We aimed to review our experience in thyroid surgery.

Methods: Thirty-eight patients who underwent thyroid surgery from 2003 to 2023 were retrospectively evaluated by our institutional multidisciplinary board. Vascular sealing devices and nerve monitoring were used selectively.

Main results: Total of 39 pediatric patients underwent 47 subtotal/ total/completion thyroidectomies. Median age was 158 months (22 days-223 months). Clinically 30 patients were euthyroid (25 had thyroid nodules or irregularities, 5 patients with familial RET oncogene mutation), 7 patients had hyperthyroidism (4 Graves disease, 3 toxic nodular/multinodular goiter) and the remaing 2 patients had hypothyroidism who were operated due to malignancy concerns. While 38 fine-needle aspiration biopsy (FNAB) was performed in 25 patients, 14 patients were operated without FNAB. Pathological diagnosis was malignant (12 papillary thyroid carcinoma, 4 follicular thyroid carcinoma, 1 medullary thyroid carcinoma, 3 others) in 20 patients and benign in 19. Six patients underwent neck dissection. There were no intraoperative complications except for 1 patient with internal jugular vein injury. The average hospital stay was 5.7 days (2-27 days). Postoperative complications included eight transient hypocalcemia, two of which became permanent. One patient needed a short-term tracheostomy due to transient recurrent nerve injury. Thirteen patients received radioactive iodine treatment. Patients follow up was 38 months (1 month- 179 months).

Conclusions: Pediatric thyroidectomies are performed on a heterogeneous group of pediatric patients due to a diverse group of pathologies. Multidisciplinary approach is required for proper management of these patients in experienced tertiary centers.

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GE19_PO / 13:40 – 13:45

TRANSPERITONEAL LAPAROSCOPIC ADRENALECTOMY FOR PEDIATRIC ADRENAL MASSES

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Abstract

Aim of the Study: This study aims to present our surgical experience of laparoscopic adrenalectomy with 52 cases.

Methods: Hospital records of patients who underwent laparoscopic adrenalectomy due to various lesions between years 2003-2022 were reviewed retrospectively. Data included demographics, clinical complaints, radiological findings, intraoperative/postoperative complications, and pathological results.

Main results: Fifty-two (M/F:23/29) patients with a median age 38 (3-207) months underwent LA. Majority of patients were diagnosed incidentally (40%). Symptomatic patients mostly presented with abdominal pain, vomiting, palpable mass, and headache. Twenty-eight patients were on right side, 23 on left, also there was one bilateral case. Median largest dimension of tumors was 34 (7-80) mm, also there was no radiological evidence of vascular invasion or encasement. Transperitoneal route was preferred in all. Pathological groups were depicted in Figure. There were no conversions, no intraoperative complications, and no intraoperative tumor rupture and none of the patients required blood transfusion intraoperatively. Postoperative period was uneventful in all children; all were fed within 12 h.

Conclusions: Transperitoneal laparoscopic adrenalectomy is safe and efficient, especially in tumors that are relatively small with clear margins. Preoperative detailed evaluation and proper selection of patients are the most important determinant factors to success.

Figure 1: Pathological types	No of patients
Neurogenic tumors	35
Neuroblastoma	25
Ganglioneuroblastoma	4
Ganglioneuroma	6
Adrenocortical carcinoma	2
Adrenocortical oncocytoma	4
Adrenocortical adenoma	1
Pheochromocytoma	4
Cysts	4
Metastasis	1
PPNAD	1
Total	52

GE20_PO / 13:45 – 13:50

COULD INTERLEUKIN-10 HAVE A ROLE IN THE DEVELOPMENT OF DIFFERENT TYPES OF ACUTE APPENDICITIS IN CHILDREN?

Idile Vanseviciene, Jurgita Narbutiene, Dovydas Bagdonas, Brigita Sikauskiene, Ugne Krunkaityte, Ausra Lukosiute-Urboniene, Mindaugas Berzanskis, Inga Dekeryte, Agne Mikneviciute, Dalius Malcius, Vidmantas Barauskas
Lithuanian University of Health Sciences, Kaunas, Lithuania

Abstract

Aim of the Study: we wanted to analyze immune markers (Interleukin-10 (IL-10), Interleukin-17A (IL-17A) and Interleukin-22 (IL-22)) in children with different types of acute appendicitis.

Methods: During a 4-month period blood samples from children with acute appendicitis (with regional Bioethics Committee approval No. BE-2-40) were taken before the incision and analyzed with ELISA for levels of IL-10, IL-17A and IL-22. The patients' groups were formed according to type of appendicitis and duration of disease - the early (symptoms ≤24 hours) and the late - (>24 hours). According to the pathology report phlegmonous appendicitis was categorized as uncomplicated appendicitis and gangrenous or perforated appendicitis - as complicated. The early uncomplicated appendicitis (A1) group was compared to the late uncomplicated (resolving) appendicitis (A2) group. Also, the early complicated (rapidly progressive) appendicitis (B1) group was compared to the late complicated appendicitis (B2) group.

Main Results: 39 patients were analyzed: 9 with A1, 8 with A2, 6 with B1 and 16 with B2. B1 group had higher IL-10 rates than B2 (26,5 pg/ml [7,98;44,2] vs. 10,88 pg/ml [4,85;17,82], p=0,027), however they did not differ between A1 and A2 (8,76pg/ml [4,6;21,3] vs. 10,86 pg/ml [6,6;15,3] p=0,321). IL-17A had lower than traceable values in most patients <1,6 pg/ml and no significant difference was found in IL-22 levels: A1 vs. A2 145,69 pg/ml [75,66;242,08] vs. 161,35pg/ml [84,67;280,8] p=0,662 or B1 vs. B2 136,77 pg/ml [95,3;210,71] vs. 166,62 pg/ml [92,44; 263] p=0,383.

Conclusions: Increased cytokine IL-10 could have importance in rapidly progressive acute appendicitis.

GE21_PO / 13:50 – 13:55

LAPAROSCOPIC GIANT INGUINAL HERNIA REPAIR IN BOYS

Mansur Nasirov, Ikrom Bobokulov, Shukur Eshkobilov, Murat Abduazizov, Ayimgul Khudaybergenova
National Children's Medical Center, Tashkent, Uzbekistan

Abstract

Aim of the Study: To report our experience using peritoneal division, muscle anchoring, and purse-sting closure of internal ring in boys with giant inguinal hernia.

Methods: Retrospective review of 16 boys with inguinal hernias admitted from our center's opening. Patient age and weight, intraoperative notes and outcomes were recorder and analyzed. Technique involves 300 5mm camera placed infraumbilically with hidden incision and 2 3mm additional working ports by sides. Hernia sac identified, divided using 3mm Metzenbaum scissors, muscle anchoring by suturing muscle flap to inguinal ligament with Ethibond 3/0 and purse-string closure of peritoneal defect.

Main results: Mid age of boys was 6 months (from 1 to 8 months). Weight ranged from 4 kg to 10 kg. There was no conversion to open in all cases. In 1 case cecum was attached to internal inguinal ring. In 5 cases presumed unilateral hernia PPV from contralateral side were identified and repaired during the same procedure using peritoneal division and purse-string suture. Average operating time for unilateral hernia consisted of 30 minutes and 45 minutes for bilateral. All patient has been discharged after 2 hours postoperatively. No recurrences noted.

Conclusions: Despite the accepted concept that the laparoscopic method is not recommended for a giant inguinal hernia, in our series we found laparoscopic repair using peritoneal division, muscle anchoring and purse-sting closure of internal ring in boys is safe and effective method. Its allows quick operative time, no manipulation of spermatic cord, possibility to repair contralateral side and very good cosmetic results.

GE22_PO / 13:55 – 14:00

ROBOTIC SURGICAL STRATEGIES IN TERMS OF CYST LOCATION IN SPLENIC CYSTS

Mucahit Erman, Ulgen Celtik, Ahmet Celik, Orkan Ergun, Geylani Ozok, Emre Divarci
Ege University, Faculty of medicine, Department of Pediatric Surgery, Izmir, Turkey

Abstract

Aim of the Study: We aimed to present robotic surgery (RS) strategies and results according to the location of splenic cyst.

Methods: Patients who underwent RS for splenic cyst between 2020-2022 were evaluated retrospectively. Demographics, radiological findings, operation details, operative complications were obtained from hospital records.

Main results: Seven patients (F/M:2/5) were included. Median age at operation was 14 (5-19) years. The median cyst size was 65 (35-91) mm. The cyst location was in the upper pole in three, in lower pole in three, and in hilum in one patient. Robotic partial splenectomy was performed in 4 patients (2 uppers and 2 lower poles), cystotomy was performed in one located in the middle pole and cystectomy was performed in one. One patient who underwent laparoscopic cystotomy three years ago had cyst recurrence. Partial robotic splenectomy was considered, but total splenectomy was required due to intraoperative bleeding in this patient. Pathological examination revealed epithelial cysts in 6 patients and pseudocysts in one. The median hospital stay was 3 (2-4) days. No additional recurrence or complication was detected in a median 8(3-36) months follow-up period.

Conclusions: Although, laparoscopic interventions are frequently used as a minimally invasive approach for surgical treatment of splenic cysts, RS may reduce risk of recurrence and intraoperative complications owing to higher maneuverability and visualization quality. Also, partial splenectomy can be safely performed in polar-located cysts and cystectomy in hilus-located cysts to prevent recurrence.

GE23_PO / 14:00 – 14:05

BONE INVOLVEMENT IN LYMPHATIC MALFORMATIONS OF THE FLOOR OF MOUTH: GENETICS AND EARLY TREATMENT.

María San Basilio[1], Juan Pablo Rodríguez-Arias[2], Carla Ramírez-Amorós[1], Paloma Triana[1], Lara Rodríguez-Laguna[2], Mercedes Martín Pérez[1], Jesús Manuel Muñoz Caro[1], Elena Gómez García[1], Juan Carlos López-Guitérrez[1]
[1]Hospital Infantil La Paz, Madrid, Spain. [2]Hospital La Paz, Madrid, Spain

Abstract

Aim of the study: The spectrum of bone involvement in lymphatic malformations (LM) is heterogeneous and can range from hypertrophy to osteolysis. The reasons for such different behavior are under study and have a major relevance in the progression of the disease. The aim of this study is to describe the association between the LM of the floor of mouth and the involvement of the mandible.

Methods: We conducted a retrospective observational study including patients with LM of the floor of mouth followed up in our center between 2012-2022. Demographic data, clinical presentation, imaging tests, genetic study, treatment, and complications were collected.

Main results: Fifty-nine patients with LM of the floor of mouth (36 men and 33 women) with a median age of 17 years (Q1-Q3: 8-22) were reviewed. Four patients required tracheostomy and/or gastrostomy. All patients underwent at least one imaging test (MRI / CT / Orthopantography), showing osteolysis of adjacent bones in 4 patients and hypertrophy in 11 patients. The genetic study demonstrated the presence of KRAS mutations in 2 patients with osteolysis and PIK3CA mutation in 7 patients with bone hypertrophy. Twenty patients were treated with sirolimus, 35 underwent repeated surgeries and/or embolizations, and 5 patients with mutated PIK3CA received targeted treatment with alpelisib with ML reduction and clinical improvement.

Conclusions: Early detection of mutations associated with lymphatic malformations can help us start targeted treatment and avoid complications such as hypertrophy or osteolysis.

GE24_PO / 14:05 – 14:10

Is gastroschisis disappearing?

Stella Sabbatini[1,2], Niloofar Gangi[1,2], Brian Kalish[1,3], Loreto Lecce[1,3], Knighton Knighton[1,3], Hazel Pleasants-Terashita[1,3], Nicole De Silva[1,3], Agostino Pierro[1,4,2]
[1]The Hospital for the Sick Children, Toronto, Canada. [2]Translational Medicine Program, The Hospital for Sick Children, Toronto, Canada. [3]Division of Neonatology, The Hospital for Sick Children, Toronto, Canada. [4]Division of General and Thoracic Surgery, Translational Medicine, The Hospital for Sick Children, Toronto, Canada

Abstract

Aim of the Study: Gastroschisis is the most prevalent congenital abdominal wall defect. The prevalence has been rising worldwide since the late nineties and is associated with geographic variations. The incidence of gastroschisis can influence the quality of medical and surgical care as well as outcome. Herein, we report a significant decrease in gastroschisis admissions, a novel observation in our center.

Methods: Our surgical neonatal intensive care unit (NICU) is in a free-standing children's hospital with a large catchment area of approximately 6 million inhabitants. We reviewed our prospectively acquired admissions data (REB#: 1000074988) from 2010 to 2022 to obtain the total number of neonatal surgical admissions and compare admissions with gastroschisis and those with other congenital anomalies requiring surgery including omphalocele, esophageal atresia, duodenal atresia, anorectal anomaly, and small bowel atresia. Data was compared using a simple linear regression model ($\alpha = 0.05$).

Main results: Compared to total surgical neonates admitted, the number of gastroschisis admissions significantly decreased ($p=0.0494$), while there was no significant change in any of the other congenital surgical admissions (Fig. a-c). This reduction occurred in spite of an increase in total admissions in our NICU (Figure c).

Conclusions: The significant decrease in gastroschisis admissions coincided with the COVID-19 pandemic, but this was not paralleled with changes in other neonatal surgical admissions. The decreased incidence seems to represent a true reduction in gastroschisis warranting further evaluation to determine its causality and the effect on treatment, clinical outcome, and surgical training.

GE25_PO / 14:10 – 14:15

EXTREMELY SEVERE COMPLICATIONS DURING SURGICAL TREATMENT OF INTRAABDOMINAL LYMPHATIC MALFORMATIONS

Carlos Delgado-Miguel[1,2], Miriam Miguel-Ferrero[1], Mercedes Díaz[1], Paloma Triana[1], Francisco Hernández Oliveros[1], Manuel López-Santamaría[1], Juan Carlos López-Gutiérrez[1]
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Abstract

Aim of the Study: Vascular anomalies treatment should not be worse than the original disease. Our aim is to present a series of severe complications in patients with intraabdominal lymphatic malformations (IALM).

Methods: We describe a retrospective series of patients referred to our Vascular Anomalies Center between 2003-2020 from other institutions after surgical complications during IALM resection.

Main results: A total of 3 patients were included (2 males and 1 female). In the first 2 cases severe vascular injury of superior mesenteric artery and celiac trunk took place during elective surgery in which IALM radical resection was attempted (mesenteric IALM in one case and retroperitoneal in the other). Both patients developed ischemic bowel and hepatic involvement requiring multivisceral transplantation at 4 and 3 years of age respectively. The first patient remains asymptomatic more than 10 years later, but the second patient died 4 months after transplantation due to acute cellular rejection and graft-versus-host disease. The third case suffered superior mesenteric artery injury during an emergency surgery for suspected appendicitis at 5 years of age where a venous-lymphatic vascular malformation was found in the distal ileum, cecum, and ascending colon. Consequently, he developed intestinal ischemia that required 2 isolated intestinal transplants with chronic rejection and 2 subsequent multivisceral transplants. He died at 17 years of age due to multiorgan failure secondary to fulminant septic shock.

Conclusions: Management of IALM must be conservative, only considering surgery when refractory to other treatments and never attempting a radical resection. A multidisciplinary approach is mandatory in these complex patients.

GE26_PO / 14:15 – 14:20

WHY SHOULD WE PRESERVE THE ISCHEMIC OVARY AFTER TORSION?

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Abstract

Aim of the Study: Traditionally, signs of severe ischemia of the ovary after torsion led to oophorectomy. The current trend is to preserve the ovary regardless of its macroscopic appearance. Our aim is to describe the management of ovarian torsion (OT) including preservation rate.

Methods: A retrospective review of patients aged 1-15 years diagnosed with OT between 2013-2022 was performed. Demographic and clinical variables such as: symptoms, operative findings, preservation/oophorectomy rates, and postoperative evolution were analysed.

Main results: We identified 27 episodes of OT in 22 patients aged 8.5 years (1-14) in the first episode. The ovary was preserved (detorsion +/- cystectomy) in 59.3% of the episodes; of which half (n=8) showed signs of severe ischemia. Emergency oophorectomy was performed in 40.7% with pathology ultimately showing: 7 tumours (5 benign), 2 necrotic ovaries and 2 ovaries with edema/acute hemorrhage. There were 5 recurrences in 3 patients and oophoropexy was performed in 2, without new episodes of OT. A follow-up visit and pelvic ultrasound was indicated in patients in whom the ovary was preserved (14/22=63.6%) and ultimately performed in 11. The viability of the preserved ovary in these patients was 100%. One patient required delayed oophorectomy due to suspected mature teratoma. Total follow-up was 1.3 years (2 days-10 years).

Conclusions: Preservation of the macroscopically ischemic ovary after torsion provides an opportunity for its recovery. Ovarian detorsion along with close clinical and radiological follow-up allows for the decision to perform an oophorectomy to be deferred and carried out in selected cases.

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GE27_PO / 14:20 -14:25

EFFICACY OF BLOOD CELL INDICES AS PREDICTORS OF ABDOMINAL ABSCESS DEVELOPMENT AFTER APPENDECTOMY IN CHILDREN

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Abstract

Aim of the Study: To assess the accuracy of neutrophil-lymphocyte ratio (NLR), derived neutrophil-lymphocyte ratio (dNLR), platelet-lymphocyte ratio (PLR) and monocyte-lymphocyte ratio (MLR) as predictors of post-appendectomy intra-abdominal abscess (PAIA) development in children.

Methods: Diagnostic study of appendectomized children in our institution from 2021 to 2022. NLR, dNLR, PLR and MLR were compared between patients who developed PAIA and controls without this complication (NPAA). The Institutional Ethics Review Board has approved this study.

Main results: A total of 182 patients were included: 93 NPAA cases (34.4% female, age 10.3 ± 2.9 years) and 89 PAIA patients (62.9% male, age 9.4 ± 3.5). All blood cell indices were significantly higher in the PAIA group than NPAA (p= < 0,0001). NLR, dNLR, PLR and MLR had an area under the receiver operating characteristic (ROC) curve of 0.734, 0.691, 0.743 and 0.672, respectively (Fig. 1). PLR was the most accurate predictor of PAIA with a sensitivity of 73%, specificity 72%, positive predictive value 71%, negative predictive value 74%, area under ROC curve 0.743 (0.670-0.815) and cut-off point for predicting PAIA development of 191.82. The post-test probability of PAIA for a positive NLR, dNLR, PLR and MLR were 66%, 64%, 72% and 66%, respectively.

Conclusions: PLR seems to be the most accurate cellular index for predicting the development of post-appendectomy intra-abdominal abscess in children. PLR may be a useful tool as a predictor of postoperative courses and to increase clinical suspicion in children with poor clinical evolution.

GE28_PO / 14:25 – 14:30

IMPACT OF THE USE OF A SPEAKING CANNULA AND SPEAKING VALVE ON LARYNGEAL FUNCTIONS IN PEDIATRIC PATIENTS WITH TRACHEOSTOMY

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Abstract

Aim of the Study: The larynx has three functions: breathing, vocalization, and swallowing. From 2021, a speaking cannula (SC) and speaking valve (SV) have been used in children with tracheostomy. We reviewed our experience focusing on these functions.

Methods: Ten children with tracheostomy using a SC and SV [age at tracheostomy (median, 5 months; range, 1 month-13 years); age at start of SC/SV use (5 years; 1-13 years)] were retrospectively analyzed. Regarding SC use, confirmation of steady spontaneous breathing, and if feasible, confirmation of a patent upper airway and the position of the side holes of SC in trachea by rigid bronchoscopy were necessary.

Main results: Reasons for tracheostomy were upper airway stenosis (5 cases) or respiratory failure by the primary disease (5 cases). ①Breathing: In 9 cases, the amount of tracheal secretions and the frequency of intratracheal suctioning decreased compared with those before SC/SV use. ②Vocalization: Before SC/SV use, dysphonia (6 cases) and inspiratory phonation (2 cases) were observed. Under SC/SV use, all cases acquired vocalization. ③Swallowing: Before SC/SV use, 4 cases showed aspiration. Under SC/SV use, those cases achieved normal swallowing (3 cases) or silent aspiration (1 case). Under SC/SV use, decannulation was attempted depending on the conditions. Currently, 5 cases achieved decannulation, and in 2 cases the size of the SC was reduced for future decannulation.

Conclusions: Under SC/SV use in tracheostomy, the change in airflow contributed to reducing tracheal secretions, acquiring vocalization, and preventing aspiration. Moreover, SC/SV use would be a step towards decannulation.

13:30 - 14:30

Poster Presentation Session 14

Oncology I

(M2) Studio 1+2

Chair: Anne Dariel (FRA)

Holger Till (AUT)

ON01_PO / 13:30 – 13:35

GERM-CELL NEOPLASMS OF SACROCOCCYGEAL REGION: CLINICAL CHARACTERISTICS, OUTCOMES, AND ANALYSIS OF RECURRENCE AFTER TREATMENT; A COMPREHENSIVE 19 YEAR SINGLE-CENTER STUDY

Samir Hasan, Ülgen Çeltik, Gözde Şakul, Emre Divarcı, Ahmet Çelik, Orkan Ergün
Ege University/Faculty of Medicine/Department of Pediatric Surgery, Izmir, Turkey

Abstract

Aim of the Study: The aim of this study is to evaluate the outcomes of sacrococcygeal germ cell tumors (SC-GCTs).

Methods: A retrospective study was conducted including patients diagnosed with SC-GCTs between 2002-2021 years. Epidemiology, diagnostic and treatment methods, anatomic/histopathological classifications, recurrence analysis, and long-term outcomes were evaluated.

Main results: The study included 54 patients (F/M:44/10). Nineteen patients (35.2%) were diagnosed prenatally, 14(26%) at birth, 10(18.5%) during infancy, and 11(20.3%) during childhood period. Ultrasonography was performed to all and (MRI) to (85%) of patients. According to Altman's-classification, 16 patients (29.6%) were Type I, 14(25.9%) Type II, 12(22.25%) Type III and 12(22.25%) Type IV. All patients underwent surgical excision. Histologically 70.4% of lesions were mature teratomas, 14.8% were immature teratomas, and 14.8% were malignant teratomas (50% of them were Type III and 50% were Type IV). While most mature and immature teratomas were diagnosed prenatally or in neonatal period, the mean age of diagnosis for malignant teratomas was 16 months. Chemotherapy was given in 12/54(22.25%) patients who had immature and malignant teratomas. Eleven patients developed recurrent SCT (recurrence age:5 months-12 years). The histological results are detailed in Figure 1. One patient died because of malignant SCT with distant metastases.

Conclusions: The risk of malignancy increases with age and in Altman's Type III and IV SCTs. Recurrent tumors may exhibit different histopathological features from the original tumor. The risk of recurrence as malignant tumor after immature teratomas was higher than mature teratomas.

ON02_PO / 13:35 – 13:40

Indocyanine green in oncologic surgery

Grzegorz Kowalewski, Adam Kowalski, Marek Stefanowicz, Marek Szymczak, Katarzyna Pankowska-Woźniak, Piotr Kaliciński
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Abstract

Aim of the study: Near-infrared (NIR) fluorescence imaging with indocyanine green (ICG) has gained popularity in many areas of adult surgery. The clinical application of ICG in pediatric surgery is currently in the early stages of development. We present our experience with the use of ICG in oncologic surgery.

Methods: From 01.2021 to 01.2023, we performed 20 procedures using ICG in patients requiring oncologic treatment ranging in age from 1.5 r to 15.5 years (median 3.5 years). The dosage and timing of ICG administration depended on the patient's weight and diagnosis. We performed resections of Hepatoblastoma liver tumors (HBL) using ICG in 5 patients. We also performed selective resection of 15 other tumors, including eight resections of lung tumors classified as metastatic lesions.

Main results: The use of ICG in a group of patients requiring surgical treatment enabled the correct assessment of the nature of the lesion in 19 of 20 cases. In 3 cases of primary HBL, based on ICG imaging, the extent of resection was expanded without confirming the presence of tumor tissue on postoperative histopathological examination (false-positive result). In 1 case, a false negative result was obtained - no fluorescence of NBL tumor. All tumor lesions were removed within the limits of healthy tissue. No surgical complications or complications after ICG administration were observed.

Conclusions: ICG is a sensitive adjunct in identifying various cancers' primary tumors and metastatic lesions. False-positive results limit specificity, but in our group, they did not contribute to any postoperative complications.

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ON03_PO / 13:40 – 13:45

DO IDRF PREDICT COMPLICATIONS OF THORACOTOMY FOR MEDIASTINAL NEUROBLASTIC TUMOR ACCORDING TO CLAVIEN DINDO GRADING SYSTEM AND COMPREHENSIVE CALCULATION INDEX?

Burak Ardicli[1], Idil Rana User[1], Berna Oguz[2], Mithat Haliloglu[2], Diclehan Orhan[3], Tezer Kutluk[4], Arbay Ozden Ciftci[1], Ibrahim Karnak[1], Saniye Ekinci[1]
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Abstract

Aim of the Study: Image defined risk factors (IDRF) are used to predict surgical risks associated with neuroblastoma excision. Comprehensive Calculation Index (CCI) evaluates overall morbidity on the basis of Clavien Dindo Classification System (CDCS) on a scale from 0 (no complication) to death (100). This study is designed to determine whether IDRF predict surgical complications of thoracotomy for mediastinal neuroblastic tumors.

Methods: The data of patients who had thoracotomy for mediastinal neuroblastic tumors in our institution between 2007 and 2020 were analyzed retrospectively. IDRF were defined according to International Neuroblastoma Risk Group statement. Surgical complications were assessed according to CCI and CDCS.

Main results: Twenty-seven female and 14 male patients with a median age of 43 months (IQR, 13-78) were included. 29 patients had 70 IDRF with a median number of 1 (0-6). Eleven patients had 18 surgical complications as fever (n=5), Horner Syndrome (n=4), atelectasis (n=3), pneumonia (n=2), chylous leak (n=2) one of which necessitated intervention, intubation (n=1) and vascular injury (n=1). Median CCI score was 16.5 (IQR, 8,7-33,7). Seven patients with complications and 13 patients without complications had IDRF and the difference was not statistically significant (p=0.73). Median IDRF number of patients with complications and without complications were 2 (IQR, 0-4) and 1 (IQR, 0-2) respectively and the difference was not statistically significant (p=0.117).

Conclusion: In this study presence or number of IDRF were not found to be effective in predicting surgical complications. Multicenter studies with larger sample size are necessary to confirm our results.

ON04_PO / 13:45 – 13:50

GIANT OVARIAN TUMORS IN CHILDREN - IS THERE A PLACE FOR OVARIAN-SPARING TREATMENT?

Olga Szymon, Małgorzata Fryczek, Anna Taczanowska-Niemczuk, Wojciech Górecki
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Abstract

Aim of the Study: Giant ovarian tumors are uncommon in children. They fill the entire abdominal cavity from the small pelvis upwards, protrude into the hilum of the liver, elevate the diaphragm, deform the costal arches. Despite the fact that tumor size is considered a risk factor for tumor malignancy, it is important to consider ovarian-sparing treatment in patients with no other alarming symptoms.

Methods: We reviewed records of 15 patients operated for giant and large ovarian tumors between January 2000 and 2021. The follow up was for 5 years or until the adulthood.

Main Results: Out of 512 patients operated on in our hospital due to ovarian mass only 8 patients had a tumor defined as gigantic, and 15 tumors larger than 20 cm. 14 patients received ovarian-sparing therapy, 1 underwent ovariectomy. Among the histological diagnoses prevailed cystadenoma mucinosum (80%) and teratoma maturum (10%). Patients qualified for sparing therapy underwent suprapubic laparotomy with controlled reduction of tumor volume by puncture with a pigtail catheter, aspiration of fluid content, and tumorectomy with partial removal of the adherent to the tumor expanded ovary. No recurrence during the follow-up was observed. We documented the return of the ovary to normal size and function in 88% patients.

Conclusions: The size of the adnexal tumor is not a limitation for ovarian-sparing surgery. Sparing method is safe, effective and should be the first line procedure in children.

ON05_PO / 13:50 – 13:55

DETERMINATION OF RELIABLE MARKERS PREDICTING MALIGNANCY IN PEDIATRIC THYROID NODULES

Mujdem Nur Azili[1,2], Cem Azili[3], Suleyman Arif Bostanci[2], Elif Emel Erten[2], Vildan Selin Sahin[2], Can İhsan Oztorun[1], Sabri Demir[4], Ahmet Erturk[1], İrem Akbas[4], Tural Jumazade[4], Fatih Gurbuz[5], Derya Ozyoruk[6], Emrah Senel[1]
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Abstract

Aim of the Study: A child with thyroid malignity should be considered as with a low probability of mortality but a higher risk of long-term injury due to aggressive treatments. We aimed to investigate the markers that predict malignancy in thyroid nodules in order to choose the appropriate surgical treatment.

Methods: This is a single-center study that was retrospectively performed on patients under 18 years of age who required total thyroidectomy (TT) and/or central and lateral neck dissections (C/LND) between January 2020 to December 2022. Demographic features, imaging findings, fine needle aspiration biopsy (FNAB), thyroglobulin wash-out (TGWO), and operation types were evaluated.

Main results: Females accounted for 19(73.1%) of 26 patients. Median age was 15.2 years. Mean diameter of the nodule was 11.4 mm. Rate of malignancy was found 42.3% in our series. There was no significant difference between benign and malignant groups in terms of age, sex, tumor diameter, echogenicity pattern, and presence of Hashimoto thyroiditis. FNAB findings were statistically significant in terms of malignancy rates: benign;0/4,0%, atypia of undetermined significance;0/5,0%, follicular neoplasia;4/9,44.4%, suspicious for malignancy;4/4,100%, malignant3/3,100%, p=0.001). Presence of metastatic central/ lateral lymphadenopathy was significantly associated with C/LND (p=0.001). Although papillary thyroid carcinoma is the most common cause of malignity (10/11,90.1%), the diffuse sclerosing variant was the most responsible for the widespread.

Conclusions: We believe that aggressive spread can be prevented by including C/LND during TT, thanks to imaging methods that can predict malignancy in presence of a thyroid nodule, FNAB, and TGWO if spread is considered.

ON06_PO / 13:55 – 14:00

Nephron-sparing surgery in bilateral Wilms tumor without renal hilus clamping manual compression of kidney is a safe option.

Idil Rana User, Burak Ardıçlı, Arbay Özden Çiftçi, İbrahim Karnak, Tezer Kutluk, Diclehan Orhan, Saniye Ekinci
Hacettepe University, Ankara, Turkey

Abstract

Aim of the study: To evaluate effectiveness and safety of nephron-sparing surgery by manual compression of renal parenchyma without renal hilus clamping and ischemia.

Methods: After institutional ethics committee approval (number:2022/22-11), patients diagnosed with bilateral Wilms tumor in the last 2 decades were retrospectively reviewed. Surgical details, amount of blood transfusion, hemoglobin levels and vital signs in the perioperative period, hemodialysis requirement, surgical margins in pathology results were studied. Surgical steps begin with full exposure of kidney and tumor nodules defined in the preoperative imaging. Surgeon delineates tumor from surrounding normal tissue with electrocautery. Tumor was dissected off the normal tissue with electrocautery and vessel sealing device while second surgeon compress juxtatumoral renal tissue manually.

Main results: Study included 22 patients with the median age of 31 (15-60) months. Total of 55 tumoral nodules was excised from 26 renal units. None of the patients had major hemostatic disturbance in the perioperative period. Preoperative, intraoperative and postoperative median hemoglobin levels were 10.5(9.7-11), 9.5(9-10) and 10(10-11) g/dl respectively. Four patients did not receive any blood transfusion, 14 had 10 ml/kg and 4 had 20ml/kg erythrocyte suspension. Two sessions of hemodialysis was necessary in 5 patients in the early postoperative days. Surgical margins were positive in 6 (11%) nodules of 4 patients. None of them had recurrent tumor.

Conclusion: Manual compression of renal parenchyma without renal hilus clamping is a safe and viable option of nephron-sparing surgery with good oncologic outcomes.

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ON07_PO / 14:00 – 14:05

TUNNELLED CENTRAL VENOUS CATHETERS VERSUS IMPLANTED PORTS IN PAEDIATRIC ONCOLOGY: A SYSTEMATIC REVIEW AND META-ANALYSIS.

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Abstract

Aim of the Study: Tunneled central venous catheters (T-CVC) and implanted ports (PORT) are widely used in children with cancer but associate with significant morbidity. We aimed to evaluate and compare the complications associated with T-CVCs and PORTs in paediatric oncology patients.

Methods: A systematic review in accordance with PRISMA guidelines was performed (PROSPERO: CRD42022300869). MEDLINE, Web of Science and Cochrane databases were searched. Studies that compared outcomes for T-CVCs and PORTs in children (≤18 years) undergoing treatment for solid or haematological malignancies were included.

Main results: Twenty-three studies met the inclusion criteria, representing 6,644 devices and 6,032 patients. No randomised trials were identified. T-CVCs were associated with an increased risk of systemic infection (odds ratio [OR] 2.10, 95% confidence interval [CI] 1.59 – 2.77, p <0.001, 16 studies, 3,425 devices), but not localised infection (OR 1.15, 95% CI 0.66 – 2.01, p = 0.62, five studies, 979 devices). T-CVCs were also associated with a significantly increased risk of mechanical complications (OR 2.47, 95% CI 1.21 – 5.05, p = 0.01, 11 studies, 2,187 devices) and premature device removal (OR 3.24, 95% CI 1.28 – 8.22, p = 0.01, six studies, 1,514 devices). On subgroup analysis, risk of systemic infection with a T-CVC was greater in patients with haematological cancers (Figure).

Conclusions: Compared to PORTs, T-CVCs are associated with a higher risk of infectious and mechanical complications, and premature removal. Further work is required to confirm these findings in a randomised trial and investigate patient acceptability.

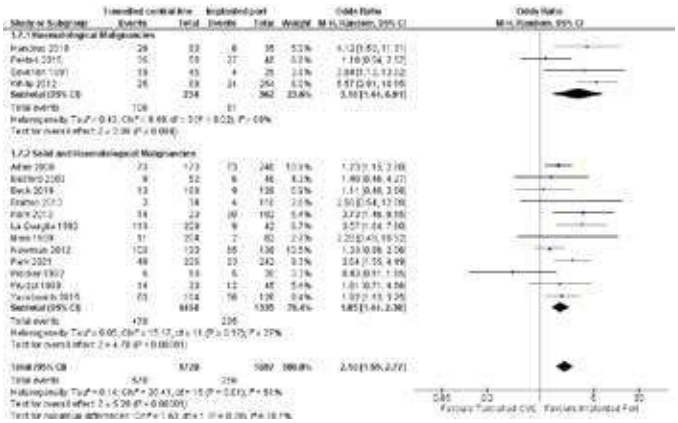

Figure – Systemic infection in T-CVC versus PORT.

ON08_PO / 14:05 – 14:10

COMPARISON OF THE FEASIBILITY OF PARTIAL NEPHRECTOMY IN UNSELECTED GROUP OF BILATERAL NEPHROBLASTOMA AND SELECTED GROUP OF UNILATERAL NEPHROBLASTOMA

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Abstract

Aim of the study: Paediatric renal tumours (RT) have high cure rates and long-life expectancy implying the importance of renal function at long run. Nephron-sparing surgery (NSS) can help to achieve this goal. Analysis of feasibility of complete NSS in bilateral and unilateral RT

Methods: Analysis of data (2016-2022) on NSS or total nephrectomy (TN) and pathology variants in unilateral (74) and bilateral (17) RT treated in a reference centre. In the first group, 45 TN and 29 NSS were performed. Patients qualified for NSS were carefully selected from local- and transferred cases. All achieved preoperative chemotherapy (SIOP2001/Umbrella).

Main results: The completeness of resections reached 98.2% for TN and 98.1% for NSS. In the unilaterals, pathologies were nephroblastoma/48, paediatric cystic nephroma/8, mesoblastic nephroma/5, other /5. In the bilaterals, 7 underwent bilateral NSS and 10 - unilateral NSS and contralateral TN. 13 were nephroblastoma, 4 nephroblastomatosis. In 2 with bilateral nephroblastoma, NSS of the single kidney were performed after an earlier unilateral TN elsewhere. A total of 24 NSS were performed in this group.

Conclusions: Bilateral NSS in stage V RT was feasible in 41%. No bilateral TN were performed. In patients with unilateral tumours, the NSS rate was 39%; the group was carefully selected, and many patients were transferred from other centres. Completeness of TN and NSS was high (98%) in both groups. The above study did not attempt to evaluate the systemic treatment or final outcomes, but the possibility of microscopically complete nephrectomy and NSS.

ON09_PO / 14:10 – 14:15

THE ROLE OF IMAGE DERIVED RISK FACTORS (IDRF) IN NEUROBLASTOMA SURGERY

Hilmican Ulman[1], Egemen Öztürk[2], Eda Ataseven[3], Bengü Demirağ[4], Deniz Kızmazoğlu[5], Zafer Dökümcü[1], Yeşim Ertan[6], Nur Olgun[7], Ahmet Çelik[1]
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Abstract

Aim of the Study: To reveal the effect of Image Derived Risk Factors (IDRF) on the long-term results of the surgical treatment of neuroblastic tumors.

Methods: The patients operated for neuroblastoma in our center between January 2003 and June 2020 were included. The cross-sectional images of the patients were re-evaluated by a single radiologist for IDRFs. Surgical and oncological data were gathered retrospectively.

Main Results: IDRFs of 137 neuroblastoma and 13 ganglioneuroblastoma patients (n=150) were evaluated. The most common IDRF was renal pedicle invasion and the chemosensitivity of individual IDRFs were diverse. Mean number of IDRFs per patient dropped from 2,1 to 1,4 with chemotherapy (p<.0001). With chemotherapy, 17 (21.5%) patients became IDRF-negative, while a partial decline was observed in 39 (49.4%). No new IDRF arose during chemotherapy. IDRFs most sensitive to chemotherapy were spinal canal infiltration, and involvement of SMA branches. Complications: need for blood transfusion (18.0%), chylothorax (2.7%), nephrectomy (2.7%), massive bleeding (0.7%), transient Horner's syndrome (0.7%), vascular injury repaired primarily (5.2%). Pre-operative IDRFs were associated with surgical complications (p=.033). Presence of IDRF at diagnosis and pre-operatively was associated with lower survival (p=.01). Vascular type IDRFs were found to be the type with the most negative impact on survival. Complete resection was performed in all patients (100%) who underwent minimally invasive surgery.

Conclusions: IDRFs and other prognostic factors can be used to predict long-term outcomes and possible complications in the surgical treatment of neuroblastic tumors. Minimally invasive surgery is safe and effective in IDRF-negative patients.

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ON10_PO / 14:15 – 14:20

NEPHRON SPARING SURGERY FOR UNILATERAL WILMS TUMOR: FEASIBILITY, SAFETY AND FUNCTIONAL OUTCOME. A TWO CENTERS EXPERIENCE.

Alessandra Rancan[1,2], Federica De Corti[2], Daniel Orbach[3], Lea Guerrini[4], Arianna Tagarelli[5], Guillaume Morcrette[6], Thomas Blanc[1], Sabine Sarnacki[1]
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Abstract

Aim of the Study: Although radical nephrectomy (RN) remains the gold standard procedure for Wilms tumor (WT), the excellent results of nephron-sparing surgery (NSS) with bilateral WT and renal cell carcinoma in the adult, suggest possible application in selected unilateral cases. We aimed to assess NSS feasibility, safety, and outcome in our patient population.

Methods: This is a bicentric retrospective study. The included institutions followed SIOP 2001 and 2016 guidelines. Demographic and clinical data of patients undergone NSS for unilateral WT from 2001 to 2021 were analyzed. Patients affected by Denys-Drash syndrome were excluded.

Main Results: 19 patients fitted the study criteria of whom 10 presented a predisposing syndrome. The most frequent procedure was partial nephrectomy (65%) over tumorectomy (35%), performed by traditional transperitoneal laparotomy except in two cases of robot-assisted-retroperitonescopy. 58% of patients presented with stage I WT, and four had nephroblastematosis only. Histology was regressive-type WT in 42%, high risk, in 31%, intermediate in 54% and low in 15%. One patient (5%) had positive margins and underwent prolonged chemotherapy, no radiotherapy or complementory nephrectomy were performed. One patient (5%) required RN for a major urological complication. Two patients (10%) required re-do NSS for relapse or its suspicion. Overall survival was of 100%, median follow-up of 6.8 years.

Conclusions: NSS is a safe procedure, whenever performed in highly specialized centers. Our good results suggest that further de-escalation of therapy might be possible, also in the case of positive margins and higher stages. Prospective multicentric study in the frame of SIOP-E should be considered.

ON11_PO / 14:20 – 14:25

IS FINE NEEDLE ASPIRATION BIOPSY A RELIABLE APPROACH FOR IDENTIFYING CANCER IN CHILDREN WITH THYROID PATHOLOGIES?

Mujdem Nur Azili[1,2], Cem Azılı[3], Suleyman Arif Bostanci[2], Elif Emel Erten[2], Vildan Selin Sahin[2], Recep Kar[2], Abdurrahman Urve Uzun[2], Sarper Muftuogulları[2], Can İhsan Oztorun[1], Ahmet Erturk[2], Sabri Demir[2], Neriman Sarı[4], Mehmet Boyraz[5], Emrah Senel[1,2]
[1]Ankara Yildirim Beyazit University, Department of Pediatric Surgery, Ankara, Turkey. [2]Ankara Bilkent City Hospital, Ankara, Turkey. [3]Ankara University, Department of Surgical Oncology, Ankara, Turkey. [4]Ankara Bilkent City Hospital, Department of Pediatric Oncology, Ankara, Turkey. [5]Ankara Bilkent City Hospital Department of Pediatric Endocrinology, Ankara, Turkey

Abstract

Aim of the Study: According to the current protocol, a solitary or suspicious thyroid nodule should be investigated with a fine needle aspiration biopsy (FNAB). Childhood thyroid nodules have a greater risk of malignancy then the reliability of the tools we utilize for the decision becomes more crucial. We aimed to assess the accuracy and precision of FNA in differentiating benign from malignant diseases in children.

Methods: This is a retrospective analysis of patients under 18 years old who underwent total thyroidectomy between January,2019 and January,2023 after FNAB. Fine-needle aspiration biopsy (FNAB) findings, repetitions of FNAB, and pathologic examinations of thyroidectomies were evaluated.

Main results: A total of 33 FNAB was performed in 26 patients who underwent total thyroidectomy. In seven patients, we repeated the FNABs which were classified as 1., 2., 3. Bethesda classifications (BC) in 2-3 months. In cases with repeated FNAB, both control FNABs and thyroidectomy evaluations were benign. In all cases, total thyroidectomy was performed due to compression symptoms or suspicion of malignities. According to the Bethesda Classification, FNAB results were statistically significant in terms of malignancy rates: nondiagnostic or unsatisfactory; 0/1, 0%, benign; 0/4, 0%, atypia of undetermined significance; 0/5, 0%, follicular neoplasia; 4/9, 44.4%, suspicious for malignancy; 4/4, 100%, malignant 3/3, 100%, p=0.001). Thyroid cancer was detected in 11 (42.3%) thyroidectomy cases.

Conclusions: Preoperative FNAB examination for suspected cancer of the thyroid in children is a reliable approach. We see that the increased incidence of thyroid cancer correlates with the higher malignancy rates in our series.

ON12_PO / 14:25 – 14:30

PEDIATRIC HEPATOCELLULAR CARCINOMA: SURGICAL UPDATE AND LONG-TERM RESULTS

Merve Karayazili[1], Ulgen Celtik[1], Eda Ataseven[2], Deniz Nart[3], Orkan Ergun[1]
[1]Ege University Faculty of Medicine, Department of Pediatric Surgery, Izmir, Turkey. [2]Ege University Faculty of Medicine, Department of Pediatric Oncology, Izmir, Turkey. [3]Ege University Faculty of Medicine, Department of Pathology, Izmir, Turkey

Abstract

Aim of the Study: Pediatric hepatocellular carcinoma (HCC) is the second most common malignant liver tumor in children after hepatoblastoma with an incidence of 1/1.500000. We aimed to evaluate the long outcome of HCC in children.

Methods: Patients who underwent surgical resection or liver transplantation (LTX) for HCC between March 2002-October 2022 were reviewed retrospectively. Patients with post-operative follow-up less than 12 months and incomplete records were excluded. Demographics, initial complaints, radiological and histopathological features, and surgical outcome were evaluated.

Main results: There were 15 patients (M/F:8/7). Median age was 11.7 years (0.8-16.4 years). Main complaint was abdominal pain (n:7). Median AFP value was 3,9ng/mL (1.2-60000 ng/mL). Median follow-up was 69 months. Histopathological diagnoses were Fibrolamellar HCC (n:8; 53.3%), HCC (n:6; 40%), HCC/Hepatoblastoma differentiation could not be made in one patient. Etiologic basis was hepatitis B cirrhosis (6.6%) in one, and metabolic liver disease in two patients (13.3%). Four of 15 patients underwent LTX (PRETEXT 3), and 9 had surgical resection (PRETEXT 1-2); 2 patients (PRETEXT 4) were considered inoperable due to late diagnosis and widespread disease. One patient who required LTX but underwent surgical resection due to lack of donor had a recurrence. Two patients died in surgical resection group. (13.3%), one of them had multiple distant metastases and the other one had mucormycosis. Survival was 100% in 4 patients who underwent liver transplantation.

Conclusions: Surgical treatment of different variants of HCC, which is a rare liver tumor in childhood, can be safely performed in experienced centers with a multidisciplinary approach.

13:30 - 14:30

Poster Presentation Session 15

Oncology II / General IV

(M2) Studio 1+2

Chair: Hanna Garnier (POL)

Ciro Esposito (ITA)

ON13_PO / 13:30 – 13:35

Percutaneous Radiofrequency Thermal Ablation of Metastatic Malignant Tumors in Children – Report from a Single Center

Hanna Garnier[1], Ewelina Wojciechowska[1], Maciej Murawski[1], Katarzyna Sinacka[2], Michal Studniarek[2], Bartosz Bascik[2], Piotr Czauderna[1]
[1]Department of Surgery and Urology for Children and Adolescents Medical University of Gdansk, Gdansk, Poland. [2]Department of Radiology, Medical University of Gdansk, Gdansk, Poland

Abstract

Aim of the Study: For many years, surgery has been the only local treatment for pulmonary and liver metastases in children. Percutaneous Radiofrequency Thermal Ablation (RFTA) is introduced as a minimally invasive alternative technique to surgery for children who were not eligible for surgery or wanted to preserve quality of life.

Methods: Four consecutive patients (1 girl and 3 boys) with metastatic disease in lungs or liver were treated with computed tomography (CT)-guided RFTA in our center. The patient with pulmonary metastasis was diagnosed with Hepatoblastoma and underwent the procedure twice. Other patients with liver metastasis were diagnosed with Yolk Sac Tumor, Hepatocellular carcinoma and Rhabdomyosarcoma. In all patients the ablation was performed under total intravenous anesthesia.

Main results: A new scan on the following day showed a complete ablation in all of the patients, and they did not experience any discomfort from the procedure. We did not observe any adverse effects of RFTA, such as pneumothorax or bleeding. The overall survival (OS) and the Quality of life (QoL) was significantly longer and better in comparison with the similar cases described in the literature.

Conclusions: CT-guided thermal ablation is a reliable and safe technique for the management of lung and liver metastases in children. With a careful selection of patients to be treated, it can prolong survival and reduce the need for chemotherapy.

ON14_PO / 13:35 – 13:40

NON-WILMS RENAL TUMORS: TWENTY YEARS EXPERIENCE IN A REFERRAL CENTER

Santiago de la Puente Pérez, Ana L. Luis Huertas, A. Gómez - Fraile, Antonio Martín - Vega, Manuel L. Espinoza Vega, B. Herrera Velasco, Isabel Carrillo Arroyo, Jose Acedo Ruiz, Cristina Riñón Pastor, Beatriz Zamora Vidal, Diego Muñoz Hernández, Paloma Ramos Rodríguez, Jose L. Alonso Calderón, Cristina Garcés Visier
Hospital Infantil Universitario Niño Jesús, Madrid, Spain

Abstract

Aim of the study: To describe our experience in the diagnosis and management of Non-Wilms Renal Tumors (NWRT).

Methods: retrospective observational study of patients aged 0-18 years with anatomopathological diagnosis of NWRT, during 2000 to 2022 in our center.

Main results: we recorded 10 patients with diagnosis of cystic nephroma (3), congenital mesoblastic nephroma (1), renal cell carcinoma (2), clear cell sarcoma (2), renal Ewing's sarcoma (1) and rhabdoid tumor (1). Sixty percent were women. The median age at diagnosis was 3.25 years (IQR 1.5-10). Molecular alterations were detected in 60% of the cases. The most frequent presenting symptoms were hematuria and palpable abdominal mass. 62.5% of patients were misdiagnosed preoperatively as Wilms tumor based on imaging data. The surgical procedure performed were ipsilateral nephroureterectomy in all cases and staging lymphadenectomy in 70%. Ninety percent of patients are still alive and without relapse of their disease after a median follow-up of 6.4 years (IQR 2-13.9).

Conclusions: the differential diagnosis of TRNM is necessary for an adequate diagnostic-therapeutic approach. Despite the progress and optimization of imaging methods, proper diagnosis is often achieved with anatomopathological study, as we observed in our series (approximately 50%). The molecular-genetic profile is an important diagnostic aspect, based on the possible use of targeted therapies in refractory patients. Detailed anatomical study using vascular mapping minimizes the risk of iatrogenic damage during tumor resection procedures.

ON15_PO / 13:40 – 13:45

Associating Liver Partition and Portal ligation for Staged hepatectomy (ALPPS) in children with hepatoblastoma – technique presentation and a literature review.

Hanna Garnier, Ewelina Wojciechowska, Maciej Murawski, Piotr Czauderna
Dept. of Surgery and Urology for Children and Adolescents, Medical University of Gdansk, Gdansk, Poland

Abstract

Aim of the Study: Children presenting with advanced primary liver tumor may fence the dilemma that the remaining tissue (future liver remnant - FLR) may not be sufficient. A FLR of 25% is recommended to maintain liver function in children.

Methods: Recently the associating liver partition and portal ligation for staged hepatectomy (ALPPS) has been introduced as a novel concept marginally resectable pediatric liver tumor.

Main results: The original ALPPS procedure consists of two-stage hepatectomy, initial portal vein ligation and in situ splitting of the liver parenchyma. The aim of this study is to present the first Polish series of pediatric patients with liver tumors previously considered to be unresectable as well as the presentation of the ALPPS technique. Three of our patients were diagnosed with hepatoblastoma (HB) and ALPPS technique was considered whenever the future liver remnant (FLR) was 40% or less of the total liver volume (TLV) determined by magnetic resonance (MR) or computed tomography (CT) scans. In all patients, a rapid growth of the FLR was observed. The second procedure was performed after 7-9 days with a median of 7,5 days.

Conclusions: In summary, the experience with ALPPS in children is still limited. This technique should be considered in children as it enables resection of locally advanced primary liver tumors, especially when liver transplantation is not feasible and unavailable.

ON16_PO / 13:45 – 13:50

IMPACT OF CHEMOTHERAPY ON IMAGE DEFINED RISK FACTORS OF MEDIASTINAL NEUROBLASTİC TUMORS

Burak Ardicli[1], Idil Rana User[1], Berna Oguz[2], Mithat Haliloglu[2], Diclehan Orhan[3], Tezer Kutluk[4], Arbay Ozden Ciftci[1], İbrahim Karnak[1], Saniye Ekinci[1]
[1]Department of Pediatric Surgery, Hacettepe University, Faculty of Medicine, Ankara, Turkey. [2]Department of Radiology, Pediatric Radiology Unit, Hacettepe University, Faculty of Medicine, Ankara, Turkey. [3]Department of Pediatrics, Pediatric Pathology Unit, Hacettepe University, Faculty of Medicine, Ankara, Turkey. [4]Department of Pediatric, Pediatric Oncology Unit, Hacettepe University, Faculty of Medicine, Ankara, Turkey

Abstract

Aim of the Study: Image defined risk factors (IDRF) are used to predict surgical risks associated with neuroblastoma excision. This study was designed to determine whether chemotherapy reduces IDRF in neuroblastic tumors.

Methods: The data of patients operated for mediastinal neuroblastic tumors in our institution between 2007 and 2020 were analyzed retrospectively. IDRF were defined as: encasement of aorta and its main branches (IDRF-1), vena cava, subclavian vessels, and carotid artery/vertebral artery/jugular vein encasement (IDRF-2/3/4), trachea and main bronchus compression (IDRF-5), spinal canal extension (IDRF-6), cervicothoracic or thoracoabdominal extension (IDRF-7), costovertebral angle infiltration between T9-12 (IDRF-8) pericardium and diaphragm infiltration (IDRF-9). IDRF numbers before and after chemotherapy were compared.

Main results: Thirteen female and nine male patients with a median age of 29 months (IQR,7-43) received 2-6 cycles of neoadjuvant chemotherapy. According to the INSS, 8 of the patients had stage 2, 2 had stage 3 and 12 had stage 4 neuroblastoma. There were 10 patients in high-risk group, 5 in intermediate-risk group, and 7 in low-risk group. Total IDRF numbers before and after chemotherapy were 79 and 54, respectively. The number of IDRFs decreased in 15 patients (68%). The difference between median IDRF number on diagnosis was 4 (IQR,2-5) and after chemotherapy was 2 (IQR,1-4) was statistically significant ($p<0.001$). The reductions in IDRF-1,3,5 and 6 were statistically significant ($p=0.046$, $p=0.046$, $p=0.005$, and $p=0.025$, respectively).

Conclusions: Neoadjuvant chemotherapy decreases IDRF numbers by reducing involvement of aorta, carotid artery/vertebral artery/jugular vein, spinal canal extension and airway compression in mediastinal neuroblastic tumors.

ON17_PO / 13:50 – 13:55

SECONDARY TUMORS AFTER PEDIATRIC BONE MARROW TRANSPLANTATION: CANCER SURVIVORS' LONG-TERM CHALLENGES

Giovanna Riccipetitoni[1], Marta Gazzaneo[1], Simonetta Mencherini[2], Giovanna Giorgiani[2], Marco Zecca[2]
[1]IRCCS Policlinico San Matteo, University of Pavia, Pavia, Italy. [2]IRCCS Policlinico San Matteo, Pavia, Italy

Abstract

Aim of the Study: Pediatric oncologic survivors are increasing, as well as the incidence of long-term sequelae and secondary tumors (ST). After bone marrow transplantation (BMT) the incidence of ST at 5 - 10 years is estimated 0.7% - 2.2%. Our study evaluated incidence, type, and timing of ST in a large cohort of children submitted to bone marrow transplantation (BMT).

Methods: We retrospectively reviewed data of 438 patients affected by onco-haematologic disease submitted to 520 BMT procedures in the period 2010-2022 focusing on ST. BMT was performed as follows: 81 MFD (Matched-Family-Donor), 193 PMFD (Partially Matched-Family-Donor), 175 MUD (Matched-Unrelated-Donor), 69 AUTO (Autologous), 2 Twin-Donor.

Main results: At follow-up a secondary tumor was detected in 10 patients (2,2%). Underlying diseases were: ALL (4), Hodgkin Lymphoma (2), Aplastic Anemia (2), AML (1), Dyskeratosis Congenita (1). BMT procedures consisted of 3 MFD, 4 PMFD, 2 AUTO, and 1 MUD. Two ALL patients underwent 2 cycles of MFD, the incidence of ST was higher in this group (2.4% vs 1.8% single transplantation group) (p-value 0.02%). Diagnosed STs were: 6 Thyroid Carcinomas (5 papillary; 1 follicular with positive nodes), 1 Epithelioid Hemangioendothelioma, 1 hand Squamous Carcinoma, 1 Multiform Glioblastoma and 1 LLA. Median time of onset was 79,4 months (range 11-147). Thyroid neoplasms were prevalent (6/10) with a median onset of 58,3 months (11-114).

Conclusions: The number of children survivors after BMT has significantly augmented, drawing attention to the importance of long-term multidisciplinary follow-up, general health status, and risk of developing secondary tumors.

ON18_PO / 13:55 – 14:00

EXPECTED RISK OF COMPLICATIONS AFTER GROSS TOTAL RESECTION OF NEUROBLASTOMA

Anna Wojtylko[1,2], Małgorzata Rapala[1], Jan Godzinski[1,2]
[1]Dept. Of Paediatric Surgery Marciniak Hospital, Wrocław, Poland. [2]UMED Dept. Of Paediatric Traumatology and Emergency Medicine, Medical University, Wrocław, Poland

Abstract

Aim of the Study: The surgical treatment of advanced stages of neuroblastoma (NBL) presenting image defined risk factors (IDRF+) creates significant difficulties. In these cases, complete resection is unlikely, but gross total resection (GTR) improves the outcomes. The aim of the study was to determine whether the rate of completeness of GTR has an impact on the rate of complications.

Methods: Analysis of the perioperative period of 61 children IDRF+ submitted to GTR in the national reference centre (2018-2022). It was investigated whether there is a relationship between quality of GTR, tumour location, number of IDRF factors, age, genetics (presence of N-myc amplification) and risk of perioperative complications (haemorrhage requiring blood transfusion, nephrectomy)

Main results: We did not observe any lethal complications, neither prolonged post-operative ileus nor wound dehiscence. The most common complications were bleedings requiring transfusion of red blood cell (RBC) and fresh frozen plasma (18/61 pts; 29%); in 22 pts only RBC was transfused due to chemotherapy related anaemia. Nephrectomy had to be performed in one case. Statistically significant correlation was shown between the risk of complications and lower completeness of GTR (p= 0,0313) as well as number of IDRF (p=0,0142). Regarding the tumour location, the lowest rates were observed in adrenal tumours.

Conclusions: In carefully managed patients, risk of GTR even in case of several IDRFs seems acceptable. The perioperative bleeding is the commonest complication. Its risk rising along with the decrease of completeness of resection describes rather the difficulty of GTR related to IDRFs than a surgical planning and executing.

GE29_PO / 14:00 – 14:05

PRELIMINARY EXPERIENCE WITH BLEOMYCIN ELECTROSCLEROTHERAPY (BEST) IN THERAPY-RESISTANT VENOUS AND LYMPHATIC MALFORMATIONS IN CHILDREN

Mirko Bertozzi[1], Elena De Lorenzi[1], Elisa Mussuto[2], Giulia Bertino[1], Simonetta Mencherini[2], Giovanna Riccipetitoni[1]
[1]IRCCS Policlinico San Matteo, University of Pavia, Pavia, Italy. [2]IRCCS Policlinico San Matteo, Pavia, Italy

Abstract

Aim of the Study: Sclerotherapy has been commonly used for slow-flow vascular (VM) and lymphatic malformations (LMs), using different agents. However, in microcystic LMs and complex VMs, this therapy may be ineffective. Recently, an innovative electrosclerotherapy with low-dose Bleomycin (BEST) has been successfully applied in patients previously treated for VM and LMs without improvement.

Methods: After successful treatment with BEST of 3 adult patients with complex lesions of head-neck, performed by our ENT surgeons, we started our experience.

Main results: Case 1. A 18-year-old girl affected by a VM of the right thigh, presenting with pain. US and MRI showed a focal VM deep in the right semimembranosus muscle (35x20x41mm). She had been previously submitted in another Institution to failed attempt of surgical removal. A BEST procedure was carried out, without any complication. At 9 months follow-up the lesion disappeared at US and the girl is completely asymptomatic. Case 2. A newborn with a neck, tongue and sublingual floor giant mixed LM obstructing upper airways was submitted to tracheostomy and sclerotherapy with OK-432 at the same time. Sirolimus therapy was conducted for 10 months obtaining good results in reducing the neck lesions, while the sublingual LMs didn't improve, still limiting the air intake. BEST was applied to treat sublingual floor lesions. 1 month after BEST US showed a significative size reduction of the lesion.

Conclusion: BEST appears to be an effective therapy for children with VMs and LMs non-responding to conventional therapy, however more studies with larger population are needed to define its efficacy.

GE30_PO / 14:05 – 14:10

DISABILITY ASSESSMENT OF VERY LOW BIRTH WEIGHT SURGICAL PATIENTS AT 2 YEARS OF AGE

Giorgia Speca[1,2], Nadia Battajon[3], Silvia Cocchio[4], Paola Lago[3], Paola Midrio[5,2]
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Abstract

Aim of the study: The aim was to investigate if major surgical procedures represent a risk factor for disability development at 2 years of age in very low birth weight (VLBW) patients.

Methods: VLBW patients treated between 2010-2020 were retrieved and divided into surgical-group (S-group) and non-surgical (NS-group). A binary logistic multivariate regression analysis was carried out, taking into account the potential confounding factors such surgery, birth weight, and gestational weeks.

Main results: 746 VLBW infants were collected and 567 analyzed. Sixty-five/567 (11.5%) underwent a major surgical procedures (NEC, intestinal resection, closure of Botallo duct, and laser for retinopathy). Surgery and birth weight strongly correlated with the risk to develop disability. In particular, the risk of minor (Bayley 70-89) and major (Bayley <70) disability was twice and approximately six times higher in S-group compared to NS-group. The week of gestation shows only a trend towards increase of risk. Moreover, 29 patients (5.1%)underwent assessment at 4 years of age, and, although numbers did not allow for statistical comparison, the trend toward increase of disability was confirmed also at this age.

Conclusions: There is a statistically significant correlation between surgery and the risk of developing neurocognitive disorders at 2 years of age in VLBW surgical patients. The trend is confirmed at 4 years of age, therefore it is recommended to prolong the neurocognitive follow up beyond the standard time point at 2 years of age.

GE31_PO / 14:10 – 14:15

ACCURACY OF PRE-OPERATIVE ULTRASOUND IN PREDICTING PAEDIATRIC OVARIAN PATHOLOGY

Dylan Wills, Simon Clarke, Amulya Saxena, Muhammad Choudhry
Chelsea and Westminster Hospital, London, United Kingdom

Abstract

Aim of the Study: This study evaluated the accuracy of ultrasound and surgical appearance compared with histological diagnosis in paediatric ovarian pathology in a single-centre.

Methods: This is a retrospective data collection and analysis of records from 2017 to 2022. Ultrasound reports and operative findings were compared with histological findings for patients who underwent surgical management of ovarian pathology. The aim was to evaluate the accuracy of pre-operative ultrasound imaging. Histological report was used as the gold standard diagnosis.

Main results: 47 ovarian procedures were identified of which 30 had undergone formal ultrasound and had tissue histology. Fifteen (54%) presented with abdominal pain and 9 (32%) with an antenatally diagnosed cyst. Figure 1 shows the accuracy of each diagnostic modality including intra-operative appearance. Logistical regression showed no association between ultrasound echogenicity (p=0.99), ultrasound atypia (p=0.60) or combination (echogenicity or atypia) (p=0.99) with complex ovarian cysts. No ovarian malignancies were identified.

Conclusions: Ultrasound showed low diagnostic sensitivity and specificity for diagnosis of specific pathology but remains a good diagnostic modality for confirming the presence of ovarian pathology. Surgical decision-making at operation should consider the surgical appearance of cyst above ultrasound findings.

24th EUPSA CONGRESS
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GE32_PO / 14:15 – 14:20

HEALTH CARE COSTS RELATED TO INGUINAL HERNIA REPAIR WITH OR WITHOUT CONTRALATERAL EXPLORATION IN INFANTS (HERNIIA-TRIAL): A RANDOMIZED CONTROLLED TRIAL

Sanne Maat[1], Kelly Dreuning[1], Maurits van Tulder[2], Hanneke van Dongen[2], Denise de Gruijter[1], Han Anema[1], Jos Twisk[3], Gerda Zijp[4], Jasper BeenEras[5], Ruben Visschers[6], Olivier Theeuws[7], Mart Bender[8], Hester Langeveld[5], Robertine van Baren[9], Ernst van Heurn[1], Joep Derikx[1]
[1]Amsterdam UMC, Amsterdam, Netherlands. [2]VU, Amsterdam, Netherlands. [3]Amsterdam UMC, Asterdam, Netherlands. [4]Haga Ziekenhuis, Den Haag, Netherlands. [5]Erasmus MC, Rotterdam, Netherlands. [6]MUMC+, Maastricht, Netherlands. [7]CHC Liege, Liege, Belgium. [8]MMC, Veldhoven, Netherlands. [9]UMCG, Groningen, Netherlands

Abstract

Aim of this Study: This study evaluates the health care costs of contralateral surgical exploration or not during unilateral inguinal hernia repair in children younger than six months with unilateral inguinal hernia.

Methods: This multicenter randomized controlled trial included children aged 0-6 months undergoing primary unilateral hernia repair. Participants were randomly assigned (1:1) to unilateral inguinal hernia repair without (UR-group) or with contralateral exploration and eventual patent processus vaginalis closure (CE-group). Total health care costs included duration of hospitalization, duration of surgery and anesthesia, additional interventions, outpatient clinic visits, telephone calls and medication costs. All costs were calculated using guideline prices valued in the Netherlands by the healthcare insurers. Bootstrapping techniques were used to estimate the uncertainty around cost-effective estimates. Statistical testing is performed using Chi-square tests and t-tests (two-sided with α=0.05) according to intention-to-treat-principle.

Main results: A total of 367 infants were included (UR-group: n=180, CE-group: n=187). Total cost in the CE-group where higher compared to the OR-group (OR-group: €2663 (SD 1546), CE-group: €2918 (SD 1302), p=0.08). This difference is mostly explained by higher surgery costs for initial inguinal hernia repair in the CE-group because of longer operation room use (UR-group: €1719 (SD 9012), CE-group: €2089 (SD 877), p=0.33). Mean costs of day care admission or clinical admission did not differ between the UR-group and the CE-group.

Conclusions: Total health care costs are equal for children younger than six months with unilateral hernia undergoing repair with or without contralateral exploration.

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GE33_PO / 14:20 – 14:25

CHANGE IN ATTITUDES TOWARDS NON-OPERATIVE MANAGEMENT AS AN ALTERNATIVE TO APPENDICECTOMY IN UNCOMPLICATED APPENDICITIS – A REPEATED NATIONAL SURVEY

George Bethell[1,2], Robert Wheeler[1], Simon Eaton[3], Nigel Hall[1,2]
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Abstract

Aim of study: To determine whether in UK consultant attitudes regarding use of non-operative management (NOM) in uncomplicated acute appendicitis have changed over time.

Methods: UK consultant specialist paediatric surgeons who treat acute appendicitis were invited to complete an electronic survey in 2018 and again in 2023. Outcomes of interest were change in views and practice towards use of NOM for uncomplicated appendicitis in children.

Results: There were 137 responses in 2018 and 46 in 2023. The proportion of respondents who felt that NOM should be routinely discussed with parents and children and offered as a treatment was higher in 2023 compared with 2018 (39 vs. 22%, p=0.004). No respondents in 2023 felt that NOM should never be used however 9% did in 2018 (p=0.04). Regarding actual practice, respondents in 2023 were more likely to routinely offer NOM of uncomplicated appendicitis compared to 2018 (17 vs. 2%, p=0.0003) and in 2023 respondents were less likely to never offer NOM (33 vs 51%, p=0.04) compared to 2018. Despite this, a similar number of respondents in 2018 and 2023 felt that NOM was as effective or more effective than appendicectomy (18 vs. 22%, p=0.84). The quality of research in support of NOM as an alternative to appendicectomy was felt to be similar (figure).

Conclusion: Willingness of consultants to consider and offer NOM for uncomplicated appendicitis has increased over time despite no perceived increase in quality of research evidence. The outcomes of robust randomized controlled trials in children are eagerly awaited.

GE34_PO / 14:25 – 14:30

ROBOTIC-ASSISTED SURGERY FOR MANAGEMENT OF GYNECOLOGICAL PATHOLOGY IN CHILDREN: A MULTICENTER EXPERIENCE.

Ciro Esposito[1], Thomas Blanc[2], Mariapina Cerulo[1], Fulvia Del Conte[1], Vincenzo Coppola[1], Claudia Di Mento[1], Quentin Ballouhey[3], Laurent Fourcade[3], Benedetta Lepore[1], Francesca Carraturo[1], Annalisa Chiodi[1], Maria Escolino[1]
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Abstract

Aim of the Study: This descriptive, retrospective study aimed to report a multicenter experience regarding the role of robotic-assisted surgery (RAS) for management of gynecological pathology in pediatric patients.

Methods: The medical records of all children and adolescents with gynecological pathology, operated in 3 different institutions over a 3-years period, were retrospectively collected. Robot docking time, total operative time, length of stay (LOS), analgesic requirement, complications, conversions, and pathology results were analyzed.

Main results: Fifteen girls, with median age of 13.4 years (range 1-17) and median weight of 44.5 kg (range 12-73), received these RAS procedures: ovarian cystectomy for serous cystoadenoma (n=2), salpingo-oophorectomy for mature cystic teratoma (n=5), bilateral gonadectomy for ovotestis (n=2) and Turner syndrome SRY+ (n=1), salpingectomy for fallopian tube lesion (n=1), Gartner cyst excision (n=1), paravaginal ganglioneuroma resection (n=1), fistula closure in urogenital sinus (n=1) and vaginoplasty using ileal flap in cloaca malformation (n=1). Median operative time was 172 minutes (range 65-330), and median docking time was 13.4 min (range 10-20). No conversions to open or laparoscopy was reported. No intra- or post-operative complications occurred. Median LOS was 4.8 days (range 2-10), and median analgesic requirement was 1.5 days (range 1-4). One patient needed redo-surgery for recurrent Gartner cyst.

Conclusions: RAS is a safe and feasible option for surgical management of pediatric gynecological pathology, although no conclusive data are available to confirm its superiority over traditional laparoscopy. Randomized, prospective, comparative studies are needed to confirm these preliminary results and identify the gold standard approach in such patients.

14:30 - 16:30

Scientific Session IX

Case Reports (Parallel Session)

(M1) Regency 2

Chair:

Martin Lacher (GER)

Augusto Zani (CAN)

Agnieszka Wiernik (POL) TEPS

CR01_SO / 14:30 – 14:35

FROM NEONATAL OCCLUSION TO THYROIDECTOMY: HOW A RECTAL SUCTION BIOPSY CAN SAVE A LIFE IN AN UNEXPECTED WAY

Fabrizio Vatta[1], Audrey Guinot[1], Louise Galmiche[2], Sebastien Faraj[1], Marc-David Leclair[1]
[1]Pediatric Surgery Department, Nantes University Hospital, Nantes, France. [2]Department of Pathology, Nantes University Hospital, Nantes, France

Abstract

Aim of the study: Multiple endocrine neoplasia 2B (MEN2B) is an extremely rare disease associated with an early development of medullary thyroid carcinoma (MTC). Prognosis is good if a thyroidectomy is performed before one year of life, nevertheless diagnosis remains challenging due to MEN2B high de novo occurrence and vague extra-endocrine symptoms. We present a case of neonatal occlusion where rectal suction biopsy allowed a timely and life-saving diagnosis.

Case description: A two-day-old girl was transferred to our tertiary-care center for abdominal distension and bilious vomiting. Meconium was expelled within the first 24 hours of life. Abdominal X-ray showed a generalized bowel distension. Regular bowel irrigation was started, which helped relieving GI symptoms. A rectal suction biopsy was performed, which showed no sign of Hirschsprung disease but revealed a diffuse ganglioneuromatosis highly suspected for MEN2B. Diagnosis was confirmed by a genetic analysis (RET mutation M918T). Constipation management required regular bowel irrigations for the first four weeks of life. Symptoms were then well managed with oral laxatives alone. Preoperative calcitonin was regularly monitored (latest pre-operative 71pg/ml). A total thyroidectomy with central node dissection was performed at the age of 6 months. Pathology found two limited micro-MTC (pT1aN0). Post-operative calcitonin is 5pg/ml. One-year follow-up is uneventful.

Conclusions: In literature, only four other cases of MEN2B have been diagnosed via a rectal biopsy in newborns. As MTC can occur already before one year of age, early recognition of GI features such as neonatal occlusion can lead to timely diagnosis and life-saving thyroidectomy.

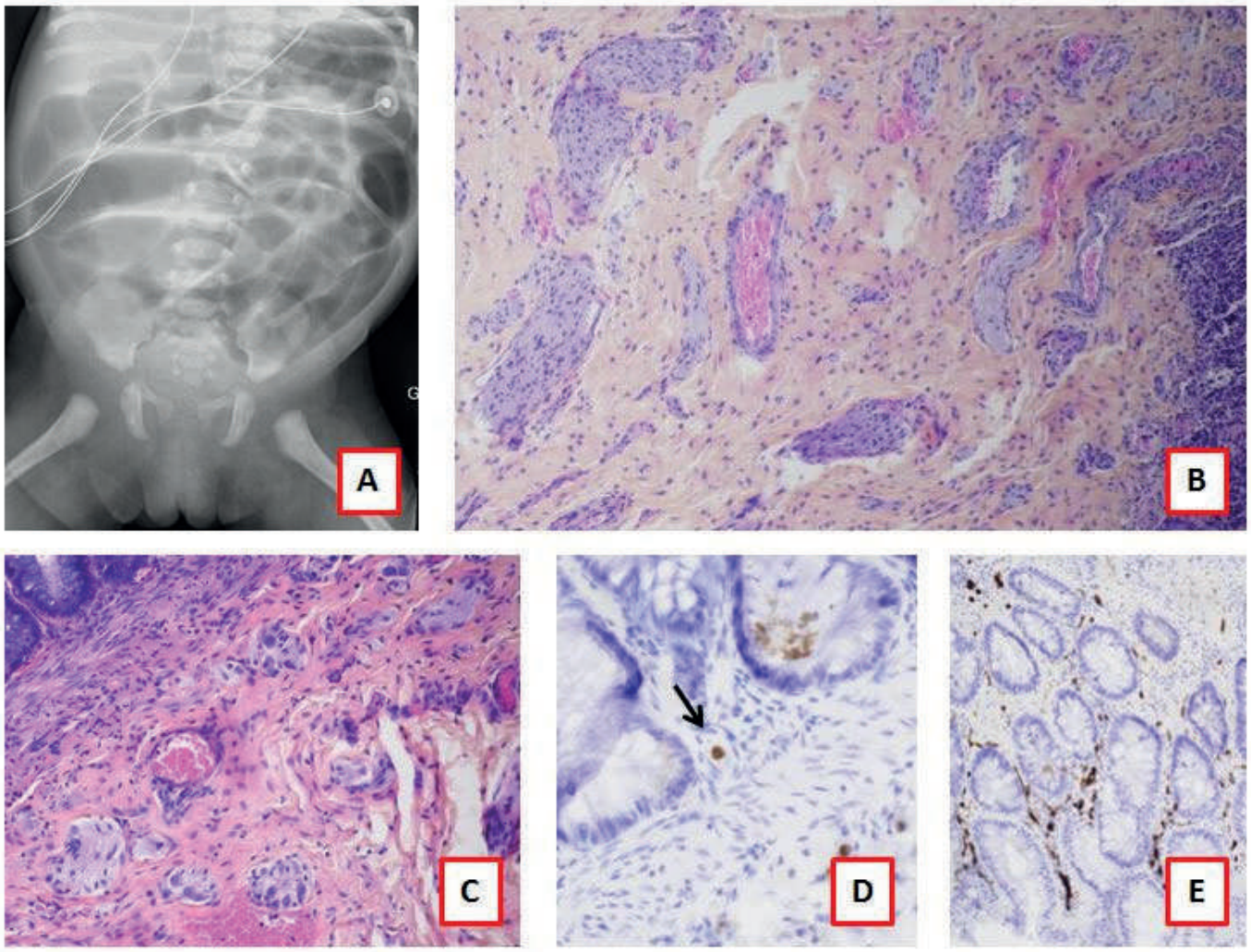

Fig. 1
A : Abdominal X-Ray showing bowel distension at two day of life
B-E : Rectal suction biopsies presenting characteristics of ganglioneuromatosis

- B-C : Staining with hematoxylin and eosin showing multiple hyperplastic submucosal nerve plexi (B) and numerous ganglion cells (C)
- D : Immunostaining with PHOX2B of multiple ganglion cells showing ectopic ganglion cells within lamina propria (arrow)
- E : immunostaining with Calretinin of nerve fibers within the mucosal layer

CR02_SO / 14:35 – 14:40

CASE REPORT: A NEONATE WITH AN UNCOMMON PERINEAL MALIGNANCY

Francesca Maestri[1], Alessandra Preziosi[1], Anna Morandi[1], Anna Maria Fagnani[1], Antonio Di Cesare[1], Ernesto Leva[1,2]
[1]Department of Pediatric Surgery, Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milano, Italy. [2]Department of Clinical Sciences and Community Health, University of Milan, Milano, Italy

Abstract

Aim of the study: To describe a rare congenital presentation of soft tissue malignancy.

Case description: A full-term female was born with an irregular, fleshy, pedunculate, (1.5x1x1 cm) lesion in the perineum, originating from the skin just adjacent to left anal hemi-circumference, without mucosal involvement nor anal occlusion (Figure 1). The pregnancy was uneventful, and the baby was otherwise healthy. Perineal ultrasound (US) described the lesion as composed by homogeneous tissue with thin septa continuing in the subcutaneous tissue, and an intact anal canal. Abdominal US was normal. Pelvic MRI confirmed a solid, T2-hyperintense, contrast-enhanced lesion, without signs of infiltration into the pelvis. Blood exams were normal and tumour markers negative. On the assumption that the lesion was of benign nature, the patient was operated on 24th day of life. Macroscopically complete surgical excision of the mass was performed, with sparing of the anal canal. Pathological examination revealed botryoid rhabdomyosarcoma with infiltrated margins. The child was restaged with abdominal MRI and chest X-ray as group II according to the Intergroup Rhabdomyosarcoma Study Group (IRSG) classification and stage II according to the TNM pretreatment staging classification. At 40 days old (weighing 4.8 kg), she started chemotherapy with a plan of 9 courses of ifosfamide, vincristine and actinomycin-D. Currently, she is well tolerating the 5th cycle.

Conclusions: Congenital rhabdomyosarcomas are very rare and infrequently arise from perineum. Biopsy of the lesion is mandatory to reach a diagnosis and tailor a programme of chemotherapy.

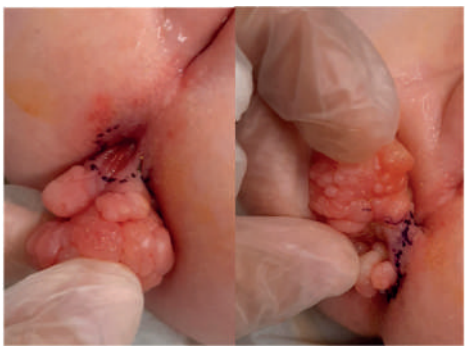

Figure 1 – Presentation of the mass at surgery.

CR03_SO / 14:40 – 14:45

EXOPHYTIC PANCREATOBLASTOMA: AN UNKNOWN TUMOR IN INFANTS

Marinos Papoutsakis[1], Eleftheria Georgiou[1], Marianna Polydorides[1], Katerina Okeke[1], Maria Petridou[1], Valantis Mariorakis[1], Ioannis Georgakis[1], Angeliki Dimatou[2], Lambrini Damianidou[2], Evgenia Papakonstantinou[2]
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[2]Department of Pediatrics Hippokration General Hospital of Thessaloniki, Thessaloniki, Greece

Abstract

Aim of the Study: We present an unknown tumor, in a male infant aged two months with primary diagnosis of mesenteric cyst. After exploratory laparotomy an exophytic pancreatoblastoma was revealed. A potentially malignant tumor with an encapsulated organoid structure that does not directly interfere with the main duct system and originates from the epithelial exocrine cells of the pancreas. The criteria for diagnosing pancreatoblastoma have been described by Buchino in 1984. The terminology used 20 years ago was infantile pancreatic carcinoma.

Case description: A male infant 35 days old, presented with mild abdominal distention, regurgitation, and weight loss. After paraclinical investigation, a retroperotoneal mass was identified, and diagnosis of mesenteric cyst was established. Exploratory laparotomy revealed a compact tumor with cystic elements of 4,8x4,5x3,5cm proximal to pancreatic body and over the congested mesenteric vessels. A complete exeresis was achieved. Postoperative biopsy reports from various laboratories in Greece and Germany, identified an exophytic pancreatoblastoma. The postoperative period was uneventhfull. Adjuvant chemotherapy with cisplatin and doxonubicin followed.A two year follow up, no metastasis or recurrence was detected.

Conclusions: Pancreatoblastoma is a very rare type of tumor with mean age of diagnosis at 5 years old. It is the most common malignant pancreatic tumor in young children and its presentation is variable and often non-specific. Complete surgical resection is the gold standard. Knowledge of this rare tumor is important for the clinician confronted with a retroperitoneal mass in a young child even in infants.

CR04_SO / 14:45 – 14:50

MANAGEMENT OF AN UNUSUAL CASE WITH MULTIDISCIPLINARY TEAMWORK: COMPLETE DIFYGUS, DOUBLE PERINEUM WITH RIGHT BLADDER ATROPHY AND LEFT CLOACAL EXTROPHY

Ayşenur Celayir[1], Sırma Mine Tilev[2], Neslihan Başkılıç[3], Ferah Alay Ünay[3], Perçin Caşkan[4], Mehmet Ali Talmaç[5], Dilek Başar[6]
[1]University of Health Sciences, Turkey. İstanbul Zeynep Kamil Maternal and Children's Diseases Health Training and Research Center, Department of the Pediatric Surgery, Prof.Dr., MD,, İstanbul, Turkey. [2]University of Health Sciences, Turkey. İstanbul Zeynep Kamil Maternal and Children's Diseases Health Training and Research Center, Department of the Pediatric Surgery, Dr., MD,, İstanbul, Turkey. [3]University of Health Sciences, Turkey. İstanbul Zeynep Kamil Maternal and Children's Diseases Health Training and Research Center, Department of the Anesthesiology and reanimation, Dr, MD,, İstanbul, Turkey. [4]University of Health Sciences, Turkey. İstanbul Bağcılar Health Training and Research Center, Department of the Plastic and Reconstructive Surgery, Specialist Dr,, MD,, İstanbul, Turkey. [5]University of Health Sciences, Turkey. İstanbul Şişli Hamidiye Etfal Healt Training and Research Center, Department of the Orthopedy and Traumatology, Speciialist Dr, MD, İstanbul, Turkey. [6]University of Health Sciences, Turkey. Trabzon Kanuni Rearch and Training Center, Department of the Pediatric Surgery, Specialist Dr, MD,, İstanbul, Turkey

Abstract

Aim of the Study: Dipygus as the caudal duplication syndrome is an incomplete form of twinning due to the incomplete division of the embryo. Complete dipygus is a very rare malformation involving malformation complete lumbosacral duplication with 2-pelvis and 4-lower-limb. Herein, our experience in a Somalian baby with complete difygus with very complex genitourinary/hindgut anomalies was presented.

Case Description: A 45-day-old baby transferred from Somalia, had a hypogastric omphalecele which healed as ventral hernia, and mucosal tissue about 5x12cm's under the healed omphalecele (bladder extrophy epispadias in rigth and cloaca extrophy in left). Two-parasitic-immobile-leg was in length of 15cm-right and 20cm-left located in between the two-normal legs. Urinary output from two-ureter orifices of bladder extrophy and fecal output from on left corner of cloaca extrophy were seen. Chromosome analysis was 46,XX. After contrast enhanced CT and MRI, the patient was operated. Primary repair of bladder extrophy with augmented caecoileal tissues from cloaca extrophy, Mitrofanoff, tubularization cloacal extrophy as cloacal channel, and colostomy were done; urethral orifice on right and cloacal orifice without urethra on left were created, 9-cm away from each other due to pubic diastasis. Excess skin/subcutaneous tissues, duplicated pubic-bone, middle parasitic legs were removed, and skin was closured with multiple V-Y-flap. 4000gr-patient received 80ml/h-intravenously fluid, 70ml-plasma, 70ml-erythrocyte suspension during the 7-hours' operation.

Conclusions: After anatomical evaluation based on contrast-enhanced MRI and/or CT, unless severe cardiovascular pathology or respiratory distress is present, surgery can be performed electively by a multidisciplinary team at a determined timing.

CR05 _SO / 14:50 – 14:55

COMPLEX CASE OF CONGENITAL PULMONARY SEQUESTRATION WITH SUCCESSFUL "EXIT" PROCEDURE

Arunas Strumila[1], Ruta Maciulyte[1,2], Gabija Pikturnaite[2], Gilvydas Verkauskas[1]
[1]Vilnius university hospital Santaros clinics, Children's hospital, Vilnius, Lithuania. [2]Vilnius university Faculty of Medicine, Vilnius, Lithuania

Abstract

Aim of the study: The aim of this report is to emphasize the importance of "Ex-utero intrapartum treatment" (EXIT) procedure in this challenging case of unique symptomatic congenital extra-lobar pulmonary sequestration with pedicle torsion.

Case description: A 22-year-old primigravida was referred to our tertiary centre at 29+4 gestational weeks due to equivocal foetal left-sided supradiaphragmatic mass, left hydrothorax and rightward displacement of foetal heart. Magnetic resonance imaging (MRI) of foetus confirmed the diagnosis of pulmonary sequestration. Since the foetus deteriorated rapidly over the time to bilateral hydrothorax and compression of both lungs, the pregnancy could not be continued. Therefore, pulmonary maturation process was initiated at 31+5 gestational week, followed by "EXIT" strategy choice 1 week later: after Caesarean section and prior to umbilical cord clamping, the paediatric surgeon performed lung decompression helping the new-born to breathe. 2140 g neonate was shifted to the intensive care unit for further management of respiratory distress syndrome, heart failure and pulmonary hypertension. Patient was discharged from the hospital after 3 weeks being stable. Finally, the pulmonary sequestration was removed during elective thoracoscopy at the age of 6 months. 5 days later the patient was discharged with no complications to this day.

Conclusions: Pulmonary sequestration can lead to lung hypoplasia or prenatal bilateral hydrothorax, which may require prompt surgical interventions. If pregnancy cannot be continued, "EXIT" technique should be considered as a prior management option. This method allows to maintain foetus's oxygenation through the umbilical cord and establish cardiopulmonary function during urgent lifesaving procedures.

CR06_SO / 14:55 – 15:00

TORSION OF AN ACCESSORY LIVER LOBE IN A NEWBORN

Tobias Krause, Dietmar Cholewa, Benjamin Liniger, Steffen Berger, Milan Milosevic
Dept. Pediatric Surgery, University Children's Hospital, Inselspital, University of Bern, Bern, Switzerland

Abstract

Aim of the Study: Accessory liver lobes are rare. Especially in neonates, possible symptoms, diagnostic workup, and outcome of this entity are not described. We present the rare case of torsion of an accessory liver lobe in a neonate.

Case description: A 13-day-old boy presented with failure to thrive and hematemesis without fever. The initial workup with sonography, MRI, and upper GI study was suspicious of a duplication cyst, most likely in the posterior wall of the stomach. Laboratory and radiological findings were not suggesting a choledochal cyst. We performed a laparotomy with resection of the 3.2 x 2.1 x 1.1 cm mass. Intraoperatively, the cystic formation extended from of the liver bed up to the lesser curvature of the stomach. The mass was attached to the left liver lobe with fibrous bands. Histopathology revealed necrotic liver parenchyma with patent viable biliary ducts, indicative of an accessory liver lobe that underwent torsion in the perinatal period. The postoperative course and follow-up (3 months so far) were uneventful.

Conclusions: To our knowledge, this is the youngest described patient in the literature with an accessory liver lobe torsion. It presents an extremely rare differential diagnosis in symptomatic neonates with a cystic mass in the upper abdomen.

CR07_SO / 15:00 – 15:05

COLORECTAL CANCER IN CHILDREN: A CASE SERIES.

Giada Morgani[1,2], Riccardo Guanà[1], Federico Scottoni[1], Luca Lonati[1], Salvatore Garofalo[1], Fabrizio Gennari[1]
[1]UOC Chirurgia Pediatrica, PO Ospedale Infantile Regina Margherita, Città della Salute e della Scienza, Torino, Italy. [2]Università degli studi di Padova, Dipartimento di Salute della Donna e del Bambino, Padova, Italy

Abstract

Aim of the Study: Colorectal cancer (CRC) is a rare disease entity in the pediatric population, with an estimated incidence of 0.08:100000 in the population aged 0-19. CRC in children is characterized by an aggressive behavior and a delayed diagnosis due to its nonspecific clinical presentation. The aim of the present study was to raise attention on CRC's diagnosis and to present three metastatic cases treated at our hospital in the last 11 years (2 girls and 1 boy, 13-15 years-old).

Case description: Clinical presentation was characterized by recurrent abdominal pain and constipation; no weight loss or other signs were present. All patients were subjected to laparoscopic tumor resection because of intestinal obstruction. Laparoscopic exploration revealed extended peritoneal carcinosis, not previously detected at imaging. In the case of the 14 years-old boy, conversion to laparotomy was necessary to safely remove the mass. No stoma was created. A poorly differentiated signet ring cell adenocarcinoma was found at histologic diagnosis in all patients. Adjuvant chemotherapy with FOLFOX regimen was administered. The 15 years-old girl died one year after surgical resection, while the other girl is off therapy since 2013 and the boy is still on adjuvant treatment.

Conclusions: Aggressive behavior and delayed diagnosis increase the burden of better understanding the mechanisms and therapeutic strategies for CRC. In clinical practice, unclear cases of abdominal pain should raise suspicion. Early recognition and surgical resection remain the mainstay of treatment. Laparoscopic approach can help in disease staging, as in case of peritoneal carcinomatosis, and improving post-operative outcomes.

CR08_SO / 15:05 – 15:10

TRACHEAL AGENESIA, A RARE CONGENITAL MALFORMATION: SURGICAL MANAGEMENT

Recep Kar[1], Doğuş Çalışkan[2], Sarper Müftüoğulları[1], Müjdem Nur Azılı[2], Emrah Şenel[2]
[1]Ankara City Hospital, Children Hospital, Department of Pediatric Surgery, Bilkent,, Ankara, Turkey.
[2]Ankara Yıldırım Beyazıt Unıversıty Medical Faculty Department of Pediatric Surgery, Ankara, Turkey

Abstract

Aim of the Study: Tracheal agenesis (TA) is one of the rare congenital anomalies seen in newborns. The success of securing the airway and surgical intervention in patients with TA is very low. Here, a newborn with type-3 TA who underwent surgical repair is presented.

Case description: Our case is full term newborn with 2.700 gr weight. Patient was intubated in the neonatal intensive care unit (NICU) . After feeding by nasogastric tube the food was aspirated from endotracheal tube, then patient was referred to NICU our hospital at 5th postnatal day with suspicion of tracheoesophageal fistula. Patient was evaluated as TA (type 3) by neck and thorax computed tomography. The patient had been intubated via esophagus, it was understood that the lungs and stomach were ventilated. Patient was taken into operation room. The esophagus was revealed through right thoracotomy. The esophagus was transected at distally where was also distal to the level the right and left main bronchus separated, and the connection between stomach and esophagus was interrupted. Then, the proximal esophagus was transected cervical pouch was closed. The middle esophageal segment was constructed as esophagostomy (pseudo-tracheostomy). Gastrostomy was performed. Patient was intubated by pseudotrachetomy and died on the day of sixteen.

Conclusions: Postnatal management of TA is difficult. There is no accepted surgical protocol in the treatment. Surgical methods that will ensure the long-term survival of the patients, the primary aim is to provide airway, to eliminate the need for mechanical ventilators in the long term, and to ensure gastrointestinal integrity of the patients.

CR09_SO / 15:10 – 15:15

URETEROINGUINAL HERNIATION WITH URETERAL STRICTURE AND HYDRONEPHROSIS: THE SIGNIFICANCE OF PREOPERATIVE DIAGNOSTIC

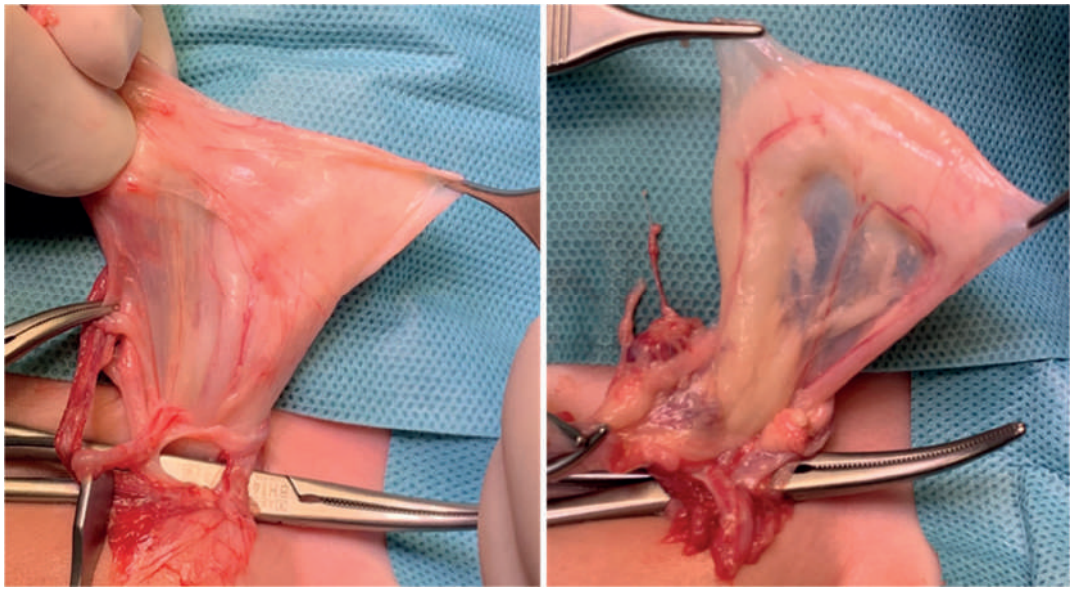
Carlos Delgado-Miguel[1,2], Antonio Muñoz-Serrano[1], Pablo Aguado[1], Ennio Fuentes[1], Ricardo Díez[1]
[1]Fundación Jiménez Díaz University Hospital, Madrid, Spain. [2]Institute for Health Research IdiPAZ, La Paz University Hospital, Madrid, Spain

Abstract

Aim of the Study: Inguinal herniation of ureter is an uncommon finding amongst children, with only eight reported cases in the literature, that can potentially lead to obstructive uropathy. We report a case ureteroinguinal herniation discovered during an inguinal hernia repair in a patient with antenatally hydronephrosis ultrasound finding.

Case description: A 2-months-boy with antenatally diagnosed left hydronephosis presented with leftt inguinal mass. Pre-operative ultrasound showed an anechoic tubular image producing a mass effect on the left testicle, with suspected bladder herniation and/or dilated ureter towards the inguinal canal. Surgical inguinal exploration was performed, where the left inguinal canal revealed a peritoneal sac and sliding of the dilated left ureter behind the sac, with a significant change in diameter, corresponding to the paraperitoneal variant of ureteroinguinal herniation. Ligation of the sac and replacement of the ureter into the retroperitoneum were performed, with improvement of the hydronephrosis observed on the ultrasound one month after the intervention. However, 6 months later, hydronephrosis worsening as well as the obstructive pattern observed in the diuretic renogram required removal of the stenotic ureteral segment and reimplant the healthy proximal segment in the bladder (Cohen´s reimplantation). Follow-up ultrasound of the renal tract showed no dilatation of the upper renal tract and the renal function tests were normal. Currently, the patient is 2 years old and he remains asymptomatic.

Conclusion: Signs of ureteral obstruction such as hydronephrosis in patients with inguinal herniation, may suggest the possibility of an ureteroinguinal hernia. Preoperative diagnostic suspicion is essential in these cases.



CR10_SO / 15:15 – 15:20

SKIP SEGMENT HIRSCHSPRUNG'S DISEASE: A CASE REPORT AND SYSTEMATIC REVIEW

Krittayanee Itthidecharon[1], Jiraporn Khorana[1,2]
[1]department Of Surgery, Faculty of Medicine, Chiang Mai University, Chiang Mai, Thailand. [2]center Of Clinical Epidemiology and Clinical Statistics, Faculty Of Medicine, Chiang Mai University, Chiang Mai, Thailand

Abstract

Aim of the study: We aim to report a case of skip-segment Hirschsprung's disease (SSHD) and conduct a systematic review of previous literatures to describe the characteristics and outcomes of SSHD.

Case description: A term boy presented with neonatal low gut obstruction. A contrast study of lower intestine demonstrated a transitional zone involving splenic flexure. Left transverse colostomy was performed and ganglion cells were presented. After colonic diversion, he revisited due to persistent small intestinal obstruction. Laparotomy was performed for adhesiolysis, but obstruction was persisted postoperatively. He later underwent re-laparotomy and serial biopsy which confirmed the diagnosis of SSHD. Ileostomy was done and obstruction was resolved. Finally, abdominal-assisted Soave ileal pull through was done. To date, there were 34 English publications with total 50 cases of SSHD reported. The characteristics of SSHD were described in the attached table.

Conclusions: SSHD is a rare but real phenomenon, causing more complexity in diagnosis and management since most clinical presentations cannot be differentiated from those of traditional Hirschsprung's disease. Initial serial biopsy of colon may aid the diagnosis, but its possible complications and cost-effectiveness should be weighed. Nevertheless, as this study is based on a collection of case reports, there are several limitations regarding lack of detailed clinical information in many reports and unrevealed true incidence of the condition.

CR11_SO / 15:20 – 15:25

MESO-REX BYPASS FOLLOWED BY PARTIAL SPLENIC EMBOLIZATION: DEFINITIVE MANAGEMENT OF PORTAL CAVERNOMA CHOLANGIOPATHY?

Masato Shinkai[1], Kyoko Mochizuki[1], Norihiko Kitagawa[1], Hidehito Usui[1], Akio Kawami[1], Yuma Yagi[1], Kazuyoshi Okumura[1], Ayano Inui[2], Tomoo Fujisawa[2]
[1]Kanagawa Children's Medica Center, Yokohama, Japan. [2]Saiseikai Yokohama City Tobu Hospital, Yokohama, Japan

Abstract

Aim of the study: Portal cavernoma cholangiopathy (PCC) is a rare cholestatic disease associated with portal hypertension due to extrahepatic portal vein obstruction (EHPVO). Hypertensive hepatopetal collaterals (cavernoma) can harm intra- and extrahepatic bile ducts and cause cholestasis. How to deal with PCC has been controversial.

Case description: An 11-year-old boy had several episodes of esophageal variceal ruptures, thrombocytopenia and hypersplenism. Following several sessions of endoscopic variceal ligation, he developed remittent episodes of cholestatic liver dysfunction. Imaging studies revealed EHPVO, splenomegaly with multiple large hepatopetal and hepatofugal collaterals, and irregularly dilated intrahepatic bile ducts compatible with PCC. To restore physiological intrahepatic portal flow, he underwent meso-Rex bypass surgery successfully. However, liver function was deteriorated by increased intrahepatic portal flow through the bypass and the remaining hepatopetal collateral (cavernoma) flow, and it was scarcely alleviated after balloon dilatation of the bypass and partial embolization of the cavernoma. Finally, partial splenic embolization (PSE) performed about 1 year after the bypass surgery effectively improved liver function without any episode of cholestasis or any compromise of the bypass flow thereafter.

Conclusion: Our experience may suggest that meso-Rex bypass followed by PSE is one of the definitive managements of PCC resolving both defective intrahepatic portal flow due to EHPVO and cavernoma hypertension with hepatopetal collateral flow overload due to hypersplenism.

CR_SO12 / 15:25 – 15:30

A RARE TUMOR FOR THE PRESCHOOL AGE GROUP: SECRETORY BREAST CARCINOMA, MODIFIED MASTECTOMY WITH SENTINEL LYMPH NODE DISSECTION

Abdurrahman Karaman[1], Veli Vural[2], Ebru Donk[1], Javid Abdullayev[1], Elif Güler[3], Emel Durmaz[4], Hatice Elif Peşterelli[5]
[1]Akdeniz University School of Medicine, Department of Pediatric Surgery, Antalya, Turkey. [2]Akdeniz University School of Medicine, Department of General Surgery, Antalya, Turkey. [3]Akdeniz University School of Medicine, Department of Pediatrics (Pediatric Oncology), Antalya, Turkey. [4]Akdeniz University School of Medicine, Department of Radiology, Antalya, Turkey. [5]Akdeniz University School of Medicine, Department of Pathology, Antalya, Turkey

Abstract

Aim of the Study: Breast cancers are very rare among childhood cancers. Juvenile secretory carcinoma constitutes most of these cancers and is very rare in the preschool age group. In this study, secretory breast carcinoma in a 4-year-old girl is presented.

Case Description: A 4-year-old female patient presented with swelling and stiffness in the right breast that was noticed 2 years ago. It was learned that she did not have any complaints of discharge from the nipple, there was bruising on the breast, and she had a family history of breast cancer. On physical examination, a 3x3 cm, irregularly circumscribed, firm mass was palpated in the retroareolar region of the right breast. Retraction and discoloration of the areola were observed. After ultrasonography, biopsy was performed. The pathological diagnosis resulted as secretory carcinoma and modified radical mastectomy with sentinel lymph node excision was performed. To detect sentinel lymph node, Tc-Nanocolloid injection was performed 1 hour before the operation. Intraoperatively, isosulfan blue injection was applied. While the pathological diagnosis of the mass was determined as secretory carcinoma, pathological examination of the sentinel lymph node resulted as a reactive lymph node. The clinical follow-up of the patient continues.

Conclusion: Secretory breast cancers are rare breast tumors seen in pediatric age groups. However, it should also be kept in mind in preschool and younger age groups who present with a breast mass. Its treatment should be planned on a patient basis by a multidisciplinary team.

CR13_SO / 15:30 – 15:35

MULTICYSTIC BILIARY HAMARTORMA IN CHILDHOOD: REPORT OF A CASE TREATED BY LAPAROSCOPIC RESECTION GUIDED BY FLUORESCENCE WITH INDOCYANINE GREEN

Karla Estefania-Fernandez, María Velayos, Carla Ramirez-Amoros, Lucas Moratilla, Mirian Maestre, Carlos Delgado-Miguel, Javier Serradilla, Ane Andres, Franciso Hernandez
Hospital Universitario La Paz, Madrid, Spain

Abstract

Aim of study: Multicystic biliary hamartoma (MCBH) is a benign liver lesion of very low incidence in adulthood, as well as totally exceptional in pediatric age. We present a case of CBMH successfully treated by laparoscopic resection guided by fluorescence with indocyanine green.

Case description: We present a 5-year-old female patient with a history of recurrent abdominal pain in whose study the existence of a hepatic mass of uncertain origin is discovered. A extension study showed the hepatic mass as a multicystic structure (43 x 55 x 37 mm) depending on segment 8, being in contact with the origin of the right suprahepatic vein and the path of the middle suprahepatic vein. Given the diagnostic suspicion of mesenchymal hamartoma, the patient was prepared for surgical treatment, administering indocyanine green intravenously 6 hours before surgery (0.5 mg/kg). Resection of the lesion was performed laparoscopically guided by ICG administered intravenously 7h before surgery (0.5 mg/kg). Fluorescence allowed identification and complete resection of the lesion, without postoperative complications. Histopathological and immunohistochemical study confirming the diagnosis of MCBH.

Conclusions: Although exceptional, MCBH can occur during pediatric age and requires a high index of suspicion for its correct diagnosis and treatment. Its removal can be carried out by a minimally invasive approach that, supported by the use of fluorescence with indocyanine green, allows a complete excision of the mass as well as a limited and safe one.

CR14_SO / 15:35 – 15:40

PREPARE FOR THE WORST-CASE SCENARIO: CRITICAL VASCULAR INJURIES IN PAEDIATRIC SURGERY

Lucas Moratilla-Lapeña, María Sarmiento, María San Basilio, Ricardo Mejía, Javier Serradilla, Alba Sánchez-Galán, Carlos De la Torre, Satur Barrena, Jose Luis Encinas, Rocio Gonzalez, Ane Andres, Leopoldo Martinez, Francisco Hernández
Hospital La Paz, Madrid, Spain

Abstract

Aim of the study: Complex surgery requires planning and a multidisciplinary team to deal with possible complications inherent to the difficulty of the procedure, being up to the surgeon to assemble a team with the technical capacity and the professionals to face these challenges. We aimed to review our cases with vascular injury and results.

Methods: Retrospective review from 2007-2022 of patients with critical abdominal vascular injury. We collected demographic variables, underlying pathology, vascular injury, repair and the need for multivisceral transplantation (MT) or not.

Main results: 8 patients were included (6 female, 2 male) with median age 3.66 (1.58-15.54) years. The underlying pathology in all of the cases was oncologic, with giant retroperitoneal teratoma being the most frequent (37.5%). Among the vascular lesions observed 2 were on the celiac trunk (CT), 2 on the superior mesenteric artery (SMA) and 2 on CT and SMA in the same patient. Two patients had an inoperable tumour which surrounded completely large abdominal vessels, being placed directly on the waiting list for MT. The isolated CT lesion in two patients was successfully repaired. In the remaining 4 patients with residual short bowel syndrome because of the vascular injury, no attempt at repair was made, so they underwent MT.

Conclusions: Complex surgery carries a risk of surgical complications, requiring surgical planning and an infrastructure capable of dealing with them. It is important to have the necessary team and equipment available to face the vascular injuries in pathology with risk of large vessels rupture.

CR15_SO / 15:40 – 15:45

TRAUMATIC TOTAL RIGHT BRONCHIAL RUPTURE WITH NORMAL CLINICAL APPEARANCE

Sibel Eryilmaz, Alparslan Kapisiz, Cem Kaya, Kaan Sonmez
Gazi University, Ankara, Turkey

Abstract

Aim of the study: Traumatic bronchial rupture is a rare but serious injury in children following blunt chest trauma. It occurs when the airways (bronchi) are torn or damaged, leading to air leaking into the thoracic cavity and causing collapse of the lung and tension pneumothorax. In this case report, we aimed to share our surgical experience with a patient who had a total right bronchial rupture but almost normal clinical appearance.

Case description: A previously healthy 4-year-old girl presented to the emergency department after falling from a small tractor without loss of consciousness. Physical examination showed no significant findings such as decreased saturation, tachypnea, or tachycardia, but computerized tomography scan revealed bilateral pneumothorax, with the right side being more prominent. Total rupture and mediastinal shift were identified in the right main bronchus (Figure 1). The patient underwent semi-emergency surgery the next day. Under general anesthesia, successful thoracotomy was performed to repair the total rupture in the right main bronchus at the level of tracheal bifurcation and a chest tube was placed in the right hemithorax. The patient was discharged on the 24th postoperative day after six days of observation in the intensive care unit.

Conclusions: This case highlights the importance of early diagnosis and proper treatment to prevent morbidity and mortality. Most cases of total bronchial rupture require prompt surgical intervention, but as in this case, good general condition of the patient can save time for the surgeon to form a surgical team and provide appropriate conditions.

CR16_SO / 15:45 – 15:50

EARLY ONSET INFLAMMATORY BOWEL DISEASES AND COMPLEX ANORECTAL MALFORMATIONS: JUST A COINCIDENCE?

Martina Baldassa[1,2], Benedetta Marino[1], Cinzia Zanatta[1], Paolo Maria Pavanello[3], Stefano Martelossi[3], Paola Midrio[1,2]
[1]Pediatric Surgery Unit, Cà Foncello Hospital, Treviso, Italy, Treviso, Italy. [2]Pedaitric Surgey Unit, Azienda Ospedaliera, University of Padua, Italy, Padova, Italy. [3]Pediatric Gastroenterology Unit, Cà Foncello Hospital, Treviso, Italy, Treviso, Italy

Abstract

Aim of the study: The aim is to report the co-occurrence of two rare diseases in two patients: anorectal malformation (ARM) and inflammatory bowel disease (IBD).

Case description: Two females, affected by cloaca and cloacal exstrophy, developed IBD at 1 and 3 years after ano-urogenital reconstruction, respectively. In the first patient, who had a colonic neovagina and family history of IBD, the disease onset occurred with vaginal bleeding. The second, who had a permanent colostomy over a pouch-colon and colonic neovagina, presented with abdominal pain, diarrhea, and elevated calprotectin. Both patients underwent endoscopy and biopsies that showed a pattern of ulcerative colitis in colon (2) and neovagina (1). The first patient was treated with oral steroids and mesalazine and topic mesalazine in neovagina with excellent response. The second patient required oral steroids, decontamination with oral gentamicin and metronidazole, low FODMAPs diet, and oral azathioprine.

Conclusions: The co-occurrence of IBD and complex ARM may not be coincidental. A persistent status of inflammation after reconstructing surgery may trigger the onset of IBD-like symptoms, therefore an endoscopy of the gastroenteric and genital tract should promptly be performed to properly diagnose and start the appropriate treatments. Colectomy and removal of colonic neo-vagina may be required in the future of these patients, therefore seriously affecting their quality of life.

CR17_SO / 15:50 – 15:55

HEPATOPULMONARY FUSION: A RARE VARIANT OF CONGENITAL DIAPHRAGMATIC HERNIA

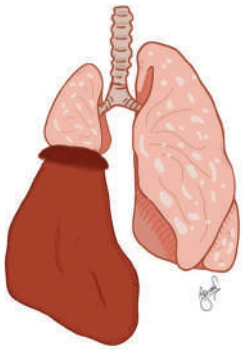
Ozgun Erincin[1], Bade Toker Kurtmen[1], Gokhan Koyluoglu[2]
[1]Department of Pediatric Surgery, University of Health Sciences, Tepecik Education and Research Hospital, Izmir, Turkey. [2]Department of Pediatric Surgery, Faculty of Medicine, Izmir Katip Celebi University, Izmir, Turkey

Abstract

Aim of the study: Congenital hepatopulmonary fusion (HPF) is an extremely rare anomaly characterized by a fusion of liver and lung parenchyma. Management and outcomes of hepatopulmonary fusion are poorly understood. In this report, a case of congenital diaphragmatic hernia (CDH) with HPF is presented.

Case description: We hereby report a case of a neonate without an antenatal diagnosis. The patient was hospitalized in the pediatric neonatal intensive care unit due to respiratory distress. In the examination, no breath sounds were heard on the right side of the chest. The right diaphragmatic hernia was detected in the direct X-ray, and it was reported that the right lobe of the liver herniated into the right hemithorax in the ultrasonography. Sildenafil treatment was started in the patient due to pulmonary hypertension. After initial stabilization, the patient underwent laparotomy. During surgical repair, a fusion of the lung and liver was noted, consistent with a diagnosis of hepatopulmonary fusion. The two tissues could not be separated from each other. By surrounding the liver, the diaphragmatic rim on the posterior wall and the pleural structures on the anterior wall were sutured. The infant was discharged alive, without any respiratory support. She is two years old now.

Conclusions: HPF is a rare variant of CDH. Surgical treatment varies according to the degree of fusion and vascular anomalies. Partial closure of the defect around the fused liver and lung is an option that must be considered in some cases.



CR18_SO / 15:55 – 16:00

ETAGE VAGINAL ATRESIA IN PREPUBERTAL GIRL TREATED IN ONE STAGE WITH DOUBLE ANASTOMOSIS

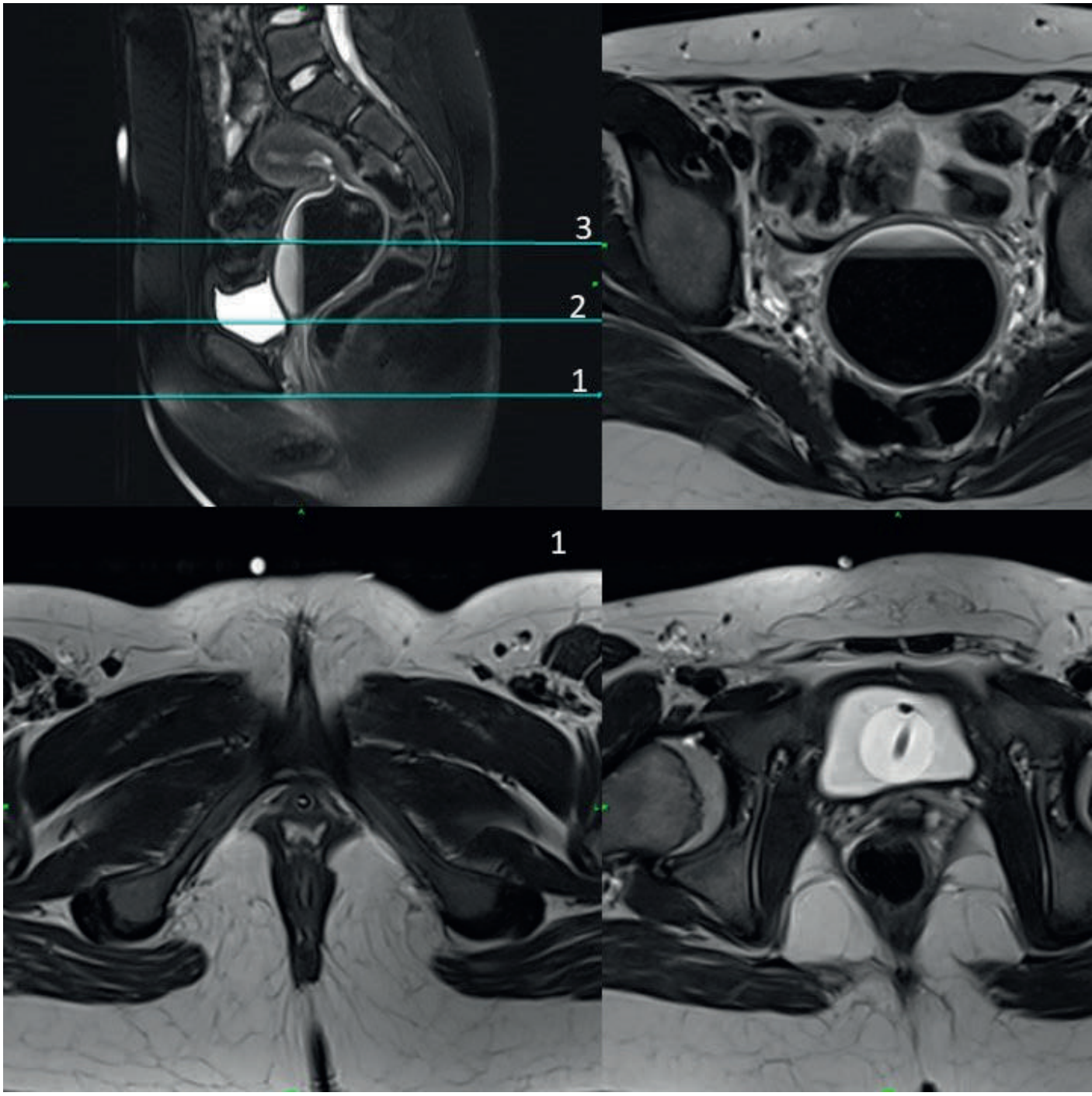
Ede Biro[1], Zsuzsanna Herbert[2], Sandor Davidovics[1], Peter Vajda[1], Zsolt Oberritter[1]
[1]Department of Paediatrics, Division of Paediatric Surgery, University of Pécs, Medical School, Pécs, Hungary, Pécs, Hungary. [2]Department of Radiology, Clinical Centre, University of Pécs, Medical School, Pécs, Hungary, Pécs, Hungary

Abstract

Aim of the Study: An extremely rare genitourinary malformation, double vaginal atresia was observed, causing diagnostic and therapeutic challenges. Our aim is to present the applied one-stage repair of this delicate condition.

Case description: A ten-year-old girl was referred with lower abdominal pain, fever, diarrhea, and elevated inflammatory markers. Abdominal US confirmed a non-inflamed appendix, however, a 6x8cm cystic lesion was found, connected to the uterus, positioned behind the urinary bladder, under the womb. Hematocolpos was suspected. Under general anesthesia, the external genitalia were evaluated, and a thick, solid, un-bulging proximal atresia was seen above the hymen. MRI showed distal vaginal atresia (4.5cm from the perineum). The existence and the structure of the in-between vaginal segment were debated in terms of possible treatment modalities. During the surgery lower atresia was corrected by forming 2x4 flaps for anastomosis. Above, a normal lumen vagina was found. The higher atresia was treated similarly to the first one. Normal cervix was seen above. A 15mm Hegar dilator was feasible for both anastomoses. The postoperative course was uneventful. Daily dilatation by caregivers is ongoing.

Conclusions: Vagina atresia is a rare congenital anomaly in which the vagina is abnormally closed (atretic) or absent. The malformation is usually associated with Mayer-Rokitansky-Küster-Hauser syndrome. The obstruction is classified as proximal (≤3cm from the vaginal introitus) and distal (≥3cm), which classification has a great impact on surgical strategies, postop complications, and outcomes. Our delicate case has both proximal and distal atresia, and otherwise normally developed genitalia. Nevertheless, the outcome is favorable so far.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CR19_SO / 16:00 – 16:05

ISOLATED ROUND LIGAMENT GANGRENE: A CASE REPORT AND REVIEW OF THE LITERATURE.

Diego Muñoz Hernández, Paloma Ramos Rodriguez, Santiago De la Puente Pérez, Beatriz Zamora Vidal, Eva Martínez Juanes, Henar Souto Romero, Ana L. Luis Huertas, Daniel Azorín Cuadrillero, Jose L. Alonso Calderón, Isabel Carrillo Arroyo
HUNJ, Madrid, Spain

Abstract

Aim of the Study: Hepatic round ligament pathology may be of inflammatory, infectious or tumor origin. Spontaneous necrosis or isolated gangrene of the round ligament is an extremely rare cause of acute abdomen. To report a rare pathology of acute abdomen in order to increase its level of suspicion and improve its management. Literature review.

Case description: We present a 12-year-old girl who presented abdominal pain in the RIF and epigastrium associated with vomiting and fever up to 38.5°C during the last 48 hours. An abdominal CT scan without pathological findings was performed at other hospital. Laboratory tests showed leukocytosis and neutrophilia, and subsequent ultrasound was compatible with complicated appendicitis. Laparoscopic surgery was performed, and an inflammatory plastron was observed including the round ligament fixed to the gastric wall, without appendicitis. We proceed to blunt dissection of the plastrón, a total gangrenous of round ligament with purulent material was found. The round ligament was completed removed. The patient complies with a course of antibiotherapy with good evolution. Histology confirms inflammation of the round ligament without neoplastic infiltration.

Conclusions: Necrosis of the round ligament is a very infrequent entity, even more in the pediatric population, which requires knowledge of it in order to suspect it and perform focused imaging tests. The differential diagnosis includes gallbladder pathology, pancreatitis, peritonitis due to duodenal ulcer, acute appendicitis or tumor involvement. Its treatment will be surgical combined with antibiotherapy.

CR20_SO / 16:05 – 16:10

CEPHALIC DUODENOPANCREATECTOMY IN THE NEONATAL PERIOD: A CASE REPORT AND REVIEW OF THE LITERATURE

Isabel Bada-Bosch, Julio Cerdá, Manuel De La Torre, César Sánchez Sánchez, Mar Tolín Hernani, Carmen Miranda Cid, Agustín Del Cañizo, Esther Molina
Hospital General Universitario Gregorio Marañón, Madrid, Spain

Abstract

Aim of the Study: Pancreatic masses in the neonatal period are a rare pathology. Resection of the head of the pancreas is an exceptional surgical challenge due to the need to perform millimetric anastomosis, therefore, subsequent complications are frequent. Case report and review of published articles on cephalic duodenopancreatectomies (CDP) in patients less than 28 days old.

Case description: An 11-days-old female newborn, 3030g, consulted for apnea and cyanosis. Magnetic resonance imaging showed a cystic mass in the right hypochondrium measuring 6.2x5.9x6.4mm with suspicion of malignancy. At 22 days of life a laparotomy was performed finding a mass in the head of the pancreas firmly adhered to the extrahepatic biliary tract and duodenum. A CDP and reconstruction by gastroduodenostomy, hepatico-duodenostomy (Kasai-like) and dunking pancreato-gastrostomy were performed. The pathological anatomy described a serous cystadenoma. With 6 years of follow-up, she has presented a single episode of cholangitis, with no signs of endocrine or exocrine insufficiency. 6 patients with CDP less than 28 days have been described. The surgical technique presented many variations. Five patients presented complications, the most frequent being exocrine insufficiency.

Conclusions: CDP in the neonatal period is an exceptional procedure, with only 5 other cases described in the literature. We present CDP on the largest mass described so far, with no signs of pancreatic insufficiency in a long-term follow-up.

24th EUPSA CONGRESS
June 7 - 10, 2023
Hyatt Regency Hotel IZMIR / TURKIYE
European Paediatric Surgeons' Association

CR21_SO / 16:10 – 16:15

MEGACYSTIS-MICROCOLON-INTESTINAL HYPOPERISTALSIS SYNDROME: REPORT OF TWO CASES

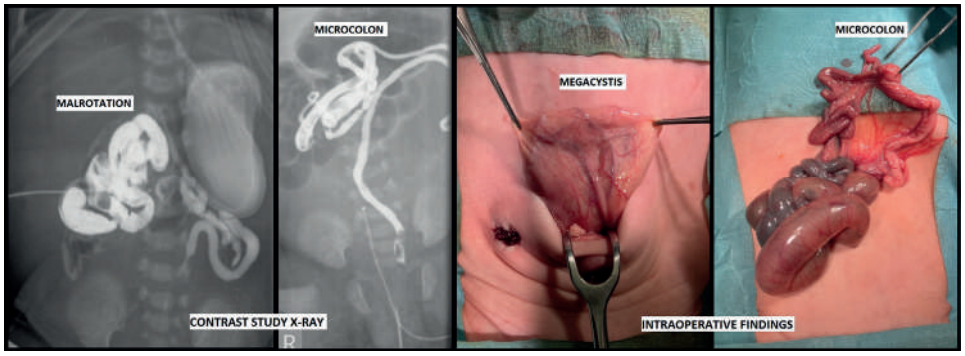
Kata Dávidovics[1], Zsolt Oberritter[1], Ede Biró[1], Gergő Józsa[1], Mária Szász[2], Gabriella Mohay[3], Tamás Tornóczki[4], Péter Vajda[1]
[1]Division of Pediatric Surgery, Department of Pediatrics, Clinical Centre, University of Pécs, Pécs, Hungary. [2]Perinatal Intensive Centre and Intensive Care Unit, Department of Pediatrics, Clinical Centre, University of Pécs, Pécs, Hungary. [3]Unit of Pediatric Radiology, Department of Medical Imaging, Clinical Centre, University of Pécs, Pécs, Hungary. [4]Department of Pathology, Clinical Centre, University of Pécs, Pécs, Hungary

Abstract

Aim of the Study: Megacystis-microcolon-intestinal hypoperistalsis syndrome (MMIHS) is a rare genetic disorder with severe urinary and gastrointestinal comorbidities. The authors would like to present the clinical manifestation and complex management of MMIHS through two cases presented at the authors' institute in last three years.

Case description: Case 1: In 2020, a female was born with prenatally detected megacystis. After initial adaptation, US, irrigoscopy and cystography were performed. Megacystis with severe bilateral upper urinary tract dilation and microcolon was detected. Vesicostomy and ileostomy were performed. Besides the total parenteral nutrition (TPN) and antibiotics, recurrent urinary tract infections, impaired renal function and severe malnutrition were noticed. The infant died in her third month of life by multiple organ failure. Case 2: In 2022, a female infant was also born with prenatally detected megacystis. Abdominal distension, severe bilateral hydronephrosis and impaired kidney functions were observed at birth. Vesicostomy and jejunostomy were performed. One month later, reoperation was needed due to bowel obstruction, ileostomy was created. Routine histology suspected MMIHS, genetic testing is in progress. Now, besides TPN, vesicostomy and ileostomy, the infant's condition is stable, but oral nutrition is still not possible.

Conclusions: MMIHS is a fatal condition in most cases, therefore prenatal screening should be essential. After birth, vesicostomy, enterostomy and partial or total parenteral nutrition might be the options for palliative care. Bowel transplantation could be an alternative therapy in some cases. Psychological support for the family and multidisciplinary counselling with the parents are also mandatory.



CR22_SO / 16:15 – 16:20

SYMPTOMATIC ACCESORY SPLEEN SIMULATING A GASTRIC DUPLICATION CYST: THE IMPORTANCE OF DIFFERENTIAL DIAGNOSIS

Beatriz Zamora Vidal, Diego Muñoz Hernández, Paloma Ramos Rodríguez, Santiago de la Puente Pérez, Eva Rocío Martínez Juanes, Pablo Morató Robert, Jose Lorenzo Alonso Calderón, Ana Lourdes Luis Huertas
Hospital Infantil Universitario Niño Jesús, Madrid, Spain

Abstract

Aim of the Study: The estimated incidence of accessory spleen in children is reported between 15% and 30%. It originates from mesenchymal remnants not fusioned with the main splenic mass. Its most common clinical presentation is the asymptomatic form, but it can also manifest with abdominal or hematological symptoms in large or complicated cases.

Case description: A 15-year-old male with severe left thoraco-abdominal pain, bilious vomiting, and abdominal palpable mass in left hypochondrium is presented. Ultrasound and abdominal CT revealed a cystic tumor (16 x 9 x 8 cm, CC, PA, T), attached to the greater gastric curvature, compatible with gastric duplication cyst. Surgical treatment by laparoscopic approach was indicated. Complete resection and extraction of the surgical specimen through enlargement of the surgical incision of one of the laparoscopic ports has been achieved. Postoperative evolution resulted favorable. Pathological diagnosis confirmed accessory spleen with areas of parenchymal infarction.

Conclusions: We highlight the importance of including accessory spleen in the differential diagnosis within supramesocolic tumors. Its low incidence, location and potential cystic appearance in imaging tests should commonly lead to misdiagnosis. Symptomatic cases of accessory spleen should raise the suspicion of parenchymal infarction as one of the most frequent complications, which a difficult preoperative diagnosis.

CR23_SO / 16:20 – 16:25

PULMONARY HYDATID CYST PRESENT WITH ANAPHYLATIC SHOCK CAN BE MORTAL: A RARE CASE REPORT

Atike Gülşah Kiriş Uzun[1], Abdurrahman Urve Uzun[1], Elif Emel Erten[2], Süleyman Arif Bostanci[2], Can İhsan Öztorun[3], Müjdem Nur Azili[4], Emrah Şenel[4]
[1]university Of Health Sciences Department Of Pediatric Surgery, Ankara, Turkey. [2]ankara Bilkent City Hospital Department Of Pediatric Surgery, Ankara, Turkey. [3]ankara Yildirim Beyazit University School Of Medicinedepartment Of Pediatric Surgery, Ankara, Turkey. [4]ankara Yildirim Beyazit University School Of Medicine Department Of Pediatric Surgery, Ankara, Turkey

Abstract

Aim of the study: Hydatid cyst rupture can cause allergic reactions that can progress to anaphylactic shock or even death. In this case report, we present a rare case of mortal pulmonary hydatid cyst due to anaphylactic shock.

Case description: We present a 14-year-old boy, who had dyspnea after vomiting, itching and rash. He was admitted the emergency services with anaphylactic shock. In the imaging analysis, 15cm diameter of ruptured hydatid cyst in the left lung in the thorax CT was found. The patient had low blood pressure and need of oxygen. He was stabilized with adrenalin infusion and thoracotomy was done. In the operation, cyst fluid discharge was seen inside of intubation tube. After the surgery he followed up as intubated, started two inotrope infusions, IVIG and had cardiac arrest twice in two days. Echocardiography showed his EF was %10 and urgently connected to ECMO with a bedside sternotomy. During his follow up he was given up to five inotropes to keep the blood pressure stable. Sedative infusion was stopped, but he had no sign of awakeness, light reflex and GKS was 3. At the 9th day after the surgery brain death occurred. 3 days after he was lost after cardiac arrest.

Conclusions: Hydatid cysts are rarely mortal, but it should cause anaphylaxis and could be fatal. It can be asymptomatic until it reaches very large dimensions and so diagnose could delayed. It should be kept in mind that despite rapid intervention, it can be fatal.

CR24_SO / 16:25 – 16:30

AN UNUSUAL OVARIAN GERM CELL TUMOR AND ITS HISTOPATHOLOGICAL FINDINGS

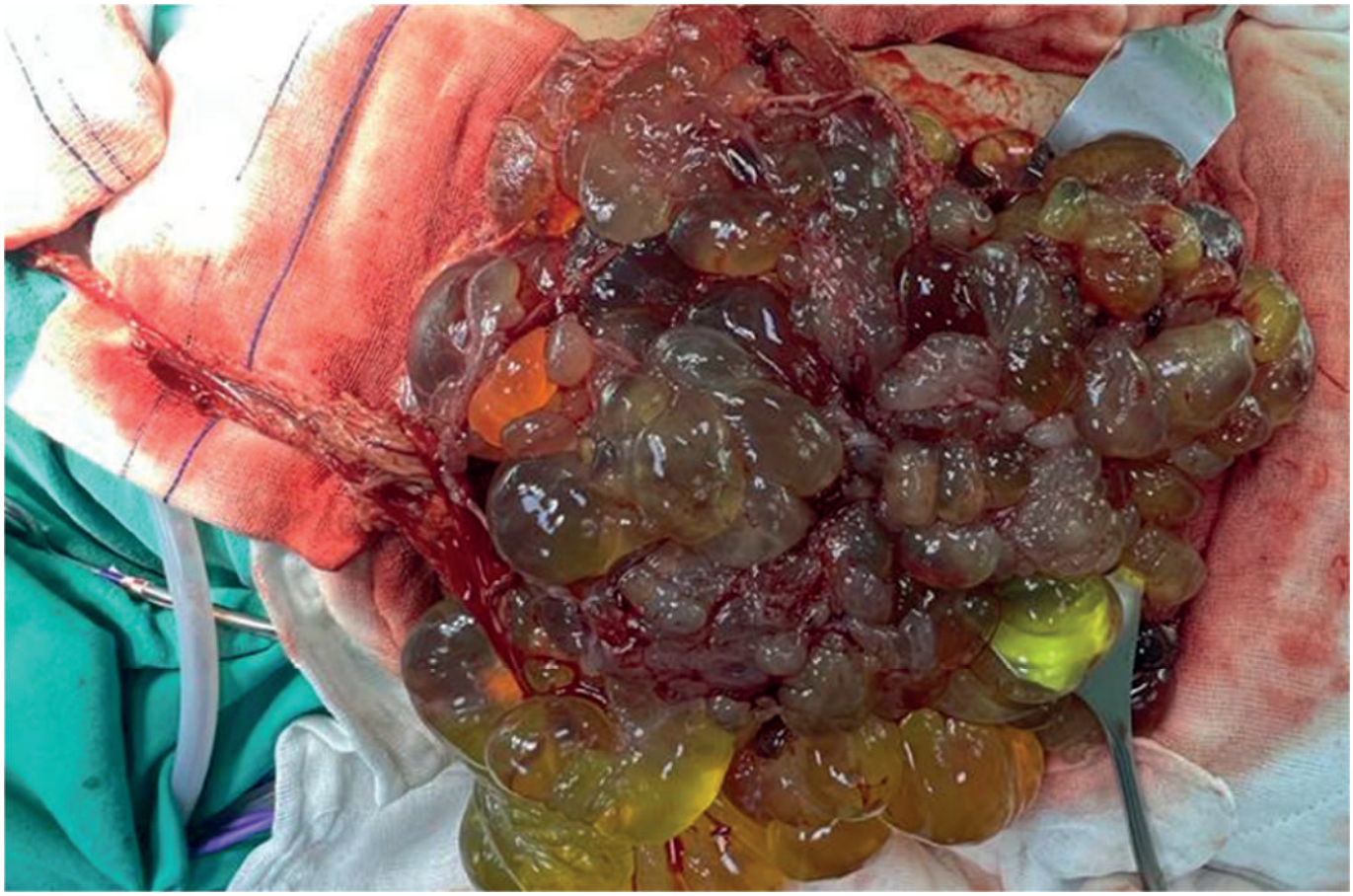
Cansu Kural[1], Oktay Ulusoy[1], Oğuz Ateş[1], Deniz Kızmazoğlu[2], Safiye Aktaş[3], Gülce Hakgüder[1], Mustafa Olguner[1], Feza Miraç Akgür[1]
[1]Dokuz Eylul University, Medicine School, Department of Pediatric Surgery, İzmir, Turkey. [2]Dokuz Eylul University, Medicine School, Department of Pediatrics, Division of Pediatric Oncology, İzmir, Turkey.
[3]Dokuz Eylul University, Oncology Institute, Department of Basic Oncology, İzmir, Turkey

Abstract

Aim of the Study: Mixed germ cell tumors (MGCT) of ovary are rare aggressive cancers affecting young adolescent girls. Most MGCT consist of dysgerminoma accompanied by endodermal sinus tumors, immature teratoma or choriocarcinoma. Besides radiologic imaging, tumor markers such as alpha feto-protein (AFP), lactate dehydrogenate (LDH) and CA-125, contribute to the diagnosis, prognosis, and follow-up of the disease. Modality of treatment is usually fertility sparing surgery followed by chemotherapy. Herein, we report a unique case of giant ovarian MGCT and its pathological findings.

Case description: A 7-year-old girl with no prior history admitted to the emergency room with an abdominal mass. On physical examination abdominal distention without pain was noted. Computed tomography (CT) showed a 23 cm long mass containing heterogeneous cystic lesions, including areas of contrast and thick septations. Additional magnetic resonance imaging could not determine its origin. Only CA-125 was found to be high (170 U/mL), AFP, LDH and other tumor markers were negative. An explorative laparotomy was performed. A multicystic, grape-like mass surrounded by omentum covering the entire abdomen was found (Figure 1). Left ovary originated tumor was carefully dissected without any rupture in addition to salphingo-oopherectomy. Pathology was reported as MGCT with yolk sac dominancy. However, both tissue and serum AFP levels were negative. DICER-1 mutation was found. Patient received chemotherapy postoperatively.

Conclusion: Tumor markers can be helpful for diagnosis of MGCT. However, this patient is the first case which shows negative AFP on tissue while being yolk sac dominancy with an unusual appearance.



14:30 - 16:30

Scientific Session X

General (Parallel Session)

(M1) Regency 1

Chair: Kokila Lakhoo (UK)

Zenon Pogorelic (CRO)

Julio Moreno (ESP)-TEPS

GE01_LO / 14:30 – 14:40

Survey on Use of Point of Care Ultrasound in the European region

Judith Lindert[1], Udo Rolle[2], Ludger Tüshaus[3], Gerlin Naidoo[4]
[1]Department of Paediatric Surgery, University Rostock, Rostock, Germany. [2]Department of Paediatric Surgery, University Frankfurt, Frankfurt, Germany. [3]Department of Paediatric Surgery, University Lübeck, Lübeck, Germany. [4]Department of Paediatric Surgery, University Oxford, Oxford, United Kingdom

Abstract

Aim of the Study: To assess the state of training, clinical use, and barriers to Point-of-Care Ultrasound (POCUS) in paediatric surgery in Europe.

Methods: An electronic survey was disseminated via EUPSA and other existing paediatric surgery networks.

Main results: There were 117 respondents from 49 European countries. In most countries (85.7%) ultrasound is performed by a radiologist, with 1-6h turnover in 55.4% of urgent cases. POCUS is performed by 52.7% of paediatric surgeons, with 31.8% using it at least once per week. Perceived barriers to POCUS use include a lack of training opportunities (34.8%) and paucity of ultrasound machines (17.9%). The most common indications for POCUS currently include abdominal FAST (41.8%), appendicitis (52.0%), intussusception (49.5%). In malrotation-volvulus, 35.9% already use ultrasound for its diagnosis, while 18.0% would elect not to. Training in POCUS occurred informally for 57.3% of participants, while 38.5% attended a formal training course. Almost all respondents would like to attend further POCUS training (82.1%). For 70.1% clinician-led ultrasound is not currently part of paediatric surgery training curriculum in their country.

Conclusions: There is a wide spectrum of use of POCUS in paediatric surgery across Europe. For those surgeons who practice POCUS, it is most used for diagnosis of abdominal conditions. There are differing views amongst clinicians concerning the most useful applications of POCUS. The extent to which ultrasound is taught during Paediatric Surgery training differs substantial across European curricula.

GE02_LO / 14:40 – 14:50

TRAINEES OF EUROPEAN PEDIATRIC SURGERY SURVEY ON POSSIBILITIES, MOTIVATION AND OBSTACLES TO PERFORMING RESEARCH FOR YOUNG PEDIATRIC SURGEONS

Elisa Zambaiti[1], Julio César Moreno-Alfonso[2], Hanna Garnier[3], Jonathan Hencke[4], Ophelia Aubert[5]
[1]Chirurgia Pediatrica, Ospedale Infantile Regina Margherita, Città della Salute e della Scienza, Torino, Italy. [2]Cirugía Pediátrica. Hospital Universitario de Navarra. Servicio Navarro de Salud-Osasunbidea., Pamplona, Spain. [3]Department of Surgery and Urology for Children and Adolescents, Medical University of Gdansk, Gdansk, Poland. [4]Department of Pediatric Surgery, Olgahospital, Klinikum Stuttgart, Stuttgart, Germany. [5]Department of Pediatric Surgery, Univeristy Hospital Leipzig, Leipzig, Germany

Abstract

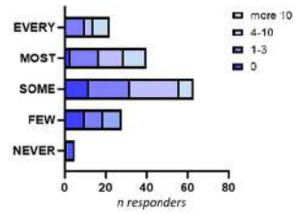
Aim of the Study: To investigate motivation, opportunities, and obstacles for young pediatric surgeons in Europe to clinical and basic science research and to correlate it with scientific output.

Methods: An online survey was distributed in 2022 through the Trainees of European Pediatric Surgery (TEPS), national societies or social media. Questions explored the research experience, motivations and perceived barriers and compared them by appropriate analysis to scientific output.

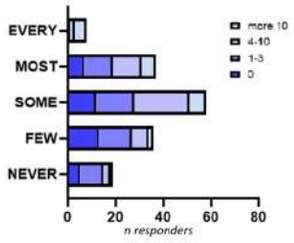
Main results: One-hundred fifty-eight responses were included (15 countries). Mean age was 31±4 years, 114 (72%) were female. While 51% declared to do research to improve clinical practice, 67.7% do so with the aim to publish and/or present at international conferences. The amount of scientific output was significantly associated with performing clinical researchfor all analysed outcomes (p<0,001, Table 1A-B as representative examples), male gender (p=0.03, Table 1C) or having dedicated time within the work schedule (p=0.007, Table 1D). Basic science research was performed by just 20% on a regular basis, only on occasion by 33% and not at all by almost half of the participants (47%). Only 56% of the responders felt motivated to do research. Main perceived hurdles to pursue research were inadequate time (86%) with only 22% having dedicated time either on a regular basis or upon request, being focused on clinical work (69.6%) and not enough support from superiors (36%),

Conclusions: Most residents were motivated to conduct research projects but perceived many obstacles. Dedicated time and support from superiors might ameliorate scientific productivity from young surgeons, especially to women.

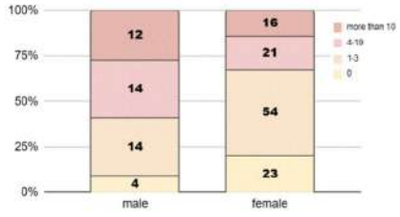
A. Correlation between involvement in Clinical Research paper writing and oral presentations



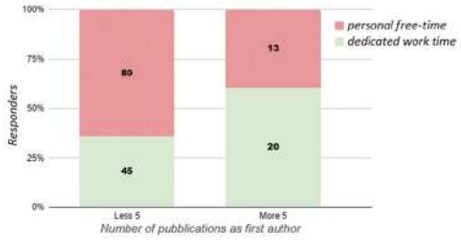
B. Correlation between involvement in Clinical Research projects and poster presentations



C. Correlation between number of overall pubblications and gender



D. Correlation between number of pubblications as first author and time allocated to research



GE03_LO / 14:50 – 15:00

AGE AS AN EXCLUSION CRITERION FOR NON-OPERATIVE MANAGEMENT IN SIMPLE ACUTE APPENDICITIS

Becker Gal[1], Audelia Eshel Fuhrer[1], Keren Kremer[1], Igor Sukhotnik[1,2], Haguy Kammar[1]
[1]Department of Pediatric Surgery, Dana-Dwek Children's hospital, Tel Aviv Sourasky Medical Center, Tel Aviv, Israel. [2]Sackler Faculty of Medicine, Tel Aviv University, Tel Aviv, Israel

Abstract

Aim of the study: Non-operative management (NOM) for simple acute appendicitis (SAA) is an acceptable mode of treatment in healthy children. Previous studies routinely excluded young children (<6y) from NOM, however the effect of age on NOM failure was not directly assessed. Since efficiency of NOM in young adults is questionable, adolescents may also be at greater risk of NOM failure. Our aim was to investigate the effect of age on NOM failure.

Methods: A retrospective analysis of children with SAA who received NOM between 1.1.2019-30.06.2021 at our Institution. NOM failure was defined by subsequent appendectomy. Age was assessed as a continuous variable in association with NOM failure and then different age subgroups were also compared.

Main results: 151 children were included (60% male), mean age 11.2±3.2y (range 5-17). Overall 66 children (44%) failed NOM, 90% of them within the first year (median 7weeks). 5% of the cohort were children <6y, 33% of them failed NOM (p=0.39). For every 1y increase in age, the odds of NOM failure increase by 12% (p=0.027). Children >14y had 2.46 times higher odds to fail NOM (p=0.03). Similar higher odds remained after adjusting for appendiceal diameter and appendicolith. Linear regression showed shorter time to NOM failure with every 1y increase in age (β=-12days, p=0.09).

Conclusions: The risk of NOM failure in children increases with age and should be considered upon SAA treatment decision, especially in adolescents. The effectiveness of NOM in children younger than 6y is not inferior to older children and hence should not be excluded.

GE04_LO / 15:00 – 15:10

STAT TRIAL: STOMA OR INTESTINAL ANASTOMOSIS FOR NECROTIZING ENTEROCOLITIS: MULTICENTRE RANDOMIZED CONTROLLED TRIAL

Simon Eaton[1], Mandela Thyoka[1], Niloofar Ganji[2], Maher Shahroor[2], Augusto Zani[2], Jay Sivaraj[1,3], Stavros Loukogeorgakis[1,3], Paolo De Coppi[1,3], Sandra Montedonico[4], Marija Lukac[5], Jan F Svensson[6], Tomas Wester[6], Agostino Pierro[2], STAT Trial Group[1]
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Abstract

Aim of the Study: The aim of this study was to demonstrate which is the most effective operation for neonates with necrotizing enterocolitis (NEC): intestinal resection with stoma formation or intestinal resection with primary anastomosis.

Methods: A randomized controlled trial was conducted in 10 centres worldwide. Infants having a primary laparotomy for NEC were randomized online intraoperatively, using weighted minimization, to resection and primary anastomosis or resection and stoma if the operating surgeon thought that both were viable treatment options on that patient (no disease distal to stoma or anastomosis). A power calculation suggested that 40 patients in each arm would enable a difference in primary outcome (duration of parenteral nutrition [PN]) to be detected. Data were analysed by Cox regression analysis adjusting for minimization criteria.

Main results: 80 patients were recruited (2010-2019). Infants undergoing anastomosis finished PN significantly earlier than patients undergoing stoma (Figure, p=0.011). There was no difference in mortality between the two groups (anastomosis 4/31 vs. stoma 4/28 p=0.57). There were no significant differences in the rate of complications requiring further surgery (including leak, stricture etc but excluding stoma closure) between the groups (p=n.s.).

Conclusions: NEC patients having resection and primary anastomosis require a shorter duration of PN than those having resection and stoma and do not need a second operation for stoma closure, whilst there is no disadvantage in terms of mortality or unplanned reoperation. Primary anastomosis should be considered at laparotomy for NEC when there is no disease distal to resected intestine.

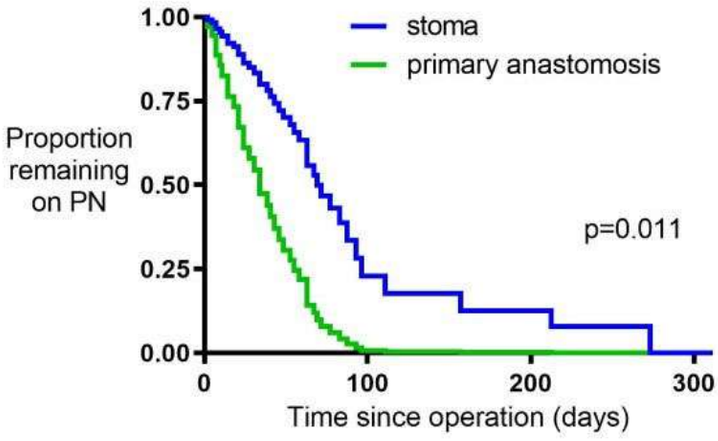

Figure: Cox-regression analysis of time on PN

GE05_SO / 15:00 – 15:15

COMPARATIVE OUTCOME OF PARTIAL SPLENECTOMY VS TOTAL SPLENECTOMY IN SPHEROCYTOSIS

Benoit Tessier[1], Perinne Mahe[2], Géraldine Hery[3], Margot Ollivier[1], Olivier Maillet[1], Dominique Forgues[1], Aurore Haffreingue[4], Alexis Belgacem[5], Guillaume Rossignol[6], Anne Dariel[7], Jean François Lecompte[8], Camille Duchesne[9], François Varlet[10], Ichrak Belbahri[11], Nicolas Molinari[12], Eric Jeziorski[2], Arnaud Bonnard[13], Nicolas Kalfa[1]

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Abstract

Aim of the Study: Splenectomy may be required in spherocytosis. To decrease the infectious risk of total splenectomy, partial splenectomy was proposed. The aim of the study was to compare the efficacy between partial and total splenectomy in spherocytosis.

Methods: This multicentric national retrospective (11 centers, 2005-2017) comparative study included children with spherocytosis with total or partial splenectomy. The minimum follow up was 5 years. We compared the 1- rate of postoperative hemoglobin 2- rate of postoperative complications and the number of infectious events. Last we performed a Kaplan Meier survival curve to evaluate the need of totalisation during follow-up.

Main results: 96 children were included (26 partial) with a mean follow-up of 8 years (5-17). The efficacy was significantly lower for partial splenectomy (11,87g/dl vs 13,8g/dl; p<0,01). Hospital stay was significantly longer for partial splenectomy (5,26 days vs 6,08, p<0,01). There was no difference for infectious and postoperative complications. Totalization after partial splenectomy was necessary in 42% (n=11) with an average delay of 7 years (Figure 1). It improved the basal hemoglobin level to reach a higher rate compared to those not totalized (14,49g/dl vs 11,8g/dl, p<0,01). In case of totalization the risk of postoperative complication was 20%.

Conclusions: The rate of hemoglobin was significantly lower in partial compared to total splenectomy. Our study failed to identify a protective effect of partial surgery on the risk of infection. The need of totalisation is high and exposes to significant risk of postoperative complication.

GE06_SO / 15:15 – 15:20

DEVELOPMENT OF THE CHILDREN'S REGISTRY OF CONGENITAL MALFORMATIONS (KiRaFe)

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Abstract

Aim of the Study: Patient care for congenital malformations is decentralized in Germany, making it difficult to obtain large, structured datasets. Therefore, a nationwide registry for congenital malformations (KiRaFe), was initiated by the German Society of Pediatric Surgery in 2014. With this study we wanted to highlight the obstacles to establishing such a registry.

Methods: KiRaFe is based on the Open-Source Registry System for Rare Diseases (OSSE). Parameters to be included in the registry were defined in expert groups. Legal documents were prepared for data protection, ethics, and contracts. Structures to regulate the registry had to be implemented. Financial support had to be found.

Main results: The development of the registry took seven years until enrolment of the first patient, although parallel processes were implemented. The development of the initial dataset took four years, involving different expert groups and a Delphi process. The resulting modular set of >500 parameters include general and disease-specific contents for eight malformations. Most of the work was related to finances and governance including data protection requirements, legal considerations, organizational structure, and ethic approval. The enrolment of the participating sites was slowed down by local particularities regarding data protection, contracts, and the need for ethics approval for each hospital. The KiRaFe registry went live in November 2021. As of January 2022, there were 20 participating sites; 233 patients have given informed consent for enrolment in the registry.

Conclusions: This study demonstrates the complexity and organizational of setting up a registry on congenital malformations.

GE07_SO / 15:20 – 15:25

ALMOST GROWN UP: PROFESSIONAL RECOGNITION OF PAEDIATRIC SURGERY IN EUROPE - STILL ROOM FOR IMPROVEMENT

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Abstract

Aim of the Study: To describe the state of recognition of the professional title (RPT) of "paediatric surgeon" (PS) & its training in the European Union (EU).

Methods: Review of the EU legislation, scientific literature & interviews with national PS delegates.

Main results: According to Annex V.1 of the updated EU Directive 2005/36/EC, PS is an independent specialty with RPT in all 25 countries listed except Belgium, Denmark & Netherlands. The European Union of Medical Specialists (UEMS) is composed of 41 National Medical Associations (36 member states, 5 observers) representing >1,600,000 specialists in the EU & associated countries. By agreed documents, UEMS sets standards for high quality healthcare practice. The 43 UEMS Specialist Sections represent independent, recognized specialties & define European standards of education & training (ETR). PS is a Specialist Section & independent specialty with RPT in 33 of the 36 UEMS Member States: in Belgium, Denmark & Netherlands, trainees obtain the professional title of (General) Surgeon after the completion of training. Denmark & Netherlands however offer officially recognized training in PS, Belgium does not. Official PS training is organized in 33 of the 36 UEMS Member States. In Belgium, Iceland & Luxemburg, no or only minimal official training in PS is offered. In Iceland & Luxemburg, trainees are sent abroad to train in larger academic training centers & obtain a recognized professional title of PS upon return - in Belgium this is not the case.

Conclusions: Anno 2023, Belgium is the last EU country & only UEMS Member State without a RPT of PS & without official training in PS. Action is needed to remedy this situation.

GE08_SO / 15:25 – 15:30

EVIDENCE BASED PEDIATRIC MINIMAL ACCESS SURGERY

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Abstract

Aim of the Study: To evaluate available literature on evidence based pediatric minimal access surgery (MAS) and its comparison to open surgery.

Methods: Recent literature available on various pediatric MAS procedures along with peri-operative care were searched. The findings were summarized in the levels of evidence as per Centre for Evidence-Based Medicine.

Main results: Studies providing evidence Level 1a were identified for five types of laparoscopic procedures (laparoscopic appendectomy, inguinal hernia repair, orchidopexy, pyloromyotomy, and varicocelectomy). Studies providing evidence Level 1b were identified for two types of laparoscopic procedures (fundoplication and pyeloplasty). Laparoscopy has a better overall complication profile compared to open surgery for complicated appendicitis. Irrigation during laparoscopic appendectomy for complicated appendicitis increases the operative time and reoperation rate: Suction alone is enough. Laparoscopic hernia repair presented lower metachronous contralateral hernia incidence, shorter operation time for bilateral hernia, lower post operative complications, with no increase in hernia recurrence, surgical site infection, or length of hospitalization. Laparoscopy is a screening tool to determine the need for open surgery in intussusception, reducing the incidence of open surgery and its complications. The level of evidence was 3a/3b for congenital diaphragmatic hernia while it was 3b for tracheoesophageal fistula, lung resection, pneumothorax, and thoracic neuroblastoma. Enhancing recovery after minimally invasive surgery in children's protocols in MAS seem safe and effective, by decreasing length of stay and 30-day readmission rate, without increasing post-operative complication rates.

Conclusions: Though MAS is expanding rapidly, further randomized clinical trials are needed to gain higher level evidence for pediatric MAS.

GE09_SO / 15:30 – 15:35

ICG FLUORESCENCE TECHNOLOGY IN PEDIATRIC MIS: WHICH IS THE DIRECTION? RESULTS OF AN INTERNATIONAL MULTICENTRIC STUDY.

Ciro Esposito[1], Kirti Rathod[2], Daniele Alberti[3], Mariapina Cerulo[1], Arvind Sinha[2], Giovanni Boroni[3], Ankur Mandelina[4], Maria Vittoria Stern[3], Vaibhay Pandey[5], Roberto Carulli[1], Vincenzo Coppola[1], Benedetta Lepore[1], Maria Escolino[1], Fulvia Del Conte[1]
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Abstract

Aim of the Study: To report a multicentric experience using ICG fluorescence technology in pediatric MIS.

Methods: Medical charters of patients operated with ICG technologies between January 2018 and June 2022 in three different pediatric surgery units, were retrospectively reviewed.

Main results: 176 surgeries have been performed: 68 left varicocele corrections; 48 cholecystectomies in obese adolescents, 8 biliary atresia corrections, 6 choledochal cyst corrections; 9 tumor excisions (1 Wilms tumor, 8 ovarian masses); 6 nephrectomies; 15 partial nephrectomies; 5 splenectomy, 1 chylous ascites, 4 Hirschsprung disease, 1 intestinal malrotations, 4 bronchopulmonary sequestration, 1 mediastinal lymphoma biopsy. Only in 2 cases conversion to open was necessary: 1 large tumor excision and a cholecystectomy. One patient with a broncopolmonary sequestration presented a prolonged (> 48h) air-leakage who didn't required reintervention (Clavien Dindo 2). In all cases the use of ICG was really useful to clearly view the anatomy and the vascularization. In 5 cases ICG-NIRF allowed to identify biliary/vascular anatomic anomalies, including Moynihan's hump of the right hepatic artery (n = 1), supravescicular bile duct (n = 1), and short cystic duct (n = 3). No adverse reactions were reported.

Conclusions: We can conclude that the ICG fluorescence technology is a safe and effective technology to adopt with a wide use in mis pediatric surgery. It can be helpful in challenging cases to better define the anatomy and planning the better way to approach the anatomic structures.

GE10_SO / 15:35 – 15:40

CHILDHOOD APPENDECTOMY IS ASSOCIATED WITH AN INCREASED RISK OF PSYCHIATRIC ILLNESS

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Abstract

Aim of the Study: The appendix works as a reservoir for the gut microbiota with the ability to restore the microbiota after infections. Removal of the appendix might be negative in terms of restoring the normal gut microbiota during appendicitis. A disruption of the gut microbiome has been observed in individuals with psychiatric disorders. The aims of the study were to explore if there is an association between childhood appendectomy, the risk of psychiatric illness and health seeking behavior.

Methods: Individuals who underwent appendectomy in a Pediatric Surgical Department (2000-2014) were included, individually matched to 5 controls. Data on psychiatric diagnoses, healthcare visits and use of psychiatric drugs were collected from population-based registers.

Main results: Overall, 752 individuals and 3760 controls were included. Median age at appendectomy was 11 (2-16) years and median follow-up time was 15.5 (6-21) years. Individuals in the study population had an increased risk of psychiatric illness in general (HR 1.19; 95%CI 1.04-1.37) and for affective disorders (HR 1.20, 95%CI 1.01-1.42). An increased rate of both outpatient visits IRR 1.20 (95%CI 1.18-1.23) and inpatient visits IRR 1.19 (95%CI 1.10-1.28) were observed.

Conclusions: Childhood appendectomy was associated with an increased risk of psychiatric illness. The appendix seems to play a role in maintaining mental health later in life. Future studies should explore a possible link to the microbiome.

Table: Stratified Cox regression for psychiatric illness after index

Term	HR	95%-CI	P-value
Group: Fall	1.19	(1.04 - 1.37)	0.013

GE11_SO / 15:40 – 15:45

THE 101 MOST MENTIONED ARTICLES IN PEDIATRIC SURGERY FROM AN ALTMETRIC PERSPECTIVE

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Abstract

Aim of the Study**:** Altmetric analyses assessing online media mentions of publications is a new method to evaluate awareness to research output. We aimed to identify and characterize the top 100 articles with the highest Altmetric Attention Score (AAS) in pediatric surgery.

Methods**:** All accessible articles from core pediatric surgery journals (JPS, JPSCR, EJPS, EJPSR, PSI, SPS) were retrieved from www.altmetric.com in January 2023 and ranked by AAS to identify the top 100 articles. For each publication, AAS, number of citations, country, journal, publication year, study design, level of evidence, and online media mentions (Twitter, Facebook, News outlet, Blogs, Wikipedia, Patent, Policy source, Redditor, Video, Research highlight form, and Google Plus) were analyzed.

Main results**:** The top 101 AAS articles were published between 1974 and 2022, preferentially from the United States (64%), and mainly in JPS (73%), followed by JPSCR, PSI, SPS, EJPS (Figure C). Their AAS ranged between 389 and 21 (median 33.00), with Twitter being mostly responsible for online media mentions (n=2,189, 75%). Number of citations ranged between 0 and 358 (median 16.00) and did not correlate to AAS. Retrospective study (33%; Figure A) with low evidence level IV (49%; Figure B) dominated in top 101 AAS articles.

Conclusions**:** The *Journal of Pediatric Surgery* is the main source for high-profile publications in pediatric surgery. The altmetric popularity of papers is predominantly achieved by their propagation via Twitter, irrespective of study quality and recognition in scientific community. Thus, active “twitterism” may play the key role to reach relevant AAS.

GE12_SO / 15:45 – 15:50

PARENTS' PERSPECTIVE ON THE BENEFITS OF INTRA-SALIVARY INJECTION OF BOTULINUM TOXIN IN NEUROLOGICALLY IMPAIRED CHILDREN: A SINGLE CENTER PROSPECTIVE STUDY

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Abstract

Aim of the Study: Excessive drooling is a common problem in children with neurological disorders. The impact of it can be both physical (irritated skin, perioral infections, aspiration, and pneumonia) and psychosocial - it increases the overall burden on the patients and caregivers. The aim of this study was to determine the effect and benefits from parents' perspective of Botulinum toxin (BTX-A) intra-salivary injections in neurologically impaired children with sialorrhea.

Methods: This is a prospective follow-up study. 24 patients received a total of 42 ultrasound-guided bilateral intra-salivary injections of BTX-A. Drooling before and after injections was assessed by parents using the Drooling Severity and Frequency Scale. Visual Analogue Scale was applied to assess parents' perceptions of their and their children's well-being pre- and post-treatment (0 - no satisfaction and 100 - extreme satisfaction). Ethical approval No. BEC-MF-22.

Main results: Improvement in drooling occurred in 20 patients (83.3%). The median drooling score was 8 (range 6-9) before procedure and 4 (range 2-9) after ($p<0.001$). The decrease in drooling was noticed starting day 6 (range 1-21 days) and effect lasted for almost 4 months (range 1.5-9 months). Caregivers noticed a significant reduction in drooling-associated problems such as frequent clothes changing, skin irritation, bad mouth odor, choking, pulmonary infections, and frequent suctioning ($p<0.05$). Psychological well-being increased significantly after the treatment (27 VAS pre-treatment compared to 88 VAS post-treatment, $p<0.001$).

Conclusions: BTX-A intra-salivary injections are efficacious in the management of sialorrhea in neurologically impaired children and result in positive changes in patients' and caregivers' well-being.

GE13_SO / 15:50 – 15:55

GENETIC SPECTRUM OF ARTERIOVENOUS MALFORMATIONS OF THE EXTREMITIES AND THEIR RELATIONSHIP TO THE CLINICAL COURSE.

Lucas Moratilla-Lapeña[1], María Sarmiento[1], Carla Ramírez-Amorós[1], María San Basilio[1], Arturo Almeyda[1], Ricardo Mejía[1], Paloma Triana Junco[1], Lara Rodríguez-Laguna[2], Victor Martínez-González[3], Juan Carlos López-Gutiérrez[1]
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Abstract

Aim of the study**:** The variability in the course of arteriovenous malformations (AVM) has been poorly investigated and less well understood. With the discovery of mutations at the origin of AVM, the relationship between the mutation and its clinical progression has begun to be clarified.

Methods**:** retrospective study of paediatric and adult patients with anatomopathological and genetic diagnosis of AVM located in the extremities. Demographic variables (age and sex) were studied, as well as AVM location, mutation, and phenotype. Finally, the type of treatment was recorded.

Main results: 29 patients were studied (12 males and 17 females). The median age was 23.6 (11.5-29.79) years. The most frequent mutations were MAP2K1 (24.1%), KRAS (20.7%) and RASA1 (20.7%). 9 (31%) patients had amputation of fingers (44.4%), feet (33.3%) and legs (22.2%), all having mutations in KRAS or MAP2K1 ($p<0.001$). Of the 20 patients who did not require amputation, six had RASA1 and EPHB4 mutations and did not require invasive treatment. The remaining 14 patients had other genetic mutations than RASA1, requiring a greater number of endovascular and surgical procedures with a torpid clinical course.

Conclusions**:** The clinical manifestations associated with AVMs seem to be linked to their genetic profile. It is essential to apply a mutational diagnosis and consider that those with RASA1 and EPHB4 mutations benefit from long-term conservative treatment, while those associated with MAP2K1 and KRAS, active treatment is indicated when there is evidence of progression.

GE14_SO / 15:55 – 16:00

ERNICA Evidence-based guideline for the management of Gastroschisis

Carmen Mesas Burgos[1], Willemmijn Irvine[2], Alexandre Vivanti[3], Peter Conner[4], Egle Machtejeviene[5], Nina Peters[6], Juan Sabria[7], Ana Sanchez Torres[8], Costanza Tognon[9], Alberto Sgro[10], Antti Koivusalo[11], Hester Langeveld-Benders[12], Rony Sfeir[13], Marc Miserez[14], Niels Qvist[15], Ausra Lukosiute-Urboniene[16], Katrin Zahn[17], Julia Brendel[18], Jordi Prat[19], Simon Eaton[20], Alexandra Benachi[3]
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Abstract

Aim of the Study: The ERNICA guidelines for gastroschisis cover perinatal period to help teams to improve care.

Methods: A systematic literature search including 136 publications was conducted. Research findings were assessed following the GRADE methodology. The evidence to decision framework was used to determine the strength and direction of recommendations.

Main results: The mode or timing of delivery do not impact neonatal mortality, risk of NEC or time on parenteral nutrition (PN). Intra or extra abdominal bowel dilatation predict complex gastroschisis and longer length of hospital stay but not increased perinatal mortality. Outcomes after Bianchi procedure and primary fascia closure under anesthesia are similar. Sutureless closure decreases the rate of surgical site infections and duration of ventilation compared to surgical closure. Silo-staged closure with or without intubation results in similar outcomes. Outcomes of complex gastroschisis (CG) undergoing early or delayed surgical repair are similar. Early enteral feeds starting within 14 days is associated with lower risk of surgical site infection.

Conclusions: The panel suggests vaginal birth between 37- 39 w in cases of uncomplicated gastroschisis. Bianchi's approach is an option in simple gastroschisis. Sutureless closure is suggested when general anesthesia can be avoided, sutured closure. If anesthesia is required. Silo treatment without ventilation and general anesthesia can be considered. In CG with atresia primary intestinal repair can be attempted

if the condition of patient and intestine allows. Enteral feeds for simple gastroschisis should start within 14 days.

GE15_SO / 16:00 – 16:05

PITFALLS ANALYSIS IN TENCKHOFF CATHETER IMPLANTATION: A 20 YEAR SINGLE CENTER EXPERIENCE.

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Abstract

Aim of the Study: This study aims to identify and stratify the possibility of upcoming complications after the implantation of a Tenckhoff Catheter

Methods: Demographic characteristics and patient history of children with Tenckhoff-Implantation in our institution were gathered. Cases of catheter infection or malfunction received particular attention. The prevalence of hernias and additional surgeries were noted. The incidence of complications was further explored with Time to Event analysis to evaluate possible risk predictors.

Main results: 299 Tenckhoff-Implantations among 242 patients with equal gender distribution were performed between 2002 and 2022; 67,4% were younger than five years old, and 87% had primary kidney disease. With 23 days of median catheter usage, 83 catheter replacements and 77 cases of peritonitis were recognized. From 68 implantations with omentectomy, revision followed primarily in patients younger than three years old. Thirty-four inguinal hernias arose, and one-third developed a catheter dysfunction or peritonitis. The right side was the most preferred reinsertion site, but it showed a bigger complication incidence, while 40,9% of patients with laparotomies for other reasons during peritoneal dialysis suffered complications. Multiple complications occurred in approximately 5% of the patients, and boys showed a double incidence of catheter replacement.

Conclusions: Tenckhoff implantation is still a safe procedure in children; however, implantations in boys and patients younger than one year or with previous laparotomies have a higher risk of complications.

GE16_SO / 16:05 – 16:10

COMPARISION OF OUTCOMES WITH AND WITHOUT TRANS-ANASTOMOTIC TUBE INSERTION IN CONGENITAL DUODENAL OBSTRUCTION – A SYSTEMATIC REVIEW AND META ANALYSIS

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Abstract

Aim of study: To determine the impact of trans-anastomotic tube use in congenital duodenal obstruction (CDO).

Methods: Systematic review (PROSPERO CRD42022328381). Search strategy included "CDO and TAT or feeding". Articles comparing insertion of TAT versus no TAT were included. Outcomes of interest were time to full enteral feeds (FEF), use of parenteral nutrition (PN), length of inpatient stay and complications from either treatment method. Meta-analyses were undertaken using random effects models (mean difference and risk ratio) and risk of bias was assessed using the ROBINS-I tool.

Main results: Nine out of 330 articles met the inclusion criteria and were included in this study. Overall, 543 infants were included of which 226 (42%) had a TAT and 317 (58%) didn't. Six studies concluded that TAT placement is beneficial in CDO. Eight studies contained sufficient data to allow meta-analysis however 2 were excluded due to serious or critical risk of bias. TAT placement was associated with reduced time to FEF (−3.34; 95%CI -4.48 to -2.20 days) and reduced duration of parenteral nutrition (PN) (-6.32; 95%CI -7.93 to -4.71 days) (figure). Mortality (0.26; 95%CI 0.03-2.09), time to pre-anastomotic feeds (−3.02; 95%CI -6.35 to 0.31 days), inpatient stay (2.57; 95%CI -5.42 to 10.57 days) and requirement for repeat surgery (1.63; 95%CI 0.36-7.31) were similar in infants with and without a TAT.

Conclusions: TAT placement in CDO appears beneficial, without increased risk of adverse events. Earlier enteral feeding and reduced PN use is known to decrease CVC associated risks whilst significantly reducing cost of care.

GE17_SO / 16:10 – 16:15

DIFFERENTIATING ABDOMINAL PAIN DUE TO COVID- 19 ASSOCIATED MULTISYSTEM INFLAMMATORY SYNDROME FROM CHILDREN WITH ACUTE APPENDICITIS: A SCORE SYSTEM

Bade Toker Kurtmen[1], Yildiz Ekemen Keles[2], Mustafa Agah Tekindal[3], Gokhan Koyluoglu[4], Dilek Yilmaz Ciftdogan[5]
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Abstract

Aim of the Study: Differentiating abdominal pain due to coronavirus disease (COVID-19)-associated multisystem inflammatory syndrome (MIS-C) in children with acute appendicitis (AA) can cause diagnostic dilemmas. This study aimed to evaluate the efficacy of a previously described scoring system and improve its diagnostic ability in differentiating between these diseases.

Methods: Patients who had MIS-C with gastrointestinal system (GIS) involvement and patients who underwent surgery for appendicitis, between March 2020 and January 2022, were included. First, all patients were evaluated using the new scoring system (NSS). The groups were compared by adding new MISC-specific parameters to NSS. The scoring system was evaluated using propensity score matching (PSM).

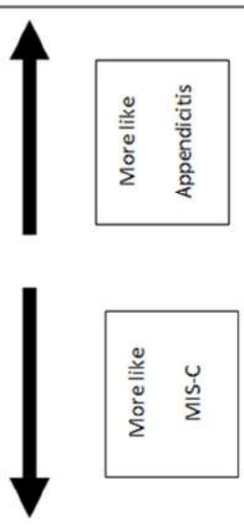
Main results: A total of 35 patients with abdominal pain due to GIS involvement in MIS-C (group A) and 37 patients with AA who had ALT, PRC, and D-dimer results at their first admission (group B) were included in the study. False NSS positivity was found in 45.7% of the patients with MIS-C. Lymphocyte ($p=0.021$) and platelet counts ($p=0.036$) were significantly lower in the blood count and serum D-dimer ($p=0.034$), C-reactive protein (CRP) ($p<0.001$), and procalcitonin ($p<0.001$) were significantly higher in the MIS-C group. We created a scoring system called the appendicitis-MISC score (AMS) using the NSS and new parameters. The sensitivity and specificity of AMS diagnostic scores were 91.9% and 80%, respectively.

Conclusions: MIS-C with GIS involvement may present as acute abdomen. This is difficult to differentiate from acute appendicitis. AMS has been shown to be useful for this differentiation.

Table A Results of logistic regression and determination of scores according to odds ratios (CI: confidence interval, NSS: new scoring system, and CRP: C-reactive protein).

Predictor	Odds ratio	95% CI		Score
		Lower	Upper	
Lymphocyte count≥ 795(cells/µL)	0,500	0,077	3,251	**1**
D-dimer ≤ 905 (µg/L)	2,005	0,226	17,804	**1**
Age ≥ 92.5 (months)	2,311	0,423	12,626	**1**
Platelet count ≥ 216000 (cells/µL)	4,756	0,686	32,966	**2**
Pro-calcitonin ≤ 0.13 (µg/L)	5,675	0,495	65,019	**2**
Absence of Fatigue	7,055	1,000	49,794	**3**
NSS ≥12	16,571	1,464	187,519	**3**
CRP ≤ 42.5 (mg/L)	23,594	0,608	915,828	**3**

Table B Interpretation of diagnostic score

Summed Score	Possibility	
16	100%	
15	100%	
14	100%	
13	100%	
12	100%	
11	100%	
10	97%	
9	89%	
8	80%	
7	77%	
6	66%	
5	54%	
4	40%	
3	29%	
2	17%	
1	14%	
0	3%	

GE18_SO / 16:15 – 16:20

SHORT-TERM PEDIATRIC RECONSTRUCTIVE SURGICAL MISSION IN WEST AFRICA: CHALLENGES AND DOWNSIDES

Miriam Miguel-Ferrero[1], Carlos Delgado-Miguel[1,2], Javier Serradilla[1], María Velayos[1], Natalia Martos[3], Sandra Casares[3], Gemma Campo[1], Carlos De la Torre[1]
[1]La Paz Children´s Hospital, Madrid, Spain. [2]Fundación Jiménez Díaz University Hospital, Madrid, Spain. [3]Niño Jesús University Hospital, Madrid, Spain

Abstract

Aim of the Study**:** Limited access to medical care in West-African children entails that health issues that would, otherwise, have a good prognosis, result in severe sequelae. The only hope for these patients is short-term reconstructive surgical missions, that have, on the other hand, been frequently criticized due to lack of evidence of their value. Our aim is to describe the challenges and downsides we encountered in one of these missions.

Methods: We present an observational prospective study in children who underwent reconstructive surgery during the short-term pediatric surgical mission of “Surgeons in action” in Serekunda (The Gambia; November 2022). We recorded demographic, clinic and surgical data and postoperative results.

Main results**:** Of the total of 138children that underwent surgery, we performed 16reconstructive procedures on 11children (6girls/5boys; median age: 8years; medium weight: 24±5,2kg). We performed: 4skin grafts for hand post-burn contracture; 2vascular malformations excisions; 2duplicated toes excision; debridement and skin grafts of multiple chronic ulcers in the lower extremity of a girl. Four patients were not deemed candidates for surgery for their security or a satisfactory outcome could not be guaranteed. At 3months follow-up, no severe complications were reported, but 2patients presented moderate complications (partial recurrence of contracture and partial graft loss) due to the lack of quality aftercare.

Conclusions**:** An adequate patient selection is paramount to guarantee the lack of major complications in short-term reconstructive surgical missions. These missions are the only hope for many children in Africa, but, in order to achieve optimal results, they should focus on developing sustainable partnerships.

GE19_SO / 16:20 – 16:25

PRIMARY APPENDECTOMY VERSUS APPENDECTOMY FOR FAILED NON-OPERATIVE MANAGEMENT OF SIMPLE ACUTE APPENDICITIS IN CHILDREN: A COMPARISON OF POST-OPERATIVE OUTCOMES

Audelia Eshel Fuhrer[1], Gal Becker[1], Rony Eben Ezra[1], Igor Sukhotnik[1,2], Haguy Kammar[1]
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Abstract

Aim of the Study: Failure of non-operative management (NOM) of simple acute appendicitis (SAA) is usually defined as need for an appendectomy. Latest reports on high rates of NOM failure have discouraged the use of this treatment. However, no study has specifically investigated the safety of appendectomy as a second line of SAA treatment in comparison to primary appendectomy. We aimed to compare the post-operative outcomes of these procedures.

Methods: A retrospective cohort including children>5y diagnosed with SAA and admitted to our institution between 1.1.2019-30.06.2021. Children who were offered both choices of NOM or primary appendectomy at the time of admission were eligible. Group A (n=45) included children who failed NOM and then underwent appendectomy. Group B (n=91) included children who underwent primary appendectomy. Post-operative complications were compared according to the Clavien-Dindo classification.

Main results: The groups did not differ in terms of age or gender ($p>0.05$). Group A had 70% lower odds for post operative complications compared to group B ($p=0.036$). Mean post-operative hospitalization was 1.1d longer for group B ($p=0.004$). ER revisit and readmissions were higher in group B compared to group A (14% vs 4%, $p=0.085$ and 8% vs 0%, $p=0.056$ respectively). Conversely, group A had 10.8d longer total antibiotic therapy ($p<0.0001$) and 1.1 higher number of imaging studies ($p<0.0001$).

Conclusions: Appendectomy secondary to failure of NOM is a safe procedure with lower complications rate and lower rate of post-operative hospital referrals compared to primary appendectomy. We support considering NOM for children with SAA as a safe alternative to primary appendectomy.

GE20_SO / 16:25 – 16:30

THE EFFECTS OF A TEDDYBEAR HOSPITAL PROJECT ON PRESCHOOL CHILDREN'S KNOWLEDGE AND MEDICAL STUDENTS' PROFESSIONALISM

Julia Mildenberger[1,2], Rafael Cámara[3], Oliver Muensterer[1,4]
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Abstract

Aim of the Study: The Teddybear Hospital (TH) Project is an effort to increase children's knowledge and decrease anxiety. This study evaluates the educational effects on participating preschool children and medical students.

Methods: Preschool children were offered to bring their stuffed toys to the TH. Non-participating preschool peers served as controls. Medical students who had completed the pediatric surgery rotation staffed the TH. The children's knowledge on anatomy, medical equipment, and healthy lifestyle, along with their level of anxiety towards medical staff was assessed by pre- and postinterventional validated survey tools. Medical student who participated in the TD were tested on professionalism, and on pediatric surgical knowledge 3 weeks after the intervention and compared to non-participating peers.

Results: A total of 63 children took part in the TD and were compared to 68 children in the control group; 48 medical students (16 intervention, 32 control) participated. Children's state anxiety decreased by 0.98 points (95% Confidence Interval [CI] -0.3 to -1.8, $p<0.005$), while knowledge increased on "healthy lifestyle" by 1.4 points (95% CI 0.7 to 2.0, $p<0.05$), on "medical equipment" by 4.5 points (95% CI 3.4 to 5.4, $p <0.0001$), and on "anatomy" by 5.1 points (95% CI 3.7 to 5.4, $p<0.01$). No changes were detected in controls. Medical students' professionalism increased by 4.7 points (95% CI 0.8 to 8.6, $p=0.02$) compared to non-participants.

Conclusions: Preschool participation in a TH increases knowledge and decreases anxiety towards hospitalization and medical personnel. It also helped medical students playfully acquire medical professionalism.

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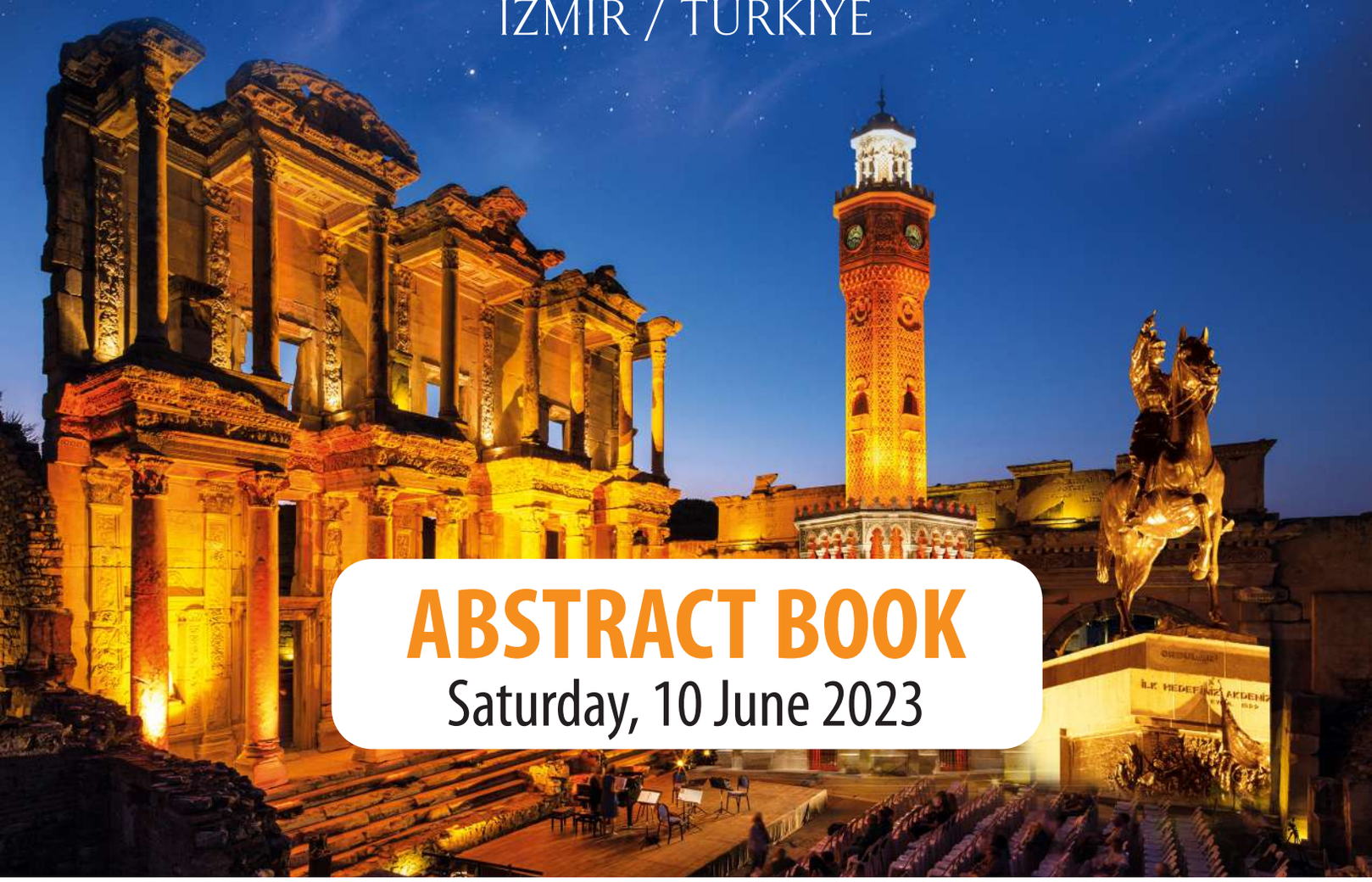

ABSTRACT BOOK

Saturday, 10 June 2023

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08:30 - 10:00

Scientific Session XI

Trauma/General (Parallel Session)

(M1) Regency 1

Chair: Zane Abola (LAT)

Nigel Hall (UK)

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TR01_LO / 08:30 – 08:40

COMPARISON OF THE EFFECTIVENESS OF THREE DIFFERENT SKIN SUBSTITUTES FOR THE TREATMENT OF PEDIATRIC BURNS

Carlos Delgado-Miguel[1,2], Ada García[1], Lara Fuentes[1], Mercedes Díaz[1], Miriam Miguel-Ferrero[1], Juan Carlos López-Gutiérrez[1]
[1]La Paz Children´s Hospital, Madrid, Spain. [2]Fundación Jiménez Díaz University Hosptial, Madrid, Spain

Abstract

Aim of the Study: Early debridement of dermal burns and coverage of the affected area with skin substitutes is the main treatment in paediatric patients, although there is currently no "gold standard". Our aim is to compare the effectiveness of the different skin substitutes available, analyzing the medium and long-term outcomes.

Methods: A retrospective study was conducted on burn patients admitted to our Burn Unit between 2015-2021, who were divided into 3 groups according to the type of treatment used (EZ-derm®, Biobrane® and Suprathel®). Demographic, clinical data and short- and long-term outcomes were analysed for each patient. Effectiveness was analyzed by escharectomy and grafting rate during acute management and long-term follow-up reintervention rate.

Main results: A total of 378 patients were included (179 Ez-derm® group, 107 Biobrane® group and 92 Suprathel® group). No differences in demographics or burn features were observed between them. Patients treated with Suprathel® had a significantly shorter hospital stay [median 4 days (Q1-Q3: 2-9)], a lower rate of escharectomy and grafting during acute management (21.1%) as well as a lower long-term follow-up reintervention rate (18.5%) compared to the Ez-derm® group [median stay 9 days (Q1-Q3: 6-13); escharectomy and graft 24.6% and reintervention 26.8%] and to the Biobrane® group [median stay 9 days (Q1-Q3: 7-14); escharectomy and graft 32.1% and reintervention 26.2%].

Conclusion: Dermal burns treatment with Suprathel® is associated with a shorter hospital stay, lower need for escharectomy and grafting, and lower need for long-term reintervention. Therefore, it should be considered the treatment of choice for pediatric dermal burns.

TR02_LO / 08:40 – 08:50

SECONDARY BLAST INJURY: RADIOLOGICAL CHARACTERISTICS OF SHRAPNEL INJURIES IN CHILDREN

İnan Korkmaz[1], Mehmet Emin Çelikkaya[2], Ahmet Atıcı[2]
[1]Hatay Mustafa Kemal University, Department of Radiology, Hatay, Turkey. [2]Hatay Mustafa Kemal University, Department of Pediatric Surgery, Hatay, Turkey

Abstract

Aim of the Study: To examine the radiological images of child victims suffering from secondary blast injuries, to reveal organ-based injury patterns and their interrelationships, and to record mortality rates that may develop due to injured systems.

Methods: 65 patients with secondary blast injury due to bomb explosion were included. Injury findings due to shrapnel in radiography and computed tomography (CT) images of the patients were examined. Injured systems and types of injuries were recorded. Children who died in the emergency department or in the pediatric surgery unit during follow-up and treatment were identified from the records. This retrospective study was approved by the local ethics committee.

Main results: The most common injuries were intra-abdominal injuries (41 patients, 63%) and fractures (38 patients, 58.5%). The most common injuries accompanying liver injury were small bowel injury in 7 (43.8%) patients (p=0.420) and spleen injury in 3 (18.8%) patients (p=0.306). Coexistence of small bowel injury and large bowel injury was present in 8 patients (34.8%), and it was statistically significant (p=0.019). Brain damage was present in 10 (71.4%) of 14 (21.5%) patients who died, which was statistically significant (p<0.001).

Conclusions: Our results show that he most common injuries were intra-abdominal injuries. Deaths were especially associated with brain injuries. It should not be forgotten that CT scans will have an important place in the triage of the patient, especially in victims with shrapnel at the abdominal and cranial levels in radiography examinations.

TR03_LO / 08:50 – 09:00

AMPUTATION EXPERIENCES IN A TERTIARY PEDIATRIC BURN CENTER IN THE PEDIATRIC SURGERY CLINIC

Sarper Müftüoğulları[1], Sabri Demir[2], Süleyman Arif Bostancı[3], Elif Emel Erten[3], Can İhsan Öztorun[4], Ahmet Ertürk[4], Şükrüye Demirkaya[1], Osman Nuri İş[1], Müjdem Nur Azılı[4], Emrah Şenel[4]
[1]University of Health Sciences, Ankara City Hospital, Department of Pediatric Surgery, Ankara, Turkey. [2]University of Health Sciences, Ankara City Hospital, Pediatric Burn Center and Department of Pediatric Surgery, Ankara, Turkey. [3]Ankara City Hospital, Department of Pediatric Surgery, Ankara, Turkey. [4]Ankara Yıldırım Beyazıt University, School of Medicine, Department of Pediatric Surgery, Ankara, Turkey

Abstract

Aim of the study: The aim of our study is to share our clinical data and experience with amputation among inpatient burned children in our Pediatric Burn Center (PBC).

Methods: The records of the patients between January 2005 and December 2022 were reviewed retrospectively. Age, gender, length of stay, total burned surface area, cause of the burn, grafting, amputation, and mortality rate were evaluated. Patients who underwent amputation were identified, and their data were compared with patients whose amputation was not performed. P<0.05 was considered significant.

Main results: A total of 160 amputations were performed in 51 of 2474 patients. The fingers and toes were amputated most frequently. The mean age of amputated victims was found to be higher than non-amputated (7.25 years vs. 4.41 years; p<0.001), the length-of-stay at PBC was longer (15.67 versus 66.45 days; p<0.001), the total burned surface area was larger (29.75% vs. 15.04%, p<0.001), the grafting rate was higher (96.1% vs. 29.1%; P<0.001), and the male ratio was higher (80.4% vs. 60.3; p=0.004). Of the amputated victims, 29 (56.9%) had flame burns, and 22 (43.1) had electrical burns. The mortality rate was 3.9% in the amputation and 2.4% in the non-amputation group (p<0.001).

Conclusion: Although flame and electrical burns are less common in children compared to scald burns, amputation is performed at much higher rates. In order to prevent these, it is important to make the first evaluation immediately and to perform the necessary fasciotomies, and escharotomies before the compartment syndrome develops.

TR04_SO / 09:00 – 09:05

BLAST LUNG INJURY IN CHILDREN: INJURY PATTERNS AND ASSOCIATED ORGAN INJURIES

İnan Korkmaz[1], Mehmet Emin Çelikkaya[2]
[1]HMKU Faculty of Medicine, Department of Radiology, Hatay, Turkey. [2]HMKU Faculty of Medicine, Department of Pediatric Surgery, Hatay, Turkey

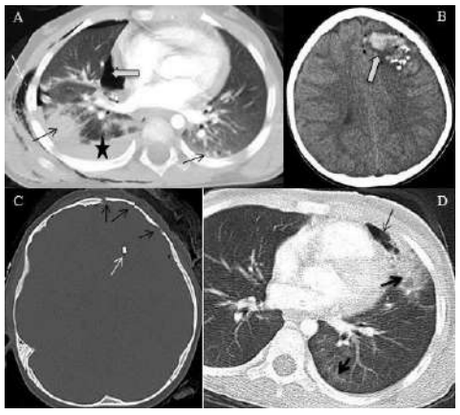
Abstract

Aim of the Study: Bombings are the most common cause of civilian deaths in wars and unfortunately, a large proportion of civilian victims are children. This study aimed to examine the radiological findings of blast lung injury in children, evaluate lung injury patterns on radiological images and document the relationship between blast lung and mortality.

Methods: 36 children with blast lung injury were included in the study. The pediatric trauma score evaluations made in the emergency department in the first admission were recorded. Lung injury findings in the radiography and computed tomography images of the patients were examined, and injuries detected in other systems were recorded. This retrospective study was approved by the local ethics committee (30/06/2022, meeting number 8, decision number 19).

Main Results: The most common lung injury pattern was contusion (right 69.4%, left 80.6%). The incidence of brain damage (52.4%) and intra-abdominal injury (76.2%) in children with low PTS value was statistically significantly higher (p=0.049, p=0.017, respectively). There was no statistically significant correlation between the presence of lung injury, injury patterns, and mortality. The incidence of brain damage in deceased patients (61.5%) was statistically significantly higher than the incidence of brain damage in surviving patients (26.1%) (p=0.036). Low PTS was observed in 11 (84.6%) of the deceased children and in 10 (43.5%) of the survivors (p=0.016).

Conclusions: Our findings revealed that pediatric blast lung injury is associated with other system injuries, and that a multimodal radiological approach is required in child victims.



TR05_SO / 09:05 – 09:10

BLOCKING PAIN IN THE EMERGENCY ROOM, ONE NERVE AT A TIME: A RETROSPECTIVE COHORT STUDY

Oscar Mazzei[1,2], Ahkin Keizer[3], Desislava Varbanova[1], Thomas Benkoe[1]
[1]Klinik Donaustadt- Department of Pediatric Surgery, Vienna, Austria. [2]University of Trieste- Doctoral Program in Sciences of Development and Reproduction, Trieste, Italy. [3]Medical University of Vienna- Department of Orthopedics and Traumatology, Vienna, Austria

Abstract

Aim of the Study: The aim of this study was to evaluate the impact of peripheral nerve blocks (PNB) in the pediatric emergency department (ED) for selected injuries on door-to-analgesia time and hospital length of stay.

Methods: A retrospective chart review was conducted on all patients with hand or face laceration or femur or metacarpal fractures with dislocation, over a one-year period. We compared the results of PNB (ultrasound guided femoralis, radialis, medianus, ulnaris blocks, or landmark based supraorbital, infraorbital, or mental blocks) with those of treatment under general anesthesia. Data collected included door-to-analgesia time, hospital length of stay and anesthesiological complications.

Main results: Data on 76 patients were collected, 38 in the PNB group. We observed a reduction in door-to-analgesia time in the PNB group, with a mean reduction of 15 minutes compared to the control group ($p>0.001$). A procedural sedation was required in two cases and additional local anesthesia in three cases in the experimental group. The mean hospital length of stay was significantly shorter in the PNB group with a mean reduction of 9 hours ($p>0.001$). No complications were reported in either group.

Conclusions: The introduction of PNB in the pediatric ED significantly reduces door-to-analgesia time and the hospital length of stay required for treatment of selected injuries. This technique appears to be a safe and effective alternative to traditional methods of pain management in the pediatric emergency setting. Further studies are needed to confirm these findings and to evaluate the potential benefits of PNB in other types of injuries.

TR06_SO / 09:10 – 09:15

NON-FIREARM RELATED PENETRATING THORAX AND ABDOMEN TRAUMA: EXPERIENCES OF 100 CHILREN IN A PEDIATRIC TRAUMA CENTER

Elif Emel Erten[1], Can İhsan Öztorun[2], Bilge Başaran[3], Vildan Selin Şahin[1], Ahmet Ertürk[2], Sabri Demir[3], Süleyman Arif Bostanci[1], Sukruye Demirkaya[3], Yavuz Yilmaz[3], Müjdem Nur Azili[2], Emrah Senel[2]
[1]ankara Bilkent City Hospital Department of Pediatric Surgery, Ankara, Turkey. [2]ankara Yildirim Beyazit University School of Medicine Department of Pediatric Surgery, Ankara, Turkey. [3]university Of Health Sciences Department of Pediatric Surgery, Ankara, Turkey

Abstract

Aim of the Study: We aimed to evaluate the epidemiological data and treatments of children with non-firearm related penetrating thorax and abdomen trauma.

Methods: Between 2015- 2022, children who were admitted to the pediatric trauma center with non-firearm related penetrating thorax and abdomen trauma were retrospectively analyzed in terms of demographic data, mechanism of injury, injured organs of hospital stay

Main results: One hundred patients were included in the study. The mean age was 14.51±2.75 years and 89 (89%) were male and 11 (11%) were female. Sixty-nine (69%) patients were injured by intentional injury, and 31 (31%) patients were injured by accident. Type of injury was knife injury in 81 patients. There were thoracic injuries in 45 patients. They were treated by thoracoscopic surgery in 3 patients, by tube thoracostomy in 21 patients, and by conservatively primary suturing of the incisions in 21 patients. 58 patients had abdominal injuries. Laparotomy was performed in 9 patients due to hemodynamic instability, and laparoscopic exploration was performed in 15 patients.13 patients had both thoracic and abdominal injuries. The mean of hospital stay was 3.83±2.75 days. The mean of hospital stay was 6.71±2.53 days in patients who underwent surgery, and 3.25±2.63 days in those who underwent conservative treatment ($p<0.05$). There was no mortality in the follow-up period.

Conclusions: In our study, we found that non-firearm penetrating injuries occurred more frequently in adolescent boys as intentional knife injuries. Laparoscopy and thoracoscopy should be done safely in the treatment of penetrating thoracic and abdominal injuries.

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TR07_SO / 09:15 – 09:20

NEUTROPHIL-TO-LYMPHOCYTE RATIO AS A PREDICTOR OF SHORT- AND LONG-TERM COMPLICATIONS IN PEDIATRIC BURNS

Carlos Delgado-Miguel[1,2], Lara Fuentes[1], Ada García[1], Mercedes Díaz[1], Miriam Miguel-Ferrero[1], Juan Carlos López-Gutiérrez[1]
[1]La Paz Children´s Hospital, Madrid, Spain. [2]Fundación Jiménez Díaz University Hospital, Madrid, Spain

Abstract

Aim of the Study: Neutrophil-to-Lymphocyte Ratio (NLR) has been postulated as a useful inflammatory biomarker in the prediction of complications in different pediatric diseases. Our aim is to analyze the role of the NLR in the development of complications in children with burns, both in the short term (need for grafting) and in the medium to long term (need for reintervention on different sequelae).

Methods: A retrospective study was performed in burn children followed up in our Burn Unit between 2015-2021. Demographic, clinical and laboratory features at admission were evaluated. Predictive factors for the development of complications after burns (time of evolution, burned body surface area, and acute phase reactants) were analyzed using sensitivity and specificity analysis (ROC curves).

Results: A total of 342 patients (198 males, 144 females) were included, with a median age of 27 months (interquartile range 15-83 months). In 97.4% of cases the burns were caused by thermal injuries (78.4% scald burns). Acute escharectomy and grafting were performed in 85 patients (24.9%), while long-term sequelae were observed in 112 cases (32.7%). NLR was the most sensitive and specific predictor for the need of escharectomy and grafting (Sensitivity 90%, Specificity 88.4%; AUC 0.920), for the development of long-term sequelae (Sensitivity 80.4%, Specificity 83.5%; AUC 0.849) and for the need of reintervention (Sensitivity 83.5%, Specificity 80.9%; AUC 0.833).

Conclusion: NLR may be considered the best predictor for the development of short- and long-term complications and sequelae of childhood burns. It may help to identify high-risk patients to prevent these consequences.

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GE21_SO / 09:20 – 09:25

THE IMPACT OF SLEEP DEPRIVATION ON PERFORMANCE ON A ROBOTIC TRAINING PLATFORM

Samaneh Hasari[1], Jan Gödeke[1,2], Jochem König[3], Oliver Muensterer[1,2]
[1]Department of Pediatric Surgery, University Medical Center of the Johannes-Gutenberg-University, Mainz, Germany. [2]Department of Pediatric Surgery, Dr. von Hauner Children's Hospital, LMU Medical Center, Munich, Germany. [3]IMBEI, Johannes Gutenberg University, Mainz, Germany

Abstract

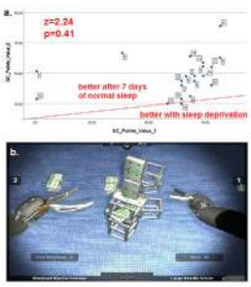
Aim of the Study: The effect of sleep deprivation on surgical performance is controversial. While some studies show impairment, others do not. This study evaluates the impact of sleep deprivation on standardized performance scores on a robotic training platform.

Methods: Surgical trainees were recruited to participate. After overcoming the learning curve, they performed a curriculum of 4 exercises ("ring tower", "suture sponge", "vitruvian operation", "stacking challenge") on a virtual-reality robotic simulator (Mimic dV-Trainer), having slept normally for 7 days. They then performed the same curriculum after an on-call night shift with no more than 3.5 hours of sleep. Performance scores with or without sleep deprivation were compared. All participants were asked to answer standardized questionnaires on chronotype and overall sleep quality.

Results: Twenty participants completed the study. Fourteen reported sleep problems, 4 were morning persons, and 5 were evening persons according to standardized questionnaires. There were no significant differences between sleep-deprived and non-sleep deprived performance except for overall scores in the "stacking challenge" exercise (figure). Sleep deprivation impaired performance more often in morning-person chronotypes.

Conclusions: Sleep deprivation in surgical trainees is generally not associated with lower performance on a robotic simulator except in the complex task of stacking a tower, which requires a combination of strategy, dexterity, coordination, and steady hand movements. Because these factors are fundamental for safe robotic operations, surgeons should avoid operating after they have gotten less than 3.5 hours of sleep.

Figure: Composite scores (a.) of the "stacking challenge" exercise (b.) with (x-axis) and without (y-axis) sleep deprivation.



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GE22_SO / 09:25 – 09:30

COMPARISON OF SINGLE-INCISION LAPAROSCOPIC PERCUTANEOUS AND CYSTOSCOPE FORCEPS ASSISTED MORGAGNI HERNIA REPAIR TECHNIQUES

Mehmet Hanifi Okur, Bahattin Aydoğdu, Mustafa Azizoğlu, Serkan Arslan, Erol Basuguy
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Abstract

Aim of the study: As this is the first study on Morgagni hernia repair, our goal was to compare single-incision laparoscopic percutaneous and cystoscope forceps-assisted Morgagni hernia repair techniques.

Methods: A total of 40 patients were allocated to two groups, each with 20 patients. Group 1: Single incision (port) laparoscopic surgical percutaneous Morgagni hernia repair (with a 5 mm Storz laparoscopic scope entered through the umbilicus). Group 2: Single incision (port) laparoscopic surgical percutaneous Morgagni hernia repair (with an 11 Fr [3.6 mm] Olympos cystoscope entered through the umbilicus + using forceps + sac plication, and sac cauterization). In Group 1; the sac was not removed. In group 2; we advanced the forceps through the cystoscopy, caught the sac, pushed the needle through the sac, plicated the sac, and then we cauterized the sac.

Main results: Of the 40 patients, 70% (n=28) were male. The symptoms at admission included repeated chest infections (40%), dyspnea (30%), vomiting (22%), and abdominal pain (22%). The colon (80%) was the most frequently herniated organ. No difference was found between groups in terms of age, gender symptomatology, or associated anomalies. The operation time was shorter in group 2 compared to group 1 ($p<0.05$; 25 minutes vs 40 minutes). Although there was one recurrence in group 1, no recurrence was reported in group 2. The recurrence incidence did not differ between groups ($p>0.05$).

Conclusions: Cystoscope-assisted repair of Morgagni hernia was found to be superior in terms of safety and shorter operation time.

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GE23_SO / 09:30 – 09:35

EUROPEAN PEDIATRIC SURGEONS' ASSOCIATION SURVEY ON TIMING OF INGUINAL HERNIA REPAIR IN PREMATURE INFANTS

Tutku Soyer[1], Luca Pio[2], Ramon Gorter[3], Leopoldo Martinez[4], Jens Dingemann[5], Federica Pederiva[6], Anne Dariel[7], Elle Ruttenstock[8,9], Mohits Kakar[10], Nigel Hall[11]
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Abstract

Aim of the study: To evaluate practice patterns of European Pediatric Surgeons' Association (EUPSA) members in the timing of inguinal hernia repair (IHR) in premature infants (PI,<37 weeks).

Methods: An online-survey consisting of 29 questions, was distributed among EUPSA members between 11th-25thJanuary 2023.

Main Results: 150 EUPSA members completed the survey. IHR for PI without history of incarceration (HI) was preferred before discharge by 56% of the respondents. In PI with HI, 60% of respondents prefer to operate before discharge and 27% of them operated at diagnosis. In term infants, 43% of respondents postpone the surgery if there was no HI. Most of the responders reported that rationale to operating before discharge was risk of incarceration whereas lower the risk of apnea was the most mentioned rationale for postponing the surgery. 54% of respondents prefer open approach under general anesthesia, 27% of them prefer spinal anesthesia. Only 11% prefer laparoscopic surgery in PI, 17% in PI<32 weeks. Contralateral side evaluation was never done by 61% of respondents and 42% only perform during laparoscopic repair. 77% of respondents report that overnight stay policy is applied in their clinic for PI<37 weeks.

Conclusion: The practice patterns of pediatric surgeons in the treatment of IH shows wide variation in PI. IHR before discharge was the most common practice because of increased risk of incarceration. Lower risk of postoperative apnea has been reported as the most common rationale to postpone the surgery. Randomized trials are needed to define the best timing for IHR in PI.

GE24_SO / 09:35 – 09:40

THE EFFECT OF LAPAROSCOPIC PYLOROMYOTOMY ON CEREBRAL AND SPLANCHNIC OXYGENATION

Silvia Ceccanti, Alice Cervellone, Denis A. Cozzi
Sapienza University o Rome, Rome, Italy

Abstract

Aim of the Study: To investigate whether CO_2 insufflation alters cerebral and abdominal oxygenation during laparoscopic pyloromyotomy.

Methods: After appropriate ethical and parental approval, we enrolled 25 patients who underwent laparoscopic pyloromyotomy using 6-8 mmHg pneumoperitoneum at 31.86±10.98 days of life. Regional cerebral oxygen saturation (cSO_2) and splanchnic oxygen saturation (sSO_2) were measured using near-infrared spectroscopy. Clinical parameters such as end-tidal carbon dioxide levels ($ETCO_2$), heart rate, body temperature, arterial pressure and urine output have also been recorded. Data (mean±SD) were collected intraoperatively at 0, 15, and 30 minutes and compared to baseline values using the t-test.

Main results: cSO_2 remained stable throughout the operation compared to baseline values. Three (12%) patients presented >20% fall at 15 and 30 minutes of laparoscopy, and one presented metabolic acidosis at the end of surgery. sSO_2 had a significant fall from 15 minutes of surgery (p=0.006) until the end of insufflation, when there was an improvement in sSO2 levels, although still lower than the baseline values (p=0.02). $ETCO_2$ increased significantly during the first 15 minutes of laparoscopy, reaching a maximum of 43.1±11.5 Kpa at 30 minutes. Urine output was significantly reduced within 4 hours after laparoscopy.

Conclusions: The increase of $EtCO_2$ during laparoscopic pyloromyotomy confirms that the insufflated CO_2 is absorbed by the peritoneum, although it does not significantly affect the cSO_2. However, 6-8 mmHg pneumoperitoneum leads to an intraoperative decrease of sSO_2 and oliguria during the first post-operative hours, a reversible phenomenon.

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GE25_SO / 09:40 – 09:45

IS CONSERVATIVE MANAGEMENT OF FOLLICULAR VARIANT PAPILLARY THYROID CARCINOMA AND NIFTP POSSIBLE IN CHILDREN?

Ulgen Celtik[1], Yesim Ertan[2], Samim Ozen[3], Damla Goksen[3], Ahmet Celik[1]
[1]Ege University Faculty of Medicine Department of Pediatric Surgery, Izmir, Turkey. [2]Ege University Faculty of Medicine Department of Pathology, Izmir, Turkey. [3]Ege University Faculty of Medicine Department of Pediatric Endocrinology, Izmir, Turkey

Abstract

Aim of the Study: Non-invasive follicular thyroid neoplasm with papillary-like nuclear features (NIFTP) is a new entity with benign clinical characteristics. However, there is limited data in literature for pediatric population. We aimed to compare NIFTP and invasive encapsulated follicular variant papillary carcinoma (fvPTC) and to discuss management protocol.

Methods: Records of patients with fvPTC and NIFTP between 2016-2022 were reviewed retrospectively. Two groups were compared according to demographics, radiological findings, surgical management, postoperative management, and long-term follow-up. Statistical analyses were performed by Chi-Square, Fisher's Exact, Fisher-Freeman Halton Exact and Mann-Whitney-U tests.

Main results: Twenty patients (M/F:7/13) were included with 10 in NIFTP, and 10 in fvPTC group. Mean age at operation was 14.10∓2.61 years. Demographics and preoperative nodule sizes (p:0.912) were statistically similar between groups. Although there was a tendency for lobectomy in NIFTP group, there was no statistically significant difference between groups in terms of surgical treatment, it was depicted in Figure 1. In postoperatively, while no patient received radioactive iodine treatment (RAI) in NIFTP, it was received in 6 for fvPTC. (0.011) Five patients in NIFTP, and 3 in fvPTC followed with only lobectomy without any adverse events or recurrence for 47.50∓19.25 and 30.10∓19.25 months follow-up period respectively.

Conclusion: To conclude, NIFTP seems indolent disease, therefore, children who have NIFTP can be observed with lobectomy. Also, they do not require RAI treatment. However, larger series are required for more reliable results.

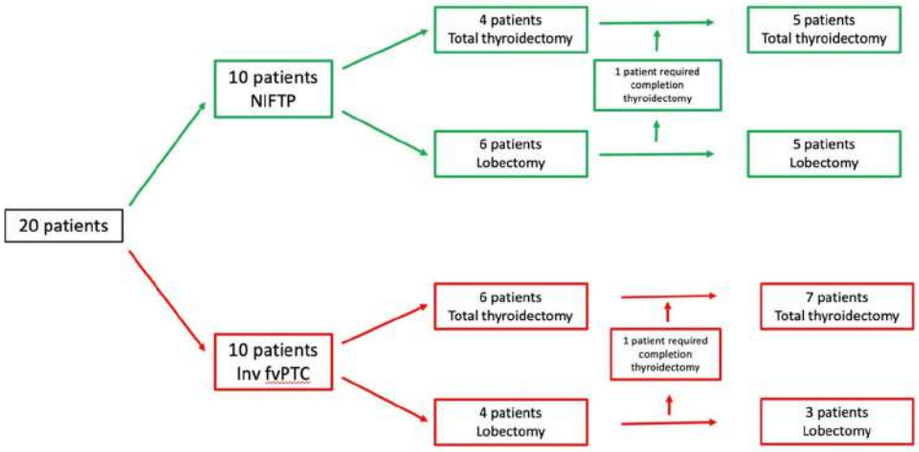

Figure 1: Surgical management for two groups

GE26_SO / 09:45 – 09:50

ADDITION OF A TRANSFIXION SUTURE TO THE PURSE-STRING SUTURE DURING LAPAROSCOPIC INGUINAL HERNIA REPAIR INCREASES PERI-HERNIA NECK SAC COLLAGEN FORMATION

Oktay Ulusoy, Cansu Kural, Oğuz Ateş, Faika Gülce Hakgüder, Mustafa Olguner, Feza Miraç Akgür
Dokuz Eylul University, Medicine School, Department of Pediatric Surgery, İzmir, Turkey

Abstract

Aim of the Study: Several laparoscopic inguinal hernia repair (IHR) and suture techniques have been developed. We have been performing single port laparoscopic IHR with ''Single Port Incisionless – Intracorporeal Conventional Equipment-Endoscopic Surgery'' (SPICES) method since 2005. In this method, transfixion suture was placed in addition to intracorporeal purse-string suture. An experimental study was conducted to investigate the effects of suture techniques on collagen formation, which is an indicator of fibrosis in the peri-hernia neck sac.

Methods: Thirty-five adult male, Wistar-Albino rats (260-300 g) were used in the current study. Rat testes being intraabdominal physiologically provided an open inguinal channel model. The testes were descended to the scrotum with silk suture. Suture techniques were applied and on 15th day post-operative inguinal channels were examined. Results were statistically analyzed and a p-value <0,05 was considered statistically significant. There were 5 experimental groups: Group 1: Control group (n=7), Group 2: Sham group (n=7), Group 3: IHR with purse-string suture only (n=7), Group 4: IHR with transfixion suture only (n=7), Group 5: IHR with purse-string suture plus transfixion suture (n=7)

Main results: Collagen thickness of the peritoneum around the internal inguinal ring were similar in the control and sham groups. The collagen thickness in group 5 was significantly higher compared with groups 4 and 3 ($p<0.001$). However, no statistical difference was found between groups 4 and 3 ($p=0.5468$).

Conclusion: The combined use of purse-string and transfixion suture in laparoscopic inguinal hernia repair stimulates collagen formation, hence fibrosis, the most and thus prevents recurrence.

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GE27_SO / 09:50 – 09:55

ACCURACY OF THE DERIVED NEUTROPHIL-TO-LYMPHOCYTE RATIO FOR THE DIAGNOSIS OF ACUTE APPENDICITIS IN CHILDREN

Julio César Moreno Alfonso[1,2], Ada Molina Caballero[1], Aníbal Teherán[3], Alberto Pérez Martínez[1]
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[3]Fundación Universitaria Juan N Corpas, Bogotá, Colombia

Abstract

Aim of the Study: To determine the accuracy of derived neutrophil to lymphocyte ratio (dNLR) for diagnosis of acute appendicitis in children.

Methods: Prospective diagnostic study of patients with acute appendicitis and controls with non-surgical abdominal pain, who were admitted at our hospital from 2020 to 2022. White blood cell count (WBC), neutrophil to lymphocyte ratio (NLR) and dNLR were compared between groups. The Institutional Ethics Review Board has approved this study.

Main results: 202 patients were included: 101 cases with acute appendicitis (69% male, age 9.9 ± 3.3 years) and 101 controls with non-surgical abdominal pain (44% female, age 9.4 ± 3,6). WBC, NLR and dNLR were significantly higher in the acute appendicitis group than control (16.47 ± 5.14 vs. 11.18 ± 4.18 x 103/µL, p= < 0,0001; 9.58 [IQR 9.4] vs. 3.36 [IQR 5.1] p= < 0,0001; and 5.25 [IQR 3.8] vs. 2.39 [IQR 2.7] p= < 0,0001, respectively). The sensitivity, specificity, positive predictive value, negative predictive value, area under the receiver operating characteristic curve and cutoff point of dNLR for diagnosis of acute appendicitis were 71%, 74%, 73%, 72%, 0.811 and 3.78, respectively (Fig. 1). Positive and negative likelihood ratios of WBC, NLR and dNLR were 1.95 and 0.26; 2.05 and 0.32; and 2.77 and 0,39, respectively.

Conclusions: dNLR is a novel, inexpensive and noninvasively inflammatory biomarker that shows a high accuracy for diagnosis of acute appendicitis.

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GE28_SO / 09:55 – 10:00

EUPSA MULTICENTRE STUDY ON MANAGEMENT AND OUTCOMES OF SMALL INTESTINAL ATRESIAS

George Bethell[1], Roma Varik[1], Niels Bjørn[2], Mark Ellebæk[2], Rebeka Pechanová[3], Igor Béder[3], Francesco Laconi[4], Hatice Sonay Yalçın Cömert[5], Gül Şalcı[5], Felix De Bie[6], Marc Miserez[6], Amulya Saxena[1]
[1]Department of Pediatric Surgery, Chelsea and Westminster NHS Foundation Trust, Imperial College London, London, United Kingdom. [2]Department of Surgery, Odense University Hospital, University of Southern Denmark, Odense, Denmark. [3]Department of Pediatric Surgery, National Institute of Children´s Diseases, Bratislava, Slovakia. [4]Department of Pediatric Surgery, University of Reims Champagne-Ardenne, Reims, France. [5]Department of Pediatric Surgery, Karadeniz Technical University, Faculty of Medicine, Trabzon, Turkey. [6]Department of Abdominal Surgery, University Hospitals Leuven, Leuven, Belgium

Abstract

Aim of the study: To analyze management and outcomes of small intestinal atresia (SIA) across Europe.

Methods: Data were retrospectively collected as a EUPSA study from six specialist pediatric surgical units within Europe including infants with SIA over five years (January 2016 to December 2020) with at least one-year follow-up. Outcomes were time to full enteral feeds, length of hospital stay, unplanned reoperation, total number of general anesthesias, short bowel syndrome and mortality. Data are expressed as median (range).

Main results: Fifty-two infants with SIA were identified, of which 28(54%) were male with birthweight 2.75(0.63-4.77)kg. SIA was suspected antenatally in 30(58%) infants. At initial procedure type I, II, IIIa, IIIb and IV SIA were encountered in 12(26%), 10(21%), 12(26%), 5(11%) and 8(17%) procedures respectively (missing in five). Primary anastomosis was undertaken in 39(75%) procedures, anatomical configuration of these were end-to-side(n=12), end-to-end(n=9) and side-to-side(n=7) (missing in six). Of the enterostomies formed, three(23%) were Santulli and three(23%) were Bishop-Koop enterostomies. Unplanned abdominal reoperation, excluding stoma closure, was required in 14(26.9%) infants and indications for these were intestinal obstruction (n=10), bowel necrosis (n=2), stoma complication (n=1) and unspecified (n=1). Other outcomes were generally good and are shown in the table.

Conclusions: Operative approach varies with SIA and is largely dependent on anatomy encountered and surgeon experience. Unplanned reoperation rate is high (>¼), but outcomes generally good. Our findings can be used to counsel parents with antenatal suspicion of SIA.

10:30 - 12:00

Scientific Session XIII

Oncology (Parallel Session)

(M1) Regency 2

Chair: Gonca Tekant (TUR)

Stefano Guliana (UK)

ON01_LO / 10:30 – 10:40

WHAT PLACE FOR THE RETROPERITONEOSCOPIC APPROACH IN SUPRARENAL NEUROBLASTIC TUMORS IN CHILDREN?

Jessica Pinol[1], Nicoleta Panait[1], Audrey Aschero[1], Alice Faure[1], Frédéric Hameury[2], Olivier Abbo[3], Aurélien Scalabre[4], Jean-François Lecompte[5], Nicolas Kalfa[6], Carole Coze[1], Marc-David Leclair[7], Anne Dariel[1]
[1]Hôpital La Timone Enfants, APHM, Marseille, France. [2]CHU de Lyon, Lyon, France. [3]CHU de Toulouse, Toulouse, France. [4]CHU Saint Etienne, Saint Etienne, France. [5]CHU de Nice, Nice, France. [6]CHU de Montpellier, Montpellier, France. [7]CHU de Nantes, Nantes, France

Abstract

Aim of the study: 1) To compare results of transperitoneal laparoscopy or retroperitoneoscopy, 2) to define the indications of retroperitoneoscopic approach in management of suprarenal neuroblastic tumors in children.

Methods: This multicenter retrospective study included children who underwent transperitoneal (group A) or retroperitoneoscopic (group B) excision of a suprarenal neuroblastic tumor since 2010. Clinical, radiological, anatomopathological, operative data, and oncologic results were compared.

Main results: 110 patients were included (group A = 90; group B= 20). Tumor diameter was higher in group A (35mm) than in group B (30.5mm) (p=0.09) for tumor volumes of 24.7mL and 6.7mL (ns). An IDRF (Image-Defined Risk Factors) was present in 23% in group A and 35% in group B, more than one in 10% and 5% (ns). 23% of group A and 45% of group B patients were in pretreatment high-risk group (ns). Concerning surgery, dissection difficulties (vascular, adjacent organs) were more frequent in group B (45%) than in group A (13%) (p=0.003) with comparable conversion rate (10%). Lengths of hospitalization and oral intake were shorter in group B (2.4 and 0.7 days) as compared to group A (3 and 1 days) (p=0.05, p=0.08). More local recurrences occurred in group B (15% vs 0%) (p=0.005). Risk factors associated with local recurrence were neoadjuvant chemotherapy and surgical difficulties in vascular dissection.

Conclusions: Retroperitoneoscopy for suprarenal neuroblastic tumors in children is feasible in selected cases. We recommend it for tumors with a maximum diameter of 30-40mm for a volume of 10-15mL, localized and without IDRF.

ON02_LO / 10:40 – 10:50

ULTRASOUND ELASTOGRAPHY IN THE DIAGNOSIS OF MALIGNANT CERVICAL LYMPHADENOPATHY IN CHILDREN: CAN IT REPLACE SURGICAL BIOPSY?

Ahmed Elgendy[1], Eslam Elhawary[2], Mohamed Shareef[2], Marwa Romeih[3], Ahmed Ebeed[4]
[1]Surgical Unit Unit, Tanta University, Tanta, Egypt. [2]Tanta University, Tanta, Egypt. [3]Helwan University, Cairo, Egypt. [4]Kafr El-Sheikh University, Kafr El-Sheikh, Egypt

Abstract

Aim of the Study: To assess the accuracy of ultrasound elastography in detecting pediatric malignant cervical lymph nodes, and if this modality can obviate the need for surgical biopsies.

Methods: A prospective study from September 2017 to September 2020 included 64 children with persistent cervical lymphadenopathy. B-mode ultrasound, color doppler, and sonoelastography were conducted. Elastography scans were classified into five patterns, and patterns from 3-5 were considered as malignancies. All children underwent open biopsies followed by pathological examination. Results of tissue diagnosis were compared to patterns of elastography to determine its accuracy.

Main Results: Twenty-eight patients (43.8%) had malignant nodes and the remaining 36 (56.2%) were due to benign causes. Elastography patterns of 1-2 were documented in 30 patients, and all of them were diagnosed as benign lesions. Patterns of 3-5 were demonstrated in 34 patients. Out of them, 28 were confirmed as malignancies, whilst 6 children were of benign nature (false-positive). All false-positive results occurred in pattern 3 of elastography. Ultrasound elastography achieved 100% and 85.7% sensitivity and specificity, respectively, and an overall accuracy of 90.6% in the differentiation between malignant and benign entities. The overall accuracy of B-mode and color doppler were 75% and 82.2%, respectively.

Conclusions: Elastography is a useful tool that should be added to ultrasound modalities and the diagnostic algorithm for pediatric cervical lymphadenopathy. Surgical biopsy in eligible patients is imperative to commence proper therapy or to discharge the child. Despite favorable results of elastography, it cannot replace surgical biopsy or change its indications.

ON03_LO / 10:50 – 11:00

TREATMENT OF SACROCOCCYGEAL TERATOMA: ARE THERE GLOBAL DIFFERENCES?

LJ van Heurn
1. Emma Children's Hospital, Amsterdam UMC, University of Amsterdam & Vrije Universiteit Amsterdam, Department of Pediatric Surgery, Amsterdam, Netherlands

Abstract

Aim of the study: The vast majority of reported patients with sacrococcygeal teratoma (SCT) is currently treated in high income countries. Others have shown that there are unacceptable differences in the mortality of a number of congenital disorders between low- and high-income countries. It is unknown whether these differences are also present in SCT.

Methods: Retrospective SCT data were collected in an international retrospective study (The SCT Study) including patients from 132 institutes from 63 countries in high (HICs), higher-middle (HMICs), lower-middle (LMICs) and low-income countries (LICs).

Main results: 3409 SCT patients entered analysis; 57 children from low-income countries (LICs), 377 from lower-middle income countries (LMICs), 677 from higher-middle income countries (HMICs) and 2296 from high-income countries (HICs) Median age at resection was higher in LICs: 52 days (IQR 14·0-570) compared to 40 (14-271·5), 17 (6-187·3) and 9 (3-99) days in LMICs, UMICs and HICs, respectively (P<0.001). Malignant disease at presentation was more often found in HICs (n=245, 10·7%) and UMICs (n=91, 13·4%) compared to LMICs (n=27, 7·2%) and LICs (n=3, 5·3%) (p=0.004). The recurrence and survival rates were equivalent in all income groups.

Conclusions: SCTs are resected later in life in LICs and LMICs. Despite later resection malignant disease is not more often found. Patient survival was not significantly different between all income countries ranging from 58.1% to 90.3%. This study shows that SCT surgery can be done well and safely all over the world.

ON04_LO / 11:00 – 11:10

IMPACT OF BCL-2 EXPRESSION ON COURSE OF DISEASE IN NEUROBLASTOMA

Jakob Mühling, Alexandra Fröba-Pohl, Oliver Muensterer, Dietrich von Schweinitz, Roland Kappler
Department of Pediatric Surgery, Dr. von Hauner Children's Hospital, University Hospital, LMU, Munich, Germany

Abstract

Aim of the Study: The anti-apoptotic Bcl-2 protein has implications for maturation and differentiation of neural tissue and acts as a strong modulator of carcinogenesis in different tumors. Recent research focuses not only on its benefit as a prognostic factor, but also as a potential therapeutic target. The role of BCL-2 in neuroblastoma, the most common extracranial solid tumor in childhood, remains controversial. The aim of our study was to determine the gene expression level of BCL-2 in a large cohort of neuroblastoma patients and its correlation with clinical parameters.

Methods: Tumor samples and clinical data were collected from 100 neuroblastoma patients treated according to the NB2004 protocol of the German Society of Pediatric Oncology and Hematology. BCL-2 gene expression levels were measured by quantitative RT-PCR and correlated with clinical parameters.

Main Results: BCL-2 expression was detectable in all tumor samples. Relative BCL-2 expression levels were higher in females versus males (1.839 versus 1.342; p=0.0143), in patients with low versus high International Neuroblastoma Staging System (INSS) stage (2.051 versus 1.463; p=0.0206), in non-metastatic versus metastatic disease (1.801 versus 1.342; p=0.0242), as well as in patients without presurgical chemotherapy (2.145 versus 1.402; p=0.0016), but was not associated with overall survival and MYCN amplification.

Conclusions: Our study demonstrates the ubiquitous expression of BCL-2 in neuroblastoma and suggests the possibility for targeted therapy with BCL-2 inhibitors, even in lower stage neuroblastoma. It also underlines the need for further research on concomitant genetic alterations for a better understanding of the impact of BCL-2 on this pediatric tumor type.

ON05_LO / 11:10 – 11:20

FUNCTIONAL SEQUELAE ASSESSMENT IN PEDIATRIC SURGICAL ONCOLOGY (FUSE): A SURVEY FROM THE INTERNATIONAL SOCIETY OF PAEDIATRIC SURGICAL ONCOLOGY.

Luca Pio[1], Pablo Lobos[2], Simone Abib[3], Jonathan Karpelowsky[4,5], Sharon Cox[6,7], Israel Fernandez-Pineda[8], Andrew Davidoff[1,9], Marc Wijnen[10], Paul D. Losty[11,12], Hafeez Abdelhafeez[1,9]
[1]Department of Surgery, St. Jude Children's Research Hospital, Memphis, USA. [2]Pediatric Surgery Division, Hospital Italiano de Buenos Aires, Buenos Aires, Argentina. [3]Federal University of São Paulo (UNIFESP) - Paulista School of Medicine, Pediatric Oncology Institute - GRAACC/UNIFESP, São Paulo, Brazil. [4]Department of Surgery, Children's Hospital at Westmead, Children's Cancer Research Unit, Kids Research Institute, Division of Child and Adolescent Health, Westmead, Australia. [5]Sydney Medical School, University of Sydney, Sydney, Australia. [6]Division of Paediatric Surgery, Red Cross War Memorial Children's Hospital, Department of Surgery, Faculty of Health Sciences, Cape Town, South Africa. [7]University of Cape Town, Cape Town, South Africa. [8]Department of Pediatric Surgery, Virgen del Rocio Children's Hospital, Sevilla, Spain. [9]Department of Surgery, University of Tennessee Health Science Center, Memphis, USA. [10]Princess Maxima Center for Pediatric Oncology, Utrecht, Netherlands. [11]University of Liverpool, Institute of Life Course and Medical Sciences, Liverpool, United Kingdom. [12]Department of Paediatric Surgery, Ramathibodi Hospital, Mahidol University, Bangkok, Thailand

Abstract

Aim of the Study: Growing numbers of pediatric survivors carry treatment related burden morbidity from multimodal cancer therapies. Few studies report the long-term sequelae that may follow surgery for solid tumours. The aim of this study is to analyze current follow-up assessments and variability in reporting frequency (%) of functional sequelae that may follow solid tumour surgical operations in voluntary participating international centers.

Methods: A survey using a Google platform (Mountain View, California, USA) was designed, validated, and distributed by an international society of pediatric surgical Oncology to a mailing list of pediatric surgical oncologists at each center. The survey consisted of 20 items divided into six areas analyzing a wide range of major pediatric solid tumors.

Main results: A total of 108 surgeons completed the survey, across 45 international countries and 103 referral centers for pediatric surgical oncology. Fertility assessments and pulmonary function testing were not conducted by responders in some 63% of bladder/prostatic tumors and 66% of thoracic surgical oncology resections, respectively with no standardized follow-up. Liver tumors surgery had structured and standardized follow-up (64%). The majority of pediatric surgical oncologists (97%) considered that functional surgical follow-up aftercare should be greatly improved.

Conclusion: This survey has highlighted wide variability in surgical practice with regard functional follow-up assessments in childhood cancer survivors. There is a crucial need to develop better practice with structured post-operative functional screening for all pediatric tumors. A REDCap (Research electronic data capture) database will be deployed to quantify and score metrics linking functional sequelae with international structured follow-up guidelines.

ON06_SO / 11:20 – 11:25

ROBOTIC ASSISTED MINIMAL INVASIVE SURGERY FOR NEUROBLASTIC TUMORS - EXPERIENCES FROM A TERTIARY PEDIATRIC SURGICAL ONCOLOGY CENTER

Thomas Blanc[1], Kai Breuling[2], Melissa Benissad[1], Marianna Cornet[1], Veronique Minard[3], Pablo Berlanga[3], Daniel Orbach[4], Sabine Sarnacki[1]
[1]Service de Chirurgie Pédiatrique Viscéral et Urologique Hôpital Necker Enfants-Malades, Université Paris Cité, Paris, France. [2]Klinik für Kinderchirurgie, München Klinik Schwabing, München, Germany.
[3]Département de Cancérologie de l'Enfant et de l'Adolescent, Institut Gustave Roussy, Paris, France.
[4]Service Clinique de la Pédiatrie-Adolescents-Jeunes Adulte, Institut Curie, Paris, France

Abstract

Aim of the Study: Neuroblastic tumors exhibit a wide range of behaviors from spontaneous regression to significant local and/or metastatic aggressiveness. Open surgery is still required in many cases, but there is growing experience with minimal invasive surgery (MIS) in tumors without image defined risk factors (IDRFs). Robotic assisted minimal invasive surgery (rMIS) has the advantages of tremor filtering, surgeon-guided 3D view and motion scaling. In this report, we share our experience with rMIS in neuroblastoma.

Methods: A retrospective study of patients that underwent rMIS for neuroblastic tumors from 2017-2022.

Main results: From 2017-2022, rMIS was performed for 36 tumors out of 125 procedures conducted for NB (30%). Patients (n=32) had a mean age of 6,5 years (10M-16Y), half of them were younger than 5 years. Mean body weight was 27 kg (7,7 kg-82 kg). 58% of these tumors were neuroblastomas (9 M and 2 MS), 22% ganglioneuroblastomas and 20% ganglioneuromas. Locations were mainly adrenal (53%) followed by mediastinal (19%). IRDFs were present at the day of surgery in 36%, 12 with one IRDF, one with two, consisting mainly in vascular encasement. One conversion to open surgery was necessary. No major complication occurred. Mean hospital stay were 3 days. Macroscopic complete resection was achieved in all cases.

Conclusions: We demonstrate that rMIS is a safe and useful option for selected neuroblastic tumors. The advantage of the robot broadens the field of indications for MIS to L2 tumors, with contacts or encasement of the vessels and thus benefit to a larger number of patients.

ON07_SO / 11:25 – 11:30

HEPATIC HEMANGIOMAS: A DEVIL IN DISGUISE

Isabel González-Barba Neira, Sergio López Fernández, Jose Andrés Molino Gahete, Marta Martos Rodríguez, Gabriela Guillén Burrieza, Mercedes Pérez Lafuente, Manuel López Paredes
Hospital Universitario Vall d'Hebron, Barcelona, Spain

Abstract

Aim of the Study: Hepatic hemangiomas (HH) are usually asymptomatic self-limiting lesions. However, not all exhibit a benign natural course, and some develop life-threatening complications. Our objective was to analyze the role of superselective embolization (SSE) in the treatment of symptomatic voluminous or non-responsive HHs.

Methods: Retrospective review of patients with HH treated at our center between 2008 and 2022. Collected variables include patients' age, gender, lesion type, SSE indication and follow-up.

Main results: A total of 32 patients (14 male/18 female) were diagnosed with HH during this period of time, 3 had a prenatal diagnosis (9.4%), whilst the remaining 29 patients (90.6%) were diagnosed at a mean age of 66.7±63.4 days. Nineteen patients (59.4%) presented focal forms, 11 multifocal (34.4%) and 2 diffuse (6.2%). SSE was indicated, after documenting the presence of high-flow intrahepatic shunting, in patients with congestive heart failure (CHF): 3 with voluminous focal lesions and 1 with multifocal lesions who presented CHF despite receiving steroids and Vincristine. In 2 patients SSE was performed twice (8 and 40 days after the initial procedure). SSE led to hemodynamic stabilization in 3 successful cases (75%). Mean follow-up was 4.86±2.02 years. One patient (25%) presented irreversible hemodynamic instability during SSE. The necropsy revealed pulmonary and systemic microsphere embolism.

Conclusions: HH can develop life-threatening complications, regardless of the lesion type. The availability of a tailored multidisciplinary approach, including SSE, is crucial in the management of patients with severe symptoms.

ON08_SO / 11:30 – 11:35

CONTACT VS. INVASION

Hilmican Ulman[1], Egemen Öztürk[2], Eda Ataseven[3], Bengü Demirağ[4], Deniz Kızmazoğlu[5], Zafer Dökümcü[1], Yeşim Ertan[6], Nur Olgun[7], Ahmet Çelik[1]
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Abstract

Aim of the Study: Image Derived Risk Factors (IDRF) define even contact with the renal pedicle as IDRF(+), making it the most common IDRF. However, this causes the patients to receive unnecessary chemotherapy instead of undergoing safe primary excision. We evaluated contact vs. invasion of the renal pedicle separately, and their effects on complication rates and survival.

Methods: Patients operated for neuroblastoma between 2003-2020 were included. The radiological images of the patients were re-evaluated by a radiologist for IDRFs. Surgical and oncological data were collected retrospectively.

Main Results: A total of 109 patients whose renal pedicle IDRF was evaluated are divided into groups according to IDRF details and their survivals are given in Table.1. It was found that contact with the renal pedicle didn't cause a significant difference in intraoperative complications (p=.617) and surgical complications (p=.485) when compared with negative IDRF. Tumor invasion of the renal pedicle was associated with worse survival compared to IDRF negativity. However, only contact of the tumor with the pedicle has a similar survival rate with IDRF negativity. This analysis was also valid for patients <18 months of age (p=1).

	n	Overall Survival	
0. Negative renal pedicle IDRF	48	%89,6	0-1 p<.0001
1. Invasion of renal pedicle	48	%56,3	
2. Contact with renal pedicle	13	%84,6	0-2 p=.707* 1-2 p=.033

Conclusions: Neuroblastomas that only have contact with the renal pedicle have a similar course with IDRF-negative tumors. These tumors should be classified IDRF-negative instead, unlike tumors that invade the renal pedicle.

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ON09_SO / 11:35 – 11:40

THE EFFECT OF BODY MASS INDEX ON PERMANENT TUNNELED INTRAVASCULAR CATHETER COMPLICATIONS IN PEDIATRIC PATIENTS

Efil Aydın[1], Oktay Ulusoy[2], Cansu Kural[2], Oğuz Ateş[2], Gülce Hakgüder[2], Mustafa Olguner[2], Feza Miraç Akgür[2]
[1]Şehitkamil State Hospital, Department of Pediatric Surgery, Gaziantep, Turkey. [2]Dokuz Eylul University, Medicine School, Department of Pediatric Surgery, İzmir, Turkey

Abstract

Aim of the Study: Permanent tunneled intravascular catheters (PTIC) are increasingly used in children. Although the effects of body mass index (BMI) on complications in different surgical procedures in children have been studied, there is no study evaluating the effects of BMI on management of PTIC. Herein, we aimed to evaluate the correlation between BMI and complications seen in children with PTIC.

Methods: Patients who underwent PTIC placement between 2006 and 2022 were analyzed retrospectively. Demographic characteristics, underlying diseases, catheter indications, surgical reports, BMI values and complications were evaluated. BMI values were evaluated in five groups according to percentile (p) ranges. Results were statistically analyzed and a p-value <0,05 was considered statistically significant.

Main results: 400 patients were included in the study – 182 female (45.5 %) and 218 male (54.5 %). Intravascular catheter line-associated bloodstream infection (CLABSI) and wound infection (WI) were the most common complications. The BMI percentile groups were <3 p, 3-15 p, 15-85 p, 85-97 p and >97 p, containing 26, 26, 259, 58, 31 patients respectively. CLABSI was found to be highest in the <3 p group (13 patients 50 %). As BMI decreased, CLABSI rates have been found to be significantly increased (p <0.001). WI was found to be highest in the >97 p group (17 patients, 44.7 %). WI rates were found significantly higher as the patients BMI increases (p <0.001).

Conclusion: While patients with higher BMI are at more risk of WI, the risk of CLABSI decreases. It appears that BMI has a protective effect on CLABSI.

ON10_SO / 11:40 – 11:45

T-CELL THERAPY IN PEDIATRIC SOLID TUMORS: PRELIMINARY DATA OF A PROSPECTIVE STUDY

Marta Gazzaneo[1], Cristina Belgiovine[1], Alessandro Raffaele[2], Patrizia Comoli[1], Marco Zecca[2], Giovanna Riccipetitoni[1]
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Abstract

Aim of the Study: Pediatric solid tumors are characterized by low level of infiltrating T-cells (TILs) and low mutational burden. Despite the improvement in treatments, metastatic and relapsed disease remains fatal in many children. The development of novel, effective therapies is required to prolong patients' survival. This project aims to investigate the role of immune cell therapy specific for solid pediatric cancer.

Methods: With Ethical Committee approval, we created in the last 6 months, a library of pediatric solid tumor cells, TILs, and TAMs (Tumor-associated macrophages), collecting tumor samples from patients undergoing surgery. In all samples, T-lymphocytes, able to kill tumor cells, are activated in vitro, via known tumor antigens (wt1, PRAME, and survivin) or patients' lysate. To test their effective cytotoxicity, we use ELISPOT assay and cytokine releases FACS analysis.

Main results: To date, we have investigated 12 neoplasms: 9 solid tumors and 3 lymphomas. Among these, only 5 showed the ability to grow in vitro: 2 neuroblastomas, 2 lymphomas, and 1 sarcoma. In parallel, we activated healthy lymphocytes both with the antigens and with the tumor lysate and we obtained an increase in IFN-gamma and TNF-alpha release. Hence, wt1, PRAME, and survivin induced lymphocytes to produce killing cytokines.

Conclusions: These preliminary results are promising in vitro lymphocyte activation induces a cytotoxic response that could be able to kill tumor cells. Further data on a larger series of patient-collected tumor lines and extended research are required to definitively demonstrate that lymphocyte activation can be effective in killing cancer cells.

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ON11_SO / 11:45 – 11:50

LYMPHATIC MALFORMATIONS IN PARKES WEBER SYNDROME: RETROSPECTIVE REVIEW OF SIXTEEN CASES IN A VASCULAR ANOMALIES CENTER

Julio César Moreno Alfonso[1,2], Irune Méndez Maestro[3], Aniol Coll i Prat[3], Lara Rodríguez-Laguna[4], Victor Martínez-Glez[5], Paloma Triana[6], Juan Carlos López-Gutiérrez[6]
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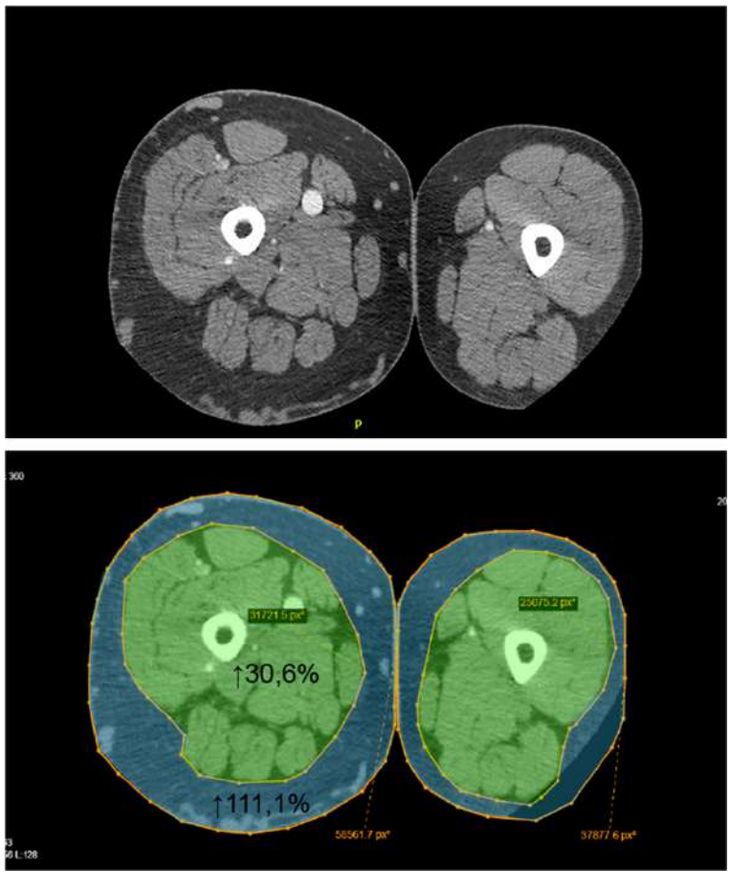
Abstract

Aim of the Study: To describe a series of patients with Parkes Weber syndrome (PWS) to analyze their association with lymphatic malformations (LM) and their role in limb asymmetry.

Methods: Retrospective study of patients diagnosed with PWS in a Vascular Anomalies Center from 1994 to 2020. Clinical data were obtained from medical records including diagnostic imaging, lymphoscintigraphy and genetic testing. The Institutional Ethics Review Board has approved this study.

Main results: A total of 16 patients aged 18 IQR 14.7 years diagnosed with PWS were included (50% female). Six of the 16 patients with Parkes Weber syndrome had clinical and imaging data suggestive of lymphatic malformation (37.5%) and three of them had genetic variants in RASA1 (2/3) or KRAS (1/3). Limb asymmetry was greater in patients with isolated PWS (2.6 ± 0.8 cm) than in the PWS-LM population (2 ± 0.7 cm), although not significant (p= 0.247) (Figure). One in six patients with PWS-LM required amputation (16.6%) versus 1/10 in isolated Parkes Weber syndrome (10%).

Conclusions: Lymphatic malformations may be present in a significant number of patients with PWS and could have a role in limb asymmetry and outcomes. It is paramount to investigate their existence and distinguish them from true overgrowth.



Top: Enlargement of right lower extremity at expense of fatty subcutaneous tissue with lesser contribution of intracompartmental fatty component. Skin thickening and subcutaneous tissue edema suggesting lymphedema. Bottom: Subcutaneous tissue of the right limb is 111.1% higher than in contralateral limb and the muscular compartment is only 30% higher.

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ON_SO_12 / 11:50 – 11:55

ROBOTIC VERSUS OPEN ADRENALECTOMY FOR TUMORS IN THE PEDIATRIC POPULATION: EVALUATION OF EFFICACY, SAFETY AND PERI-OPERATIVE OUTCOMES

Thibault PLANCHAMP[1], Ichrak Belbahri[1], Jessica Pinol[2], Giulia Fusi[3], Marion Gambart[1], Aurélie Le Mandat[1], Olivier Abbo[1]
[1]Hôpital des Enfants, Toulouse, France. [2]La Timone Children Hospital, Marseille, France. [3]University of Siena, Siena, Italy

Abstract

Aim of the Study**:** Pediatric adrenalectomy for tumor is rare. It has been most often managed by an open approach (OA) in our institution. Robot-assisted laparoscopic adrenalectomy (RALA) has been used since 2018 for the management of patients. Our objective was to assess the efficacy, safety, and follow-up of all RALA for pediatric tumor, and compare them to those managed by an OA.

Methods**:** Data from all the children robotically operated on for adrenal tumors in our institution between 2018 and 2022, as well as data for all OA were prospectively recorded. Our primary outcome was the resection quality. Secondary ones included operative time (OT), pain killer consumption, length of hospital stay (LOS), complication rate and healing defined by the absence of recurrence at one year.

Main Results**:** A total of 24 patients was included in this study. None of the two approaches showed superior results for resection quality, mean OT and intra- and postoperative complications. LOS was significantly shorter for RALA than OA (2.6 ± 1.4 vs 6.6 ± 1.9 days; $P < 0.0001$****) as was pain killer consumption, especially morphinics (0 vs 2.8 ± 1.5 days; $P < 0.001$***). The 1-year disease free and overall survival rates for OA and RALA were 92.8% and 100% respectively.

Conclusion**:** This study showed that RALA gave similar outcomes in terms of efficacy, OT and safety compared with OA. Moreover, RALA seems to lead to less painful surgical suites with a significative decrease of morphinics consumption, and shorter hospital stay than the OA.

ON13_SO / 11:55 – 12:00

DENYS DRASH SYNDROME IN CHILDREN: THE IMPACT OF WILMS TUMOUR ON OUTCOMES

Mathilde GLENISSON[1], Mathilde GRAPIN[1], BLANC Thomas[1], Véronique MINARD[2], Daniel ORBACH[3], Laurence HEIDET[1], Olivia BOYER[1], DORVAL Guillaume[1], Sabine SARNACKI[1]
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Abstract

Aim of the Study: Denys Drash syndrome (DDS) is caused by WT1 mutations and is associated with a high risk of Wilms tumour (WT) and diffuse mesangial sclerosis leading to end-stage renal disease (ESRD). Onset of disease is variable, and there is a wide clinical spectrum with a genotype to phenotype correlation. The aim of the study was to assess the impact of WT on the outcomes of children with DDS.

Methods: Patients with a mutation of WT1 in exons 8 or 9 were included between 2001 and 2020. Other mutations were excluded. Charts were reviewed retrospectively.

Main results: Thirty children were identified, 8 with a Wilm's tumor (WT+ group), and 22 without (WT- group). Median age at WT diagnosis was 15 months (IQR 11-20). Only one patient had a diagnosis of DDS preceding their diagnosis of WT. Patients in the WT+ group developed later ESRD at a median age of 1.5 years (IQR 1.2-7.4) versus 0.5 years (IQR 0.3-1) (p=0.01). Overall survival was better in the WT+ group (Log-rank: p=0.02). Median age at last follow-up was 7.3 years (IQR 0.8-10.7); 11.1 years (IQR 6.6-15.4) in the WT+ group and 4.5 years (IQR 0.4-8.8) in the WT- group.

Conclusions: Patients with DDS and WT have a later progression to ERSD and a better overall survival. In the WT- group, ERSD leads to a poor prognosis with excess mortality, which may relate to the morbidity of neonatal dialysis and complications linked to the of nephrotic syndrome.

13:30 - 14:30

Poster Presentation Session 16

Case Reports IV

(M2) Studio 1+2

Chair: Ophelia Aubert (GER)

Jozef Babala (SVK)

CR28_PO / 13:30 – 13:35

DOES THE PERSPECTIVE REALLY MATTER? CHALLENGES IN THE DIAGNOSIS OF CHRONIC GASTRIC VOLVULUS IN FOURTEEN-YEAR-OLD FEMALE PATIENT AFTER HEART TRANSPLANTATION.

Wojciech Rogula, Bartosz Bogusz, Joanna Godlewska, Wojciech Górecki
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Abstract

Aim of the study: Gastric volvulus is condition characterized by rotation of the stomach and may be acute or chronic. Rotation of the stomach causes complete or partial obstruction. Diagnostic evaluation is based upon radiologic investigations and endoscopic examination. The objective of this case report is to highlight this unusual condition to avoid incorrect diagnosis.

Case description: A fourteen-year-old female patient was presented to the hospital with gastrointestinal obstruction. The case was known in order to previous multiple hospital admissions due to recurrent abdominal pain associated with vomiting and diarrhea. She underwent orthotopic heart transplant in November 2010 due to congestive cardiomyopathy after cardiosurgical intervention for ventricular septal defect closure. Moreover, in 2020 the investigation revealed dissecting aneurysm of the aorta with concomitant stricture of celiac trunk which was subsequently managed by intravascular stent placement. Preliminary results of computed tomography of abdominal cavity were focused only on splanchnic blood flow and gastric dilation. However, after reassessment confirmed by subsequent gastroscopy, and initial diagnosis of gastric volvulus was made. The case was submitted for laparoscopic procedure and three-point gastropexy to the abdominal wall was made. Postoperative treatment was uneventful. Retrospective analysis of previous computed tomography examinations revealed not only the gastric dilation but the gastric volvulus as well.

Conclusions: Extremely complex and concomitant medical conditions and variability of presenting complaints contributed to delay of definitive surgical treatment for gastric volvulus. Thus, indispensable prerequisites for situational awareness are a sound knowledge of the anatomy and a thorough understanding of the gastric volvulus.

CR29_PO / 13:35 – 13:40

STERNAL OSTEOMYELITIS IN CHILDREN: CASE SERIES

Tunç Tiğli[1], İdil Rana User[1], Burak Ardiçli[1], Mithat Haliloğlu[2], İbrahim Karnak[1], Diclehan Orhan[3], Saniye Ekinci[1]
[1]Hacettepe University, Faculty of Medicine, Department of Pediatric Surgery, ANKARA, Turkey.
[2]Hacettepe University, Faculty of Medicine Department of Pediatric Radiology, ANKARA, Turkey.
[3]Hacettepe University, Faculty of Medicine Department of Pediatric Pathology, ANKARA, Turkey

Abstract

Aim of the Study: Sternal osteomyelitis forming cold abscess is a rare infection seen mostly in adult patients with history of cardiac surgery, thoracic trauma, or immunosuppression. Causative organism can be isolated in some cases and can be staphylococcus aureus, fungal or mycobacterium species.

Case description: We present case series of 4 infants diagnosed with sternal osteomyelitis without the history of trauma, surgery, or immunosuppression. All the patients were male and aged between 5-18 months. Presenting symptom was painless lump. Physical examination revealed painless hyperemic immobile nodule located over sternum. All patients had BCG vaccination and scars on their arms. Ultrasonography was the first imaging modality in all followed by magnetic resonance imaging and computed tomography to detect extension into soft tissue and mediastinum, associated bone, and pulmonary involvement. White blood cell count and acute phase reactants were not elevated. Surgical exploration revealed thick abscess wall adherent to sternal periosteum and muscles. We excised abscess wall, debride necrotic tissue, and sampled for microbiology. Pathology results showed granulomatous inflammation in 3 patients and mycobacterium tuberculosis was isolated in 2 of them. Other child had osteonecrosis, histiocytic inflammation, and acute osteomyelitis. Methicillin-resistant staphylococcus aureus was detected in pus aspirate. Patients were evaluated for immune deficiency syndromes but all were immunocompetent. Anti-tuberculosis treatment was used 6 months in 2 patients with microbiologically proven diagnosis. Other patients received 6 weeks intravenous antibiotic treatment.

Conclusions: Sternal osteomyelitis is a rare manifestation of tuberculosis. However, it is not the only causative agent. Surgery has a role in tissue sampling and debridement of infectious tissue.

CR30_PO / 13:40 – 13:45

SPONTANEOUS RUPTURE OF A TYPE 4A CHOLEDOCHAL CYST IN A 1-YEAR OLD INFANT: MANAGEMENT OF A RARE COMPLICATION

Jan Sabo[1], Ines Moraleda[1], Abdulla Sahloul[1], Simone Kathemann[2], Michael Berger[1]
[1]Pediatric Surgery Department, Essen, Germany. [2]Pediatric Gastroenterology Department, Essen, Germany

Abstract

Aim of the Study: Choledochal cysts are rare congenital malformations of the biliary tract. Typically, they become symptomatic at young age and diagnosis and therapy via resection are straight forward. One rare complication is spontaneous perforation. Here, we report a case of a 1-year-old infant with spontaneous perforation of the cystically transformed bile duct resulting in life-threatening pancreatitis and peritonitis.

Case description: The child was a previously healthy 1-year old girl transferred to our center with an unclear first episode of cholangitis. Abdominal ultrasound and laboratory analysis revealed a dilatation of the intrahepatic bile ducts mimicking Caroli disease (choledochal cyst type 5) with accompanying pancreatitis and increasing ascites over the following days. She was initially treated by antibiotics and subsequently underwent ascites puncture showing elevated pancreas enzymes. Due to clinical deterioration, she underwent surgical exploration and a large rupture of an extrahepatic choledochal cyst formation (type 4a) was found as the culprit. She underwent biliary-digestive anastomosis via roux-y-reconstruction. She is now 1 year out and well.

Conclusions: Spontaneous perforation of choledochus cyst is a rare but potentially life-threatening complication that needs to be detected and treated as soon as possible to prevent further complications and to preserve an adequate long-term outcome in these patients.

CR31_PO / 13:45 – 13:50

ILEAL ATRESIA AND TOTAL COLONIC HIRSCHSPRUNG DISEASE IN A 36-WEEK NEONATE: A CASE REPORT

Khashayar Atqiaee[1], Mehran Hiradfar[1], Mehdi Parvizi Mashhadi[1], Ali Samady Khanghah[2]
[1]Department of Pediatric Surgery, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran, Islamic Republic of. [2]Department of Surgery, Ardabil University of Medical Sciences, Ardabil, Iran, Islamic Republic of

Abstract

Aim of the Study: Introduction of a rare concurrency in a case of Ileal atresia with poor bowel function after the corrective operation

Case description: This report delineates a 36-week newborn with ileal atresia and total colonic Hirschsprung. A newborn male (birth weight,2500 grams) was referred to our unit because of failure of meconium passage during the first 48 hours after birth, abdominal distension, and bilious vomiting. Physical examination revealed a prominent abdomen and an empty rectum in digital rectal examination. Initial abdominopelvic radiography revealed Thumb-sized intestinal loops with no gas in the rectum. Intraoperative findings were Ileal atresia with a proximal dilated, blind-ending 1cm distal bud attached to the ileocecal region (Type IIIa). All parts of the large bowel were unused (Figure 1). Surgery was followed by an end-to-end ileo-ascending colonic anastomosis. Permanent Hematoxylin & Eosin pathological examination revealed the absence of ganglion cells in the cecum, the appendix, and the rectum and the abundance of ganglia in the ileum. The patient was a candidate for an ileostomy and colonic mucus fistula bypass because of the persistence of abdominal distention and no defecation on postoperative days, the final permanent pathology studies by calretinin test disclosed total aganglionic colon Hirschsprung. Swenson pull-through surgery with removal of the total colon and ileoanal anastomosis was performed on a three-month-old. The case tolerated oral feeding after five days.

Conclusions: Colonic aganglionosis should be in mind in any operated infant with a small intestinal atresia repair who continues to exhibit poor bowel function after corrective surgery

CR32_PO / 13:50 – 13:55

ABDOMINAL WALL DYSPLASIA: A RARE CASE OF CONGENITAL ABDOMINAL WALL HERNIA

Ahmed Hassan
Bns Specialized Hospital, Bani Sueif, Egypt

Abstract

Aim of the Study: Case description of abdominal wall dysplasia.

Case description: A preterm 28-week gestation boy was born to a 24-year-old healthy mother as a second sibling (the first was a healthy girl) with limited antenatal care. His birth weight was 1.9 Kg, he was admitted to our NICU because of RD 16 days later. Initial examination demonstrated a large skin-covered epigastric mass, measuring 4 × 4.5 cm, increasing in size with cry and bowel loops can be felt, moreover, the edge of the defect was easily palpable. Umbilical ring was normal in site and shape. Radiological evaluation showed lack of the abdominal wall musculature over the defect, with presence of well-defined sac, other abdominal and thoracic organs were normal. Surgical exploration was postponed until 3 months old allowing the boy to gain weight. Exploration revealed a hernial sac measuring 4 × 4.5 cm with a rim of surrounding fascia. There was no evidence of solid organ herniation. No bowel malrotation was detected. Fascial defect was approximated without tension and was closed primarily in an interrupted suture manner. The patient did well and was discharged home 3 days postoperatively. Fellow up continued for a year postoperative to confirm that no recurrence.

Conclusions: Abdominal wall dysplasia is caused by an increase in cell death by apoptosis in body wall placode, resulting in a thin abdominal wall. Finally, we conclude that this type of malformation, should be included in the differential diagnosis of abdominal wall defects.

CR33_PO / 13:55 – 14:00

LAPAROSCOPIC GASTRODUODENOSTOMY FOR PYLORIC STENOSIS DUE TO CORROSIVE INGESTION IN A TEN-YEAR-OLD BOY: A CASE REPORT

Merve Bülbül, Pari Khalilova, Fırat Serttürk, Ergun Ergun, Ahmet Murat Cakmak, Gulnur Gollu Bahadır
Ankara University, Faculty of Medicine, Department of Pediatric Surgery, Ankara, Turkey

Abstract

Aim of the study: Ingestion of corrosive substances in children is important medical problem and difficult to manage. Complications may occur due to corrosive ingestion; those should be followed throughout life and affect the quality of life. The most important long-term problem is the formation stricture. Although stricture often develops in the esophagus, stenosis may also develop in the pylorus. In this study, it was aimed to present the management of a patient who developed isolated pyloric stenosis due to corrosive substance inegestion.

Case description: A ten-year-old male patient was admitted to the emergency department due to corrosive substant ingestion. The child was observed and discharged on the 3rd day of hospitalization. Since oral mucosa and orophaarynx was damaged endoscopy was not performed to avoid further injury. The contrast study revealed normal esophageal lumen with slow gastric emptying. Endoscopic examination revealed stricture formation at the pylorus. It was decided to perform laparoscopic gastroduodenostomy. After suspending sutures were placed proximal to the pylorus and to anterior wall of duodenum. The stomach lumen was opened horizontally, and duodenum lumen was opened vertically. Diamond shape anastomosis was performed. Contrast study on the fifth postoperative day was normal. The child has been fed and discharged on the postoperative 8th day. Six months of follow up period was uneventful.

Conclusions: Laparoscopic gastroduodenostomy allows early enteral feeding without dumping symptoms in addition to the general advantages of minimally invasive surgery. Therefore, it may be preferred as a safe method in pyloric stenosis due to corrosive ingestion.

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CR34_PO / 14:00 – 14:05

RECTAL STENOSIS AND HIRSCHPRUNG DISEASE: A RARE ASSOCIATION

Elena Ruggiero[1,2], Elena Sofia Marcandella[1,2], Cinzia Zanatta[1], Ivana Cataldo[1], Paola Midrio[1,2]
[1]Ca' Foncello Hospital, Treviso, Italy. [2]University of Padua, Padua, Italy

Abstract

Aim of the Study: Rectal stenosis (RS) represents 1-2% of anorectal malformations (ARM). Hirschsprung disease (HD) is a rare intestinal malformation. We report a case of RS and HD association.

Case description: A 2 days-old infant boy was admitted due to vomiting and late meconium passage. During admission the symptoms spontaneously regressed, and the infant discharged. After a few days the patient was readmitted for vomiting. An upper gastrointestinal contrast study resulted normal, and a contrast enema showed rectal distension. To investigate HD, suction rectal biopsies were scheduled but the biopsy gun did not progress more than 3 cm from the anus. At a rectal examination RS was detected. Rectoscopy showed an annular SR and full thickness biopsies were taken proximal to the stenosis that confirmed HD. Magnetic resonance excluded sacral masses and vertebral anomalies. At 5 months of life the infant underwent surgery. Laparoscopic biopsy of the rectum-sigmoid confirmed aganglionosis and the rectum was mobilized below the peritoneal reflection. In prone position, the posterior rectal wall was dissected up to the stenosis, a circumferential mucosal dissection performed 1 cm above the dentate line and the colon pulled through. The anastomosis was performed between the proximal sigma and the anal canal anteriorly and between colon and skin posteriorly.

Conclusions: The co-occurrence of HD and RS has never been previously reported. Due to the characteristics of both malformations, it was possible to respect the anal canal only anteriorly and a standard colo-skin anastomosis was required along the posterior circumference.

CR35_PO / 14:05 – 14:10

A RARE SYNDROME ASSOCIATED WITH TOTAL COLONIC AGANGLIONOSIS: BRESHECK SYNDROME

Silvia Perin[1,2], Riccardo Guanà[1], Federico Scottoni[1], Luca Lonati[1], Salvo Garofalo[1], Fabrizio Gennari[1]
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Abstract

Aim of the Study: BRESEK/BRESHECK syndrome is a very rare multiple congenital malformation, firstly described in two half-brothers in 1997 by Reish. So far only six cases have been described, all in boys, confirming the original suspect of an X-linked origin, later demonstrated by the discovery of the causing mutation in MBTPS2 gene. Severe dysplastic kidney disease, leading to Potter sequence in utero, is the main cause of early death. We present here the case of a 9-years-old boy diagnosed at birth with BRESHECK syndrome with mutation c.1286G>A (p.Arg429His) on the MBTPS2 gene.

Case description: The patient was referred to our hospital for total colonic aganglionosis, subjected to total colectomy with ileostomy creation and subsequent stoma closure with ileo-anal anastomosis. The patient underwent bilateral orchidopexy, surgical correction of cleft palate and micrognathia, and has ichthyosis, atrichia, mental retardation, hypoplasia of the corpus callosum, ectasia of the subarachnoid spaces, lack of posterior closure of foramen magnum, dorso-lumbar kyphotic angulation, widening of the vertebral canal and cardiac anomalies. Failure to thrive has been one of his main clinical problems, requiring periodical nocturnal parenteral nutrition and mixed oral/nasogastric enteral nutrition. Gastrostomy was proposed but refused by parents. His current weight is 20kg (4th percentile, z-score 1.78). Moreover, periodical botulinum intra-sphincteric injections for anal sphincter hypertonus, daily nursing for frequent intestinal occlusions and periodic antibiotic therapy for Clostridium Difficile enteritis were required.

Conclusions: This patient represents one of the longest survivors of BRESHECK syndrome, possibly due to the absence of severe kidney disease.

CR36_PO / 14:10 – 14:15

SUPERIOR MESENTERIC ARTERY SYNDROME IN YOUNG GIRL WITH MASSIVE GASTRIC DILATATION

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Abstract

Aim of Study: Superior mesenteric artery (SMA) syndrome is a rare condition with an incidence ranging from 0.01% to 0.3%. Compression of the duodenum between the SMA anteriorly and the aorta posteriorly results in gastrointestinal obstruction. The onset of this pathology is usually associated with rapid weight loss or surgical intervention that distorts the anatomy. This case represents a SMA syndrome in young girl with no apparent risk factors.

Case description: A 12-year-old female was referred to the hospital due to abdominal pain, bilious vomiting, and abdominal distention; 3 liters of green fluid was drained from her stomach at the previous hospital. Primary abdominal ultrasound and contrast enhanced X-rays showed a severely dilated stomach full of fluid. Abdominal CT scans demonstrated a significant dilatation of stomach and duodenum up to the level of the third part, showing partial obstruction in the distal part of the duodenum before passing into the jejunum. The repeat ultrasound showed a narrowed aorto-mesenteric angle of 11-14 and revealed a diagnosis of superior mesenteric artery syndrome. The laparoscopic duodenojejunostomy was performed. The postoperative course was uneventful. At two months follow-up abdominal X-rays showed decreased gastric volume and normal bowel passage. The patient had no gastrointestinal complains.

Conclusions: SMA syndrome is a challenging diagnosis because of its rarity and overlap with other gastrointestinal conditions. It is important to keep in mind that in pediatric cases, SAM syndrome can occur in the absence of obvious risk factors and may be associated with growth spurt without weight loss.

CR37_PO / 14:15 – 14:20

RUPTURED ECHINOCOCCUS CYST OF THE LUNG. DESCRIPTION OF TWO CASES

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Abstract

Aim of the Study: Complications of pulmonary echinococcosis depend on whether the cyst has been raptured into the bronchus or pleural cavity. We aim to describe two cases of ruptured lung echinococcus (RLEC).

Cases description: 1) A 13-year-old girl was admitted to the pediatric department due to hemoptysis and a two-month cough. Lung X-ray revealed a large cyst in the the right lung. Diagnosis was confirmed serologically. Albendazole was administered for 3 weeks and elective surgery was planned. After a week she was readmitted to the hospital urgently due to RLEC. Through a thoracotomy, removal of the cyst and capitonnage of the residual cavity was performed. Due to multiple bronchial lacerations, which were sutured, the girl was hospitalized in the PICU. The patient was discharged after 14 days in excellent condition. 2) A 7-year-old boy was referred to our department due to a RLEC of the upper lobe of the left lung. He was receiving perioperatively10mg albendazole. A thoracotomy was performed and removal of the cyst and capitonnage of the residual cavity followed. The boy was discharged after 7 days in excellent condition. Both patients received anthelmintics for 6 months and remained asymptomatic, with no evidence of recurrence.

Conclusions: Adjunctive anthelmintic treatment, pre-, and post-operatively, reduces the risk of recurrence while reducing cyst tension. Anthelmintics are essential in disseminated disease and in high-risk patients. RLEC makes the operation particularly demanding, with surprises regarding the extent and severity of the communication with the bronchial tree.

CR38_PO / 14:20 – 14:25

CONGENITAL SEGMENTAL INTESTINAL DILATATION (CSID): A RARE CAUSE OF ABDOMINAL PAIN

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Abstract

Aim of the Study: Misdiagnosis in chronic abdominal pain can lead to significant morbidity. Our aim is to present the clinical case of a girl with 10 years of misdiagnosis due to recurrent abdominal pain, due to a congenital anomaly.

Case description: A thirteen-year-old girl presented to the outpatient clinic with a history of chronic abdominal pain that began at 3-yrs of age. Other symptoms included loss of appetite, asthenia, and changes in bowel movements (diarrhea/constipation). This situation resulted in school absenteeism and bullying. During multiple evaluations a myriad of diagnoses were made: cow-milk protein allergy, fructose and lactose intolerance, celiac disease and functional pain. Targeted treatments and diets were indicated but did little to improve symptoms. Prior to referral, a new work-up included an MRI which showed a Meckel's diverticulum, however, the 99Tc-pertechnetate scintygraphy was inconclusive. Gastroduodenoscopy and ileocolonoscopy were negative. After inconclusive findings, an abdominal laparoscopic exploration was performed. A highly dilated intestinal segment followed by a calibre decrease of around 30% was found. No intrinsic/extrinsic causes were identified. A 30 cm bowel resection and primary anastomosis were performed. Pathology showed severe bowel dilation (9cm) with a thin and ulcerated wall in approximately 28 cm followed by a 1.2 cm long calibre decrease. After a 3 month-follow-up, the patient's abdominal symptoms have improved.

Conclusions: CSID is an inconspicuous cause of abdominal pain, which can mimic different clinical entities and can significantly affect the quality of life of pediatric patients until surgically excised.

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CR39_PO / 14:25 – 14:30

Robotic duodenojejunostomy for idiopathic superior mesenteric artery syndrome: a rare case in pediatric surgery

Thibault Planchamp[1], Ichrak Belbahri[1], Soléne Joseph[1], Vincent Foulonneau[2], Olivier Abbo[1]
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Abstract

Aim of the Study**:** Superior mesenteric artery syndrome (SMAS), also known as Wilkie's syndrome, is a rare cause of proximal bowel obstruction, resulting from the compression of the third part of the duodenum by the superior mesenteric artery. Surgical treatment is required in case of failure of conservative management or in chronic cases. Often a consequence of hypercatabolism, severe malnutrition, anatomical predispositions, or after a surgery, it may be idiopathic which is the case of our patient.

Case presentation**:** We report the case of a 15-year-old girl with normal BMI, without previous medical history, admitted in our service for proximal bowel obstruction syndrome. An abdominal CT-scan discovered a SMAS, with an aortomesenteric angle of 17°, and distance of 4 mm. Diagnosis was confirmed by an upper gastrointestinal tract radiography. A medical management was first tried with a nasogastric tube and high caloric diet. Despite medical management, symptoms persisted. A robotic-assisted duodenojejunostomy (RADJ) was realized without intra- or post-operative complications. She felt immediate relief of her complaints and was discharged on post-operative day 4. No etiology was found. She continues to do well on 5-year follow-up.

Conclusions**:** This case report shows an idiopathic form of superior mesenteric artery syndrome that needed surgery. It highlights the necessity to think about that disease in front of a proximal bowel obstruction, even in a non-typical Wilkie's syndrome patient. Moreover, RADJ seems to be an effective and safe treatment for pediatric SAMS.

13:30 - 14:30

Poster Presentation Session 17

Case Reports V

(M2) Studio 1+2

Chair: Rim Kiblawi (GER)

Udo Rolle (GER)

CR40_PO / 13:30 – 13:35

SPONTANEOUS INFARCTION OF BREAST JUVENILE FIBROADENOMA: An EXTREMELY UNUSUAL CASE REPORT

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Abstract

Aim of the Study: Juvenile fibroadenomas are a rare variant of all fibroadenomas. Infarction of fibroadenomas is very rare. To our knowledge this is the third reported case of spontaneous hemorrhagic infarction of juvenile fibroadenoma without predisposing factors.

Case description: A 14-year-old girl presented to our clinic with a palpable mass in her left breast, which she noticed one week ago. On examination, a mass approximately 2 cm in diameter and approximately 2 cm lateral to the areola, was palpated in the upper outer quadrant of the left breast. Deformity, redness, and tenderness were not detected in the breast. The patient has no family history of breast cancer, trauma, use of oral contraceptives, or previous breast intervention. In the ultrasonography, the mass was reported as a heterogeneous hypoechoic solid mass BI-RADS3. The patient was followed up with USG control every 6 months. In the final ultrasonography performed 22 months after first application, the mass was evaluated as BI-RADS 4A. In the surgery, a crescent-shaped incision was made in the left half of the left breast areola, and the 3.4x2x1.7 cm mass was excised in one piece and sent for pathological examination.

Conclusions: To our knowledge, there are 2 previously reported cases of spontaneous hemorrhagic infarction in juvenile fibroadenoma in the literature. In this case, we operated the patient because of her ultrasonographic evaluation BI-RADS-3 to BI-RADS-4A. The patient did not have a predisposing factor in her anamnesis. The excisional biopsy result was reported as juvenile fibroadenoma with hemorrhagic infarction.

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CR41_PO / 13:35 – 13:40

APPROACH TO A CASE WITH 46XX POSTERIOR CLOACA

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Abstract

Aim of the study: Here, it is aimed to draw attention to the examination and surgical treatment of posterior cloaca, that is a rare and complex malformation associated with sexual development disorder.

Case Description: The baby was born with suspicious genitalia, persistent cloaca and abdominal distension and her mother (G4,P1,T1,A1) had been treated due to Covid-19 in pregnancy. Uterus didelphys, hydrometrocolpos and bilateral HUN were determined by prenatally. In examination of perineum, urogenital sinus was located above the rectoperineal fistular anus. Discharge was achieved with anal dilatation. Bilateral hydrocolpos drainages were made with tube vaginostomies, urachus was excised and bilateral suspected streak gonad were seen in postnatal second-day by laparotomy. Cromozomal analisis revealed 46,XX. In the third month, by cystoscopy due to recurrent left hydrocolpos, was seen that right vagina opened to the back at 1.5cm to urogenital sinus orifice. Left blind vagina was fenestrated to the right vagina by resectoscop. A sigmoid colostomy was performed in 5-month old due to frequent urinary infections. Total urogenital sinus mobilization, blind double uretral excision, and double vaginal fenesteration were performed with anterior sagittal urethro-vagino-anoplasty in 1-year old. Colostomy was closed tree-month later. Follow-up is uneventful for one-year.

Conclusions: Posterior cloacal malformations require detailed diagnostic radiologic investigations, meticulous clinical examination and appropriate surgical management after chromosomal analysis. The main goal of the operation should be to total urogenital mobilization and preserve the anal canal. However, the management of patients should be individualized according to the anatomical structure and clinical presentation of each patient.

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CR42_PO / 13:40 – 13:45

THE BENEFIT OF THE PLASTIC SURGEON IN THE MANAGEMENT OF A PUBESCENT GIRL BORN WITH CLOACAL EXSTROPHY - A CASE REPORT

Jan Trachta[1], Omar Zeinedine[1], Stepanka Stankova[2], Radim Kocvara[3], Michal Rygl[1]
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Abstract

Aim of the Study: To present a case report of a girl after previous cloacal exstrophy repair who underwent perineal and genital surgery by a plastic surgeon at the age of 14 years.

Case description: The girl was born with cloacal exstrophy and underwent abdominal wall closure with the reconstruction of her hemi-bladder plates and permanent colostomy after birth. The primary closure was performed without pelvic osteotomy. She suffered wound dehiscence of the reconstructed bladder after three unsuccessful attempts of its secondary closure due to extensive pubic bones diastasis. We performed a complete replacement of the bladder with an ileal neo-bladder and the Monti catheterisable channel at the age of 10 years. The girl became socially continent in urine. However, the bladder plate and two entries of her duplex vagina left open onto the perineum further bothered the girl with chronic irritation, pain, and bloody mucous discharge to her underwear. At the age of 14 years, the mucosa of the bladder plate was excised, and the plastic surgeon performed rotational and V-Y skin flaps to form labial skin folds. The surgery succeeded in hiding the vaginal entries deeper and out of friction from the underwear. The patient healed well, without the need for pelvic osteotomy that is normally required to bring the tissues closer in patients with cloacal exstrophy.

Conclusions: The life-long management of patients with cloacal exstrophy is very challenging. A multidisciplinary team approach is needed and should take advantage of the plastic surgeon expertise where appropriate.

CR43_PO / 13:45 – 13:50

A SIMPLE SOLUTION FOR THE UNEXPECTED, ABDOMINAL TUBERCULOSIS ABCESS CONFINED WITHIN THE GLISSON'S CAPSULE

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Abstract

Aim of the Study: Tuberculosis is a serious health problem which may present in unexpected forms of body involvement. Diagnosis and treatment require awareness in unusual anatomic presentations.

Case description: An adolescent boy was admitted with 5-6 cm soft but tender swelling on right upper abdominal wall, and weight loss for 3 months. The overlying skin looked normal, but upper abdomen was painful during palpation. His C-reactive protein was moderately high with mild leukocytosis and normal blood biochemistry. Abdominal USG revealed a cystic mass suggesting hydatid disease. Abdominal MRI revealed an 8x4x12 cm collection, resembling a shield covering the anterior wall of the liver, with multiple interconnecting abscesses extending into the liver tissue. Two additional tuberculous cavities and tree-in-bud image on chest CT were present. Wide-spectrum antibacterial treatment with metronidazole and albendazole was started. Percutaneous sample, obtained from a swelling, showed strong positivity for Entamoeba amebic antigen test. Further investigation revealed 3+ acid fast bacilli, positive PCR for tuberculosis and Mycobacterium tuberculosis isolated on culture. The collection was drained through two pigtail catheters, inserted under radiologic intervention. He was treated with 4 anti-tuberculous drugs (isoniazid, rifampicin, pyrazinamide, and ethambutol), which the isolate was susceptible to all of them. The patient is still under follow-up, collection free in control studies and in good health.

Conclusions: Treatment was effective through percutaneous sampling and drainage, sparing patient from unnecessary surgery. Indication for surgical intervention requires conservative approach, to limit possible complications due to delayed tissue healing, resulting from characteristic chronic inflammation in Tuberculosis.

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CR44_PO / 13:50 – 13:55

TREATMENT PROTOCOL PROBLEMS IN THE OVERALL PROGNOSIS OF SOLID PSEUDOPAPILLARYNEOPLASM OF THE PANCREAS (FRANTZ´S TUMOR).

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Abstract

Aim of the Study: Solid pseudopapillary neoplasm (SPN) of the pancreas is a rare entity with low malignant potential and excellent overall prognosis. It can appear in all population groups, even in children, being more frequent in females. Abdominal pain or mass is the most common presenting clinical feature. There is no chemotherapy treatment described for this tumor, but the surgical approach has very high successful rates. We present a clinical case in this regard.

Case description: A 10-year-old female is referred to us after radiological study of chronic abdominal pain. Ultrasound, CT and MRI describe a heterogeneous mass of 10 cm, depending on pancreatic tail. No other abnormalities were found. With high SPN diagnosis suspicion, she was operated using Warshaw technique. The only complication during surgery was the tumor rupture. After 2 years of follow up, new radiological studies have demonstrated some nodules affecting liver, pancreas head, peritoneum, and some other locations. The patient remains completely asymptomatic.

Conclusions: The follow up of the different lesions has shown that these nodules are growing up in size and number. The bibliography about these cases is very poor, with no evidence about the prognosis. It seems that the size, intraoperative rupture, and solid component are the main predictive factors of aggressive behavior. After reviewing the literature, the conclusion is to proceed with another surgical intervention to remove as many nodules as possible. The aim could be in understanding the immunohistochemical panel and get specific targets that would allow us to avoid surgery and its risks.

CR45_PO / 13:55 – 14:00

A RARE CASE OF NECROTIZING FASCIITIS AFTER EARLY INFANT MALE CIRCUMCISION

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Abstract

Aim of the Study: When circumcision is performed by experienced hands, has a low complication rate between 2% and 10% but under unsterile conditions, rare potentially lethal complications such as necrotizing fasciitis may occur, and it should be treated with immediate resuscitation, broad-spectrum antibiotics, and surgery.

Case description: We describe a 5-month-and-28-day-old infant who developed necrotizing fasciitis following Plastibell circumcision. Three days before admission, he had undergone ring circumcision. Two days later, his mother discovered him unwell, developing erythema, swelling in his genital area, and purulent discharge on his diaper. Because of the infant's agitation, his parents administered opioids and betamethasone ointment to relieve him of his symptoms. His condition on arrival was septic; he had a body temperature of 38 degrees Celsius. The scrotum was swollen in physical examination. The inflammation had spread to the adjacent tissues and the perineal region over the pubis symphysis (Figure 1). Excessive purulent discharge was noted on superficial palpation of the penis. In the laboratory, he had a WBC count of, 24700/mm3 (PMN: 50.4%). Considering necrosis as an indicator of the need for surgical debridement, the necrotic tissues were debrided in several days. Because of peripheral edema, the delayed primary closure was postponed until the peripheral edema subsided.

Conclusions: This report emphasizes that clinicians should use standard equipment and appropriate-sized rings to prevent these unusual complications following circumcision.

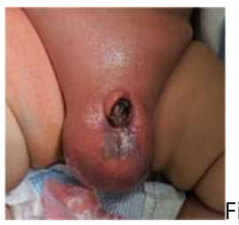
Figure 1: Three days after plastibell circumcision

CR46_PO / 14:00 – 14:05

WHERE IS THE SHUNT? MULTIDISCIPLINARY MANAGEMENT OF A PATIENT WITH CONGENITAL PULMONARY AIRWAY MALFORMATION (CPAM)

Alba María Hernández Pérez, Alejandro Encinas Goenechea, Irene Martínez Castaño, Patricia Deltell Colomer, Valentina Diaz Diaz, Carlos De la Sen Maldonado, Maria Gabriela Toro Rodríguez, Jerónimo Gonzálvez Piñera
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Abstract

Aim of the study: To describe the prenatal CPAM treatment with a thoracoamniotic shunt, its complication (migration) and postnatal care.

Case description: A newborn of 37+6weeks´ gestation and a birthweight of 3215g was assessed after an elective C-section. A prenatal diagnosis of right CPAM was made at 20 weeks-gestation. At the 29+1-week work-up polyhydramnios, heart failure and fetal hydrops were found. A thoracoamniotic shunt was inserted in the referral hospital. Subsequent ultrasounds and MRI (week 36) showed the catheter in a normal position and no signs of fetal hydrops. The physical examination at birth patented an absence of the thoracoamniotic shunt. The patient showed signs of progressive respiratory distress and hemodynamic instability, requiring advanced respiratory support. The chest CT findings included a macrocystic right lower lobe CPAM, which caused mediastinal shift and the thoracoamniotic shuntlodged in the right hemithorax. After initial respiratory support the patient presented further respiratory instability with hyperinflation of the cysts and greater deviation of the mediastinum. An intracystic chest tube was inserted into the largest cyst and an urgent right lower lobectomy was performed at 48 hours of life.

Conclusions: The thoracoamniotic shunt catheter allows pregnancy to carry on to term with hemodynamic stabilization and preventing fetal lung hypoplasia. However, it does not modify the characteristics of the lesion or its pathophysiology at birth and urgent care may be required if respiratory/ hemodynamic instability is encountered.

CR47_PO / 14:05 – 14:10

LYMPHATIC-SPARING LAPAROSCOPIC VARICOCELECTOMY AS AN ALTERNATIVE IN THE MANAGEMENT OF PEDIATRIC VARICOCELE

M.G Toro-Rodriguez, M. Dore, P. Deltell-Colomer, C. De-La-Sen-Maldonado, V. Diaz-Diaz, A. Hernández-Hernández, A. Encinas-Goenechea, J. Gonzalvez-Piñera
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Abstract

Aim of the Study: Laparoscopic treatment of varicocele in children is controversial due to high rates of postoperative hydrocele. Our aim is to describe the use of isosulfan-blue dye-assisted lymphatic-sparing laparoscopic varicocelectomy (IBLSLV) as an alternative when other treatment options are not feasible.

Case description: A review of the medical records of two patients with varicocele that underwent IBLSLV was performed. Isosulfan-blue (IB) was used to stain lymphatic vessels in order to spare them during the surgical procedure. After anesthetic induction and prior to trocar placement, a 20% IB solution was injected intradartoic(1.5cc) and intraparenchymal(1cc). Spermatic vessels were ligated but at least 2 lymphatic vessels were spared. Case1: 12 yr-old with grade-III, asymptomatic, left varicocele. Doppler-ultrasound showed venous dilation and reflux, and testicular volume difference (TVD) of 25%. After 1 year, TVD worsened to 40%. Embolization was not feasible due to technical difficulties, thus a IBLSLV was performed. At one-year follow-up-control, the patient is asymptomatic, without signs of varicocele or hydrocele, and without progression of TVD. Case2: 10 yr-old with grade-III, painful, left varicocele without relevant TVD. Spermatic vein embolization was performed. After six months, the patient presented recurrent scrotal pain requiring multiple visits to the ER. Ultrasound findings showed signs of recurrence, thus a IBLSLV was performed at 13 years of age. A year later, the patient is asymptomatic, without signs of varicocele or hydrocele.

Conclusions: Our initial experience shows that IBLSLV is safe and feasible as an alternative in pediatric varicocele treatment in selected cases.

CR48_PO / 14:10 – 14:15

CHILDHOOD MONOPHASIC SYNOVIAL SARCOMA OF THE CHEST WALL

Fatma BCHINI[1], Cyrine SAADI[1], Malek Boughdir[1], Hajer Ben Mansour[2], Aida DAIB[1], Asma JABLOUN[1], Fatma TRABESLI[1], Rabiaa BENABDALLAH[1], Nesrine CHRAIET[2], Youssef GHARBI[1], Youssef HELLAL[1], Amel MEZLINI[2], Nejib KAABAR[1]
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Abstract

Aim of the study: Synovial sarcoma is a distinct subtype of soft tissue sarcomas. It arises in the para-articular regions, mainly in the tendons and less frequently in the fascial structures and ligaments. Thoracic synovial sarcoma is rarer than its extra thoracic counterpart and may arise in the chest wall, pleura, mediastinum, heart, or lung. Long history of symptoms and heterogeneous clinical presentation sometimes delays diagnosis. In this report we describe a rare case of synovial sarcoma of the chest wall in a child.

Case description: A 12-year-old boy presented to our pediatric surgery department with chief complaint of swelling accompanied by slight pain of the upper right side of the anterior chest wall since approximately 5 months. Firstly, we performed an ultrasound-mass biopsy. Histopathological examination showed fibromatosis. Following that, we underwent surgical resection. Pathological examination revealed a monophasic synovial sarcoma. Post-operatively, the patient presented a loss of the extension of the fingers on the right hand. We conducted six cycles of adjuvant chemotherapy with Adriamycin/Ifosfamide. We administered, also, radiotherapy (total 54 Gy with a boost of 61Gy which allowed a better local control). Actually, following plastic surgery, the boy's finger extension has been restored. There is no evidence of recurrence with a follow up of 4 years. However, careful observation may be required.

Conclusions: We have reported our experience with a rare case of monophasic-type synovial sarcoma from the chest wall. This pathology requires multidisciplinary management. Radical surgery, if feasible and not mutilating, seems to improve prognosis.

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CR49_PO / 14:15 – 14:20

BILATERAL OVARIAN DYSGERMINOMA IN A PREPUBERTAL CHILD PRESENTING WITH THE COMPLAINT OF ACUTE ABDOMEN

Fatma ÖZCAN SIKI[1], Mehmet SARIKAYA[1], Tamer SEKMENLİ[1], Metin GÜNDÜZ[1], Yavuz KOKSAL[2], İlhan ÇİFTCİ[1]
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Abstract

Aim of the Study: Ovarian tumors in children constitute approximately 1% of all childhood tumors, and germ cell tumors constitute an important part of this. Dysgerminomas are among the most common types. We present a 10-year-old female patient who was an acute abdomen and was operated on for bilateral dysgerminoma with unilateral ovary torsion.

Case description: 10-year-old female patient; She applied with the complaint of vomiting after sudden onset of abdominal pain. She did not have any additional disease and her blood tests were normal. Both ovaries could not be seen and a 5x5 cm mass was observed in the pelvic region in the abdominal ultrasonography. The patient underwent an operation. It was observed that there was mass in both ovaries and the right ovary was torsioned. In the frozen pathology taken during the operation, it was confirmed that there was bilateral dysgerminoma and no ovarian tissue in both ovaries. The patient underwent bilateral salpingo-oophorectomy.

Conclusıons: The primary pathology in patients with ovarian torsion in the prepubertal period may be ovarian tumor. The contralateral ovary must be checked.

Keywords: ovarian tumors, children, ovarian torsion, bilateral dysgerminoma

CR50_PO / 14:20 – 14:25

HUMAN TAIL: A RARE CASE OF OCCULT SPINAL DYSRAPHISM

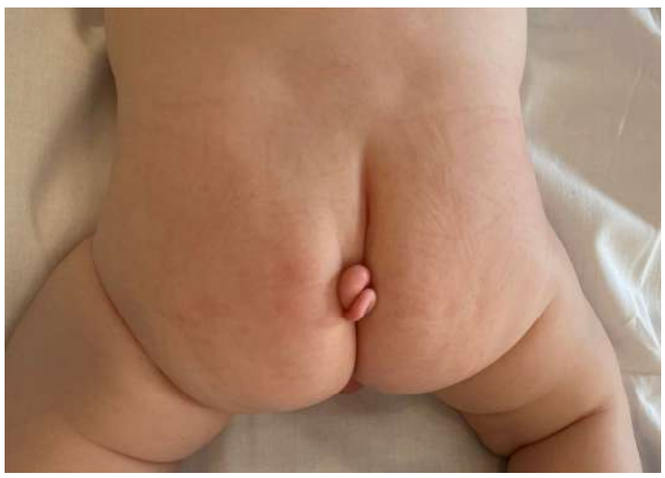
Ugnė Krunkaitytė, Gabrielė Ūbaitė, Arvydas Palepšaitis, Dalius Malcius
The Hospital of Lithuanian University of Health Sciences Kauno klinikos, Kaunas, Lithuania

Abstract

Aim of the Study: To present a case report of a human tail in an infant administered to our hospital and to review existing data about this rare anomaly.

Case description: A 2-month-old male infant was presented to an outpatient setting because of ,the tail'seen in the lumbosacral region since birth. The patient was a term infant and had no history of trauma, previous surgeries, and no allergies. During the examination upon arrival, the mass was seen as a solid, homogeneous, 4-5 cm long, spiral-shaped tubular skin growth in the midline just above the intergluteal cleft without any bony structures. For a detailed examination, an MRI was performed which confirmed that the mass seems to be a rudimentary tail with no connection with the spinal canal. Finally, the boy underwent surgery. The mass was removed at its base by simply tying it up and cutting it off with electrocautery. The removed mass was later sent for a histopathological examination which revealed it consisted of skin and adipose tissue, with no muscle or nerve fibers detected. The surgical wound healed in a primary manner with no postoperative complications observed.

Conclusions: Since the human tail is a rare congenital anomaly an up-close physical and radiological examination is essential in order to rule out other possible occult spinal dysraphisms and to decide on proper management.



CR51_PO / 14:25 – 14:30

MULTIDISCIPLINARY MANAGEMENT OF FOCAL CONGENITAL HYPERINSULINISM

Begum Pisiren[1], Ozlem Boybeyi[1], Onur Gozmen[2], Meliha Pinar Cengiz[2], Murat Tuncel[3], Tutku Soyer[1], Hüseyin Demirbilek[2]
[1]Hacettepe University, Faculty of Medicine, Department of Pediatric Surgery, Ankara, Turkey. [2]Hacettepe University, Faculty of Medicine, Department of Pediatric Endocrinology, Ankara, Turkey. [3]Hacettepe University, Faculty of Medicine, Department of Nuclear Medicine, Ankara, Turkey

Abstract

Aim of the Study: We present two cases with focal congenital hyperinsulinism CHI to discuss the importance of multidisciplinary management.

Case description: The first case was 5-month-old boy with CHI due to paternally inherited heterozygous ABCC8 gene mutation. The 18F-DOPA PET/CT imaging revealed intense focal radioactivity at anterior of pancreatic head-body junction. At surgical exploration, a lesion that was 0.5 cm in diameter and slightly reddish in color was found at the defined location. The lesion excised with a clear margin and diagnosed as focal islet cell hyperplasia histopathologically. The second case was a 7-month-old girl with CHI due to paternally inherited heterozygous ABCC8 gene mutation. The 18F-DOPA PET/CT imaging revealed intense focal radioactivity at the tail of pancreas. Surgical exploration revealed a lesion localized at the deep tissue of tail of the pancreas palpated slightly firmer than normal pancreas tissue. Since the lesion was at the lateral end of the tail, it was excised together with the tail of pancreas. The diagnosis was confirmed as focal islet cell hyperplasia histopathologically. Both patients did not experience any surgical complication and are being followed-up without any medication with normal blood glucose and age-appropriate fasting tolerance.

Conclusions: The diagnosis of focal CHI is very crucial since it is the surgically curable form of CHI. The genetic analysis and 18F-DOPA PET/CT imaging study have important role in diagnosis and avoids unnecessary sub-total/near-total pancreatectomy and its complications. The surgical excision of the focal lesion is an effective way of management in focal CHI.

13:30 - 14:30

Poster Presentation Session 18

Child Abuse Prevention / Trauma

(M2) Studio 1+2

Chair: Elke Zani-Ruttenstock (CAN)

Tamas Kovacs (HUN)

CA01_PO / 13:30 – 13:35

DUODENO-JEJUNAL PERFORATION DUE TO BLUNT ABDOMINAL TRAUMA IN A 6-YEAR-OLD CHILD VICTIM OF ABUSE.

Michela Addeo[1,2], Emanuele Trovalusci[1,2], Riccardo Guanà[1], Federico Scottoni[1], Carola Marchetti[1], Fabrizio Gennari[1]
[1]Regina Margherita Children's hospital, Torino, Italy. [2]Department of Women's and Children's Health, Padova, Italy

Abstract

Aim of the study: Here reported a pediatric case of traumatic intestinal perforation caused by blunt abdominal-vertebral trauma due to family violence, to focus on the optimal management of this kind of event.

Case description: A 6-year-old male patient was admitted to our hospital for critical clinical conditions after a reported fall from the stairs.At the admission the patient was unconscious (pGCS of 8), so a CT-scan was performed with a finding of hemoperitoneum and pneumoperitoneum.An emergency laparotomy was executed, with an intraoperative finding of ischemia due to mesenteric laceration and multiple perforations of the third and fourth duodenal portions and the first 25 cm of the proximal jejunum.A resection of the necrotic sections and a side-to-side duodeno-jejunal anastomosis were performed.The postoperative period was regular, but due to an initial rejection of oral feeding, enteral feeding was administered for 4 weeks through a naso-jejunal tube before complete weaning from it.Then the patient was discharged, after 6 weeks of hospitalisation.Since the initial clinical conditions and the intraoperative finding were not consistent with the history reported by the mother, a more in-depth analysis of the dynamic of the accident and the family situation was performed with the help of a pediatric psychologist.A history of physical and psychological violence perpetrated by the stepfather was found out at the end.

Conclusions: Severe traumas in children should always be analysed in depth and with a multidisciplinary approach, especially in case of atypical clinical presentations, to prevent the possibility of overlooking a situation of domestic violence.

CA02_PO / 13:35 – 13:40

PAY ATTENTION TO THE SOCIAL ASPECTS OF CHILD BURNS

Sabriye DAYI[1], Özdecan BEZİRCİ ÖDEK[2], Beyza DEDE[2], selenay iscimen[2], Selma Beyeç[2], Kübra Yılmaz[3], Hakan Gül[3], İsmail Güngör[3], Meryem Anayurt[2], Serpil SANCAR[3]
[1]University of Health Sciences, Bursa City Hospital, Bursa, Turkey. [2]Bursa City Hospital, Bursa, Turkey.
[3]University of Health Sciences Bursa City Hospital, Bursa, Turkey

Abstract

Aim of the Study: In treating child burns, the medical and social teams work together to maximize the child's best interests. This study aims to reveal the results we obtained, which we consulted with the social workers in our burn center, how preventive studies can be carried out, to determine the areas that can be helped socially in child burns, and to reveal the social aspects of child burns.

Methods: We retrospectively analyzed patients who were consulted with a social worker in the last one-year period in our burn center.

Main results: In 72 (26 girls; 46 boys) of 208 children hospitalized in our burn center in the last year to better reveal the family's social status, suspicious findings with a history of burns, possible causes of child abuse, and neglect were consulted. The percentage of burns was between 0.5% and 56.5%, with 26 requiring grafts. Two children consulted with Social Services and were given counseling, educational support for three children, five health support, two social and economic support, and one identity card. One child was also taken from her family and taken into custody. However, it was learned that the results of 32 consultations with social workers could not be followed.

Conclusions: The importance of social services is better understood day by day.Positive steps include planning preventive work in child burns and implementing protective decisions for events that may cost the child's life beyond burn treatment. Inter-institutional communication should be faster and more professional, which will mean more help to these children.

CA03_PO / 13:40 – 13:45

NON-ACCIDENTAL TRAUMA: TIGHTROPE WALK BETWEEN OVER- AND UNDER-ESTIMATION

Evangelia Gkougkoudi[1], Christos Minas[2], Zacharias Zachariou[1,2]
[1]Medical School University of Cyprus, Nicosia, Cyprus. [2]Childrens Hospital NAM III, Nicosia, Cyprus

Abstract

Aim of the Study: Pediatricians and/or Pediatric Surgeons are the primary care givers who will first suspect or recognize child abuse. We report on a case of an "overzealous" specialist, who wrongly accused the father as perpetrator.

Case description: 5-month-old girl, daughter of immigrants, was presented with excoriations around the genital region. The senior pediatric surgeon who examined the child immediately diagnosed sexual abuse and informed the police and the press making the following statement and even mentioning personal data of the family: "This is a shocking and a tragic incident where a girl of only 5 months has been sexually abused having signs of rape. In my 32-year career, this is the first time I have seen something like this". The police arrested the father who was kept in custody for 72 hours, until sexual abuse was ruled out after forensic examinations. The trauma was a result of primarily diaper rash that extended to the genital region.

Conclusions: Detection of sexual abuse in neonates and infants remains a difficult challenge, even for well-trained, experienced Pediatric Surgeons, leaving many abused infants unreported. On the other hand, over-reaction in cases of suspected sexual abuse may cause irreparable disruption in the family structure. It is important for Pediatric Surgeons to be aware of the clinical findings, have self-confidence, knowledge, and awareness for recognizing, diagnosing, and reporting cases of sexual abuse being the main features for prevention of further abuse keeping in mind the welfare of the child and the family.

CA04_PO / 13:45 – 13:50

Burn mechanism, severity and surface area in pediatrics: A retrospective study among immigrants and Turks in a burn center.

Begüm Sönmez, İncinur Genişol Ataman, Kamer Polatdemir
Dr.Behcet Uz Child Disease and Pediatric Surgery Training and Research Hospital, izmir, Turkey

Abstract

Aim of the Study: This study was aimed to determine the typical demographic characteristics and injury data of pediatric burn patients hospitalized in our hospital and to investigate whether the incidence of severe burns is higher in immigrants.

Methods: We retrospectively evaluated 226 hospitalized patients in our pediatric burn center in 2022. The demographic data of the patients, being Turkish or immigrant, burn mechanism, severity, surface area, length of stay, day of debridement and/or grafting were included in the study. The data of Turks and immigrants were compared. Chi-square test for comparing the difference between two independent categories, and the Mann Whitney U test for numerical comparisons were used.

Main results: 144(63.7%) of 226 patients were male. The mean age was 47.57±51.02 months. 42(18.6%) patients were immigrants. The most common burn mechanism is by hot water (n:154, 68.1%). There was no significant difference between the burn severity of the patients(p=0.554). The mean total burn surface area of all patients was 10.55±7.60%. There was no significant difference between the mean age of Turks and immigrants (47.70±50.04 months versus 46.97±51.54 months, p=0.965) and hospital stay (12.20±14.64 days versus 12.90±11.45 days, p=0.205). 55(24.3%) of the patients were debrided, 53(23.5%) were grafted. No significant difference was found in requirement of debridement(p=0.478) and graft(p=0.385) between groups.

Conclusions: When we compared immigrants with Turks, we found similar results. Multicenter studies are needed to show the differences between these groups.

TR01_PO / 13:50 – 13:55

MECHANISMS, MANAGEMENT, AND OUTCOMES OF LOW- VERSUS HIGH-VOLTAGE ELECTRICAL INJURIES: AN INTERNATIONAL REGISTRY STUDY

Betül Günal[1], Philipp Mildenberger[2], Oliver Muensterer[1,3]
[1]Department of Pediatric Surgery, Johannes-Gutenberg-University Mainz, Mainz, Germany. [2]Institut für Medizinische Biometrie, Epidemiologie und Informatik, Johannes-Gutenberg-University Mainz, Mainz, Germany. [3]Department of Pediatric Surgery, Dr. von Hauner Children's Hospital, LMU Medical Center, Munich, Germany

Abstract

Aim of the Study: Electrical burns are associated with substantial morbidity, but research on this subject is scarce. This study characterizes the mechanisms, patterns, extent, and outcome of low- versus high-voltage electrical injuries and identifies particular implications for the pediatric age group.

Methods: We performed a retrospective analysis of an international registry (DGV Dataset Number 2019-01) from 2015 through 2018, identifying patients who suffered electrical burns. Demographics, mechanism of injury, total burn surface area (TBSA), location and depth, hospital stay, complications and mortality rate were extracted. Mann-Whitney and Fisher's exact tests were used to compare mechanisms and age ranges. Significance was defined as $p<0.05$.

Main results: A total of 215 patients (86.5% male) were identified, including 42 children. Victims of high-voltage compared to low-voltage burns suffered more extensive burns (35% vs. 2%TBSA, $p<0.001$), more complications (67% vs. 6%, $p<0.001$), higher mortality (15% vs. 0%, $p<0.001$), had longer hospital stay (47 vs. 10 days, $p<0.001$), and underwent more operations (5.79 vs. 1.68, $p<0.001$). High-voltage burns were more extensive in children compared to adults (51% vs. 33%TBSA, $p<0.01$), and led to more disability. Ominous factors for mortality on multivariate analysis were hypothermia on admission (1°C decrease of body temperature increased mortality x1.4), higher TBSA, deeper burns, and arc mechanism.

Conclusions: High-voltage electrical injuries in children are associated with significantly higher total burn surface area than in adults. Physiologic, physical, and size differences may explain these findings. Hypothermia should be avoided after electrical burn injury because it is a strong predictor of mortality, particularly in pediatrics.

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TR02_PO / 13:55 – 14:00

FRACTIONAL CO2 LASER THERAPY IN CHILDREN WITH PATHOLOGICAL SCARS REFRACTORY TO OTHER TREATMENTS

Miriam Miguel-Ferrero[1], Carlos Delgado-Miguel[1,2], Ricardo Mejía[1], Arturo Almeyda[1], Paloma Triana[1], Mercedes Díaz[1], Juan Carlos López-Gutiérrez[1]
[1]La Paz Children´s Hospital, Madrid, Spain. [2]Fundación Jiménez Díaz University Hospital, Madrid, Spain

Abstract

Aim of the Study: Pathological scars cause high morbidity and require complex treatments. Although fractional CO2 laser therapy (FCO2LT) has proven its efficacy for the treatment of pathological scars (PS) when other treatments have failed, it has not yet been widely adopted in children. We present our preliminary results with FCO2LT in children with PS refractory to other treatments.

Methods: we present a prospective study (may-december 2022) in children undergoing FCO2LT of PS where other treament modalities had failed. We recorded demographic and clinical variables and adverse events. Scars were assesed before each treatment and 3months afterwards using the Patient and Observer Scar Assesement Scale (POSAS) and the Vancouver Scar Scale (VSS).

Main results: Eighteen children (10boys/8girls; median age: 12years) underwent 22 laser sessions. PS were due to: burns (13), traumatic injuries (3) and surgeries (2). Fourteen patients presented with hypertrophic scars, of whom 9had also contractures and 1patient had an atrophic scar. All patients had received previous treatment with pressure garmentes, corticosteroids infiltration or surgery. Both total POSAS (85.3±12.5 to 75.7±15.4; P<0.001) and VSS (-2.99,95%CI: -4.30, -2.18; P<0.001) after one treatment, with further improvement in 4patients which two sessions. FCO2LT was very well tolerated with scarce adverse events (mild pain, pruritus and erythema).

Conclusions: FCO2LT in children enables objective and statistically significant improvent of PS when other treatments have failed. In the future, FCO2LT should be considered as a first-line option in the treament of pediatric scars, as opposed to more agressive invasive therapies or less effective conservative treatments.

TR03_PO / 14:00 – 14:05

INHALATION INJURY IN CHILDREN; EXPERIENCE OF AT TERTIARY PEDIATRIC BURN CENTER

Fahri Akkaya[1], Sabri Demir[1], Süleyman Arif Bostancı[2], Can Ihsan Oztorun[3], Elif Emel Erten[2], Muhammed Necmi Gürel[1], Vildan Selin Çayhan[2], Ahmet Ertürk[3], Müjdem Nur Azılı[3], Emrah Şenel[3]
[1]Universiy of Health Science Ankara Bilkent City Hospital, Pediatric Burn Center, Department of Pediatric Surgery, ANKARA, Turkey. [2]Ankara City Hospital,Department of Pediatric Surgery, ANKARA, Turkey. [3]Ankara Yıldırım Beyazıt University, School of Medicine, Department of Pediatric Surgery, ANKARA, Turkey

Abstract

Aim of the study: We aimed to share our clinical data and experiences of children with inhalation injuries treated at our pediatric burn center.

Methods: The records of the patients who were treated in our pediatric burn center due to inhalation injury between 2009 and 2022 were reviewed retrospectively. Their data were compared with patients without inhalation injury. The diagnosis was made by performing bronchoscopy. P<0.05 was considered significant.

Main results: Inhalation injury was detected in 105 of 2191 patients (4.8%) hospitalized in our pediatric burn center. It was mostly caused by flame burns (%93.3) There was no difference between patients with and without inhalation injury in terms of gender (67.6% versus 60.9%, p=0.167). Patients with inhalation injury had a longer length-of-stay at PBC (40.9 vs.15.9 days; p<0.001), and greater total burned surface areas (38.5% vs. 16.4%, p<0.001). They were followed up as intubated for an average of 5.6 days. More skin grafts (70.5% vs. 32.3%, p<0.001), and amputations were performed in inhalation injury group (16.2% vs. %1.6, p<0.001). Sixty-six patients (62.9%) were Turkish citizens, while 39(37.1%) were refugees. It was seen more in refugees (12.6% vs. 3.5%, p<0.001). The mortality rate was higher in inhalation injury group (25.7% vs 1.6%; p<0.01).

Conclusion: Although inhalation injuries are seen in a minority of hospitalized patients, it has higher morbidity and mortality. Therefore, in all suspected patients, the diagnosis should be confirmed by bronchoscopy. They should be treated in centers that have sufficient experience in this regard.

TR04_PO / 14:05 – 14:10

THE IMPACT OF CORRECTNESS OF FIRST AID GIVEN TO CHILDREN WITH BURNS ON CHOSEN PARAMETERS OF BURNS

AGATA KAWALEC
Opole University, Opole, Poland

Abstract

Aim of the Study: To assess the impact of correctness of first aid given to the children with burns on chosen parameters of burns.

Methods: The survey was conducted among 200 caregivers of children hospitalized due to burn injuries in 5 Polish hospitals. The correctness of given first aid was assessed individually in each case. The data about the surface of burn, burn depth, treatment, duration of hospitalization were collected from medical documentation. Statistical analysis was performed using Statistica v.12. Ethics approval was obtained from the Bioethical Committee of Wroclaw Medical University.

Main results: First aid was given by the person who was present at the moment of the injury (in 67% by the mother). Ambulance was called in 61.5% cases, more often to younger children ($p<0.05$). The common mistakes were lack of cooling the burn wound with running water, lack of admission of analgesics, applying different substances to the burn wound (vodka, milk, eggs). The ambulance was called to 61.5% of burned children, only 19.5% of them received analgesics before arrival to the hospital. Parents with higher education gave correct first aid more often than parents with primary education ($p>0,05$). Children who did not receive correct burn wound cooling more often suffered from full-thickness burns than children who received correct burn wound cooling ($p>0.05$), more often required surgical treatment ($p>0.05$) and longer hospitalization ($p<0.05$).

Conclusions: The improvement of the quality of first aid given to children with burns could reduce the children's suffering and the costs of treatment.

TR05_PO / 14:10 – 14:14

THE SHAME OF HUMANITY; REFUGEES/ASYLUM SEEKER CHILDREN BURNS

Sabri Demir[1], Fahri Akkaya[1], Arif Süleyman[2], Elif Emel Erten[2], Can Ihsan Oztorun[3], Ahmet Ertürk[3], Nur Sezen Parlak[1], Vildan Selin Çayhan[4], Müjdem Nur Azılı[3], Emrah Şenel[3]
[1]Universiy of Health Science Ankara Bilkent City Hospital, Pediatric Burn Center ,Department of Pediatric Surgery, Ankara, Turkey. [2]Ankara City Hospital, Department of Pediatric Surgery, Ankara, Turkey. [3]Ankara Yıldırım Beyazıt University,Scholl of Medicine ,Department of Pediatric Surgery, Ankara, Turkey. [4]Ankara City Hospital, Department of Pediatric Surgery, Ankara, Turkey

Abstract

Aim of the study: We aimed to share our data about burns of refugees seeker children who had to leave their homes due to the civil war, treated in our pediatric-burn-center(PBC).

Methods: Children who lived in refugee camps in their own countries, and who were under the status of asylum seeker/refugee in Turkey, were treated in our PBC were included. Demographic and clinical data were evaluated retrospectively and compared with Turkish patients. P<0.05 was considered significant.

Main results: Between 01 January 2011 and 31 December 2022, 1872 burned-children treated. Of these, 315 (16.8%) were refugees seekers. Their length-of-stay at PBC was longer than Turkish (25.2 vs. 15.6 days, P<0.001), total-burned-body-surface-area was bigger (19.6 vs 14.0%, P<0.001), the incidence of fire/flame burns was higher (32.7% vs. %18.0, P<0.001), and grafting rates were higher (46.3% vs. 32.4%, P<0.001). The mortality rate of refugees/asylum seekers was four-times higher (7.9% versus 2.2%, P<0.001). Of these, 78.8% were Syrian, 9.2% Iraqi, 8.0% Afghan, and 1.6% Somalian. Refugees/asylum seeker victims were injured mostly in the winter-months and by the flame burns caused by fuel-stove used for heating in refugee camps. The second most common cause was the fires caused by other reasons in the tents/barracks, followed by bomb explosions.

Conclusions: Refugees escaping from the war live in terrible conditions in the camps.Fuel-stoves and related fires are the most common cause of burns in refugee camps. Therefore, international organizations should find a solution to the heating in camps other than fuel-stoves.

TR06_PO / 14:14 – 14:18

THE EFFECT OF BUN/ALBUMIN RATIO IN EVALUATING MORTALITY IN 20% OR MORE PEDIATRIC BURN PATIENTS

Ayse Demet Payza, Asya Eylem Boztas Demir, Akgun Oral
Health Sciences University, Dr. Behcet Uz Pediatric Diseases And Surgery Training And Research Hospital, Izmir, Turkey

Abstract

Aim of the Study: The aim of this study is to evaluate the predictive value in terms of predicting bun/albumin ratio and in-hospital mortality in pediatric burn patients of 20% or more total body surface area (TBSA).

Methods: Datas of 219 patients who were hospitalized with %20 or above of TBSA burns in our pediatric burn unit in the last five years were reviewed retrospectively. Patients were analyzed for demographic information and basic clinical data, cause of burn, need for an operation, follow-up period. BUN and albumin values measured at the time of admission to the hospital were used to calculate the BUN/albumin ratio. Datas were evaluated for in-hospital mortality.

Main results: 37% of patients were female and 63% of them were male. Median age was 4 years (1-6years). Overall mortality rate was 4.5%. The median albumin level of the deceased was lower than that of the survivors (2,1 and 3,8 g/L respectively, $p<0,05$). There was no statistically significant difference between the median BUN levels of the deceased and the survivors ($p>0,05$). The median BUN/albumin ratio of the deceased was higher than the survivors (5,27-3,41 respectively, $p=0,009$).

Conclusion: Hypoalbuminemia detected during first hospitalization in the burn unit is associated with mortality in patients with 20% or more burn areas. High BUN/albumin ratio is also a statistically significant predictor of in-hospital mortality in these patients.

TR07_PO / 14:18 – 14:22

Electronic checklist improving accuracy of the tertiary trauma survey: initial experience in a major paediatric trauma centre in the UK.

Azam Ali Baig, Hetal Patel, Ingo Jester
Birmingham Women's and Children's Hospital, Birmingham, United Kingdom

Abstract

Aim of the Study: Tertiary survey is a necessary component to diagnose non-life-threatening injuries in trauma patients. We noted in our centre a discrepancy in the method of conducting and documenting tertiary surveys between clinicians. The study's aim was to improve consistency, accuracy, and compliance in performing and documenting tertiary surveys.

Methods: Over a one-year period, a questionnaire assessed junior clinician's knowledge and comfortability with the principle of a tertiary survey. A mandatory electronic tertiary survey checklist was created and implemented for all trauma admissions using a binary checklist with further clinical questions prompted after an initial affirmative response. Clinicians' confidence and accuracy was reevaluated with a questionnaire after one month.

Main results: In the first cycle, half of the clinicians did not know what a tertiary survey was and one third knew when to perform one. In the second cycle, compliance was recorded at 100%. Results from reevaluation revealed that all clinicians knew what a tertiary survey was and where to find the electronic checklist; 66% of clinicians deemed themselves as competent performing a tertiary survey and 88% of clinicians deemed themselves as competent documenting their findings.

Conclusion: Tertiary surveys are an integral part in the management of paediatric trauma. Various published aide-memoirs exist; however, they are not practical to be introduced in daily workflows. Our experience demonstrates that the integration of a checklist in electronic patient records can improve accuracy of the tertiary survey which should consequently improve outcome of trauma patients.

TR08_PO / 14:22 – 14:26

DEVELOPMENT OF SIMPLE MORTALITY PREDICTING SCORE IN PEDIATRIC TRAUMA PATIENT

Jiraporn Khorana, Narain Chotirosniramit
Chianng Mai University, Chaingmai, Thailand

Abstract

Aim of the Study: There were many systematic scoring systems constructed for trauma patients. There were few scoring systems which specific and simple for pediatric population. This study aimed to develop the mortality predicting score in pediatric trauma patient.

Methods: Pediatric trauma patients admitted between January 2007 to December 2022 aged 0-18 were included. Retrospective consecutive reviewed was done. The mortality within 30 days was the outcome. Parameters at admission were collected. The logistic regression was used and reported as odds ratio. Factors predicted mortality was transformed to assigned score. Internal validation by bootstrap technique was done.

Main results: A total of 376 patients were included. Ten (2.7%) patients were died, and 366(97.3%) patients were alive. Glasgow Coma Scal (GCS)(3.0(3.0-6.0) VS 15.0 (15.0-15.0) p<0.001), systolic blood pressure(106.6±21.5 VS 118.5±18.2 p=0.044) and temperature(36.5±0.8 VS 37.0±0.7 p=0.036) were found statistically significant associated with mortality. These 3 parameters were categorized and transformed score as table. The area under receiver operative curve of 94.5% was obtained. The prediction score ranges from 0-4 with the cut point of 2 and more had high mortality risk (LHR+ = 9.9(6.2-15.8)).

Conclusions: Severe head injury, systolic blood pressure of 90 mmHg and less, temperature of 36.0 and less were the admission parameters which could predict the mortality of pediatric trauma in the simple rule with high prediction affinity.

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TR09_PO / 14:26 – 14:30

IS THERE A CUTOFF VALUE FOR PREDICTING LIVER INJURY IN PEDIATRIC ABDOMINAL TROUMA BASED ON HEPATIC ENZYMES?

Tuğba Örnek Demir[1], Can İhsan Öztorun[2], Elif Emel Erten[1], Ahmet Ertürk[1], Sabri Demir[1], Emrah Şenel[2], Müjdem Nur Azılı[2]
[1]Sağlık Bilimleri University, Ankara, Turkey. [2]Yıldırım Beyazıt University, Ankara, Turkey

Abstract

Aim of the Study: The descriptive values of biomarkers indicative of hepatic damage in the evaluation of abdominal trauma (AT) remain uncertain. We sought to determine the appropriate liver enzyme cutoffs for identifying liver injury (LI).

Methods: This is a single-center study that was retrospectively performed on patients under 18 years of age who applied to our hospital, which was serving as a pediatric trauma center. The study considered 11.174 patients between January 2015, and November 2018. Between the dates, 1906 patients were included in the abdominal trauma group (ATG). ATG consisted of patients who were diagnosed and treated with abdominal trauma according to physical examination findings, laboratory tests, and imaging methods. The relationship between physical examination findings, imaging methods, and treatment options was evaluated statistically.

Main results: Among the study population, 17% of the patients were evaluated in ATG (n=1906). In abdominal traumas, computed tomography (CT) was requested in 31.4% (n=493), and the rate of pathological finding in CT was 30.9% (n=201) with, and LI was found 3.3% of ATG. When imaging methods were compared with ALT and AST values for detecting LI; the optimal cutoffs for AST and ALT were determined as 153 U/L and 80 U/L respectively with 86.7% of sensitivity and 77.8% of specificity.

Conclusions: The release of liver enzymes is an established indicator of LI. In our cohort, AST levels greater than 153 U/L and ALT levels greater than 80 U/L exhibited a high sensitivity in predicting LI and may be used safely.

13:30 - 14:30

Poster Presentation Session 19

General V

(M2) Studio 1+2

Chair: Mohit Kakar (LAT)

Roman Metzger (AUT)

GE35_PO / 13:30 – 13:35

SURGICAL TREATMENT OF PRIMARY HYPERPARATHYROIDISM IN CHILDREN

Petra Zahradnikova[1], Lenka Fedorová[1], Eva Vitariušová[2], Jozef Babala[1], Robert Králik[3]
[1]Department of Pediatric Surgery, Faculty of medicine, Comenius University and National Institute of Children´s Diseases, Bratislava, Slovakia. [2]Department of Pediatrics, Faculty of medicine, Comenius University and National Institute of Children´s Diseases, Bratislava, Slovakia. [3]Department of Surgical Oncology, Medical Faculty of Comenius University St. Elisabeth´s Cancer Institute, Bratislava, Slovakia

Abstract

Aim of the Study: Primary hyperparathyroidism (PHPT) is an endocrine disease characterised by elevated serum calcium and abnormally high PTH levels. Approximately 80% of children with PHPT are symptomatic, the delay in diagnosis and definitive surgical treatment leads to organ damage.

Methods: A retrospective analysis of all patients (2016-2022) with PHPT who underwent parathyroidectomy. Primary outcome was normo-calcaemia > 6 months after surgery, secondary outcome was operative success (intraoperative: 10 minutes after parathyroidectomy parathyroid hormone (IOPTH) decrease of ≥50%).

Main results: 8 patients (75% F) were included. The mean age was 13.6 (range: 8-16) years. The symptoms were musculoskeletal pain (25%), bone deformity (12.5%), abdominal pain (37%), renal stones (50%), reno-vascular hypertension (12.5%). The mean serum calcium was 3,1±0,8 mmol/l, the median serum PTH was 307 pg/ml (range: 113–1397.2). Genetic analysis for MEN-1 mutations was negative in all patients. PET-CT 18F cholin was positive in 75% patients (Figure 1). Six patients underwent unilateral parathyroidectomy, 25% parathyroid autotransplantation (Figure 4a,b). The mean level of IOPTH was 19.4 pg/ml, in 87,5% decreased ≥ 50%. Biochemical investigations after surgery showed decrease in calcium level (mean 1.88 mmol/L) and PTH levels (mean 28.7 pg/ml); subsequently. Normo-calcaemia >6 months after surgery was achieved in 87.5%, with no postoperative complications. One patient with multi-glandular disease required reoperation due to the ectopic adenoma.

Conclusions: Our study showed the spectrum of manifestations of PHPT in children is various. Given the high risk for complications, parathyroid surgery in children should be performed by experienced surgeons in multidisciplinary cooperation.

Figure 1

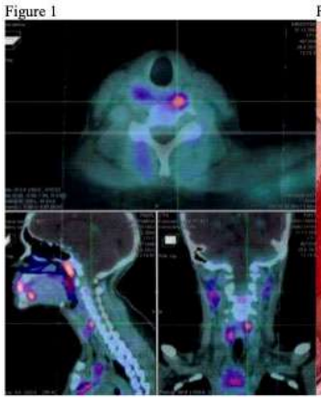

Figure 2

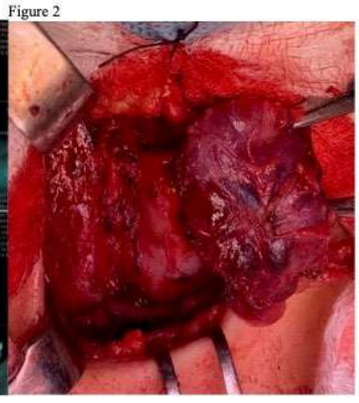

Figure 3

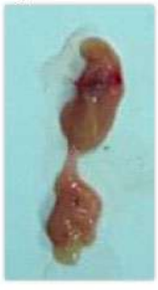

Figure 4a

Figure 4b

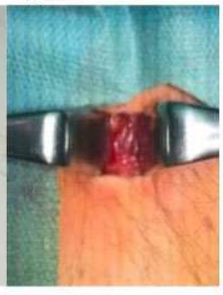

Figure 1. PET-CT F18 Cholin revealed hyperplasia of the left parathyroid

Figure 2. Left thyroid gland exploration

Figure 3. Extracted left parathyroid gland adenoma

Figure 4a, b. Parathyroid autotransplantation into non-dominant forearm brachioradialis muscle

GE36_PO / 13:35 – 13:40

GOOD RESPONSE TO BLEOMYCIN SCLEROTHERAPY FOR MICROCYSTIC LYMPHATIC MALFORMATIONS IN CHILDREN

Hanna Hyvönen[1], Kristiina Kyrklund[1,2], Päivi Salminen[1,2], Johanna Aronniemi[3,2]
[1]Department of Pediatric Surgery, New Children's Hospital, University of Helsinki and Helsinki University Hospital, Helsinki, Finland. [2]VASCERN VASCA European Reference Centre, Helsinki, Finland. [3]HUS Diagnostic Center, Department of Radiology, New Children's Hospital, University of Helsinki and Helsinki University Hospital, Helsinki, Finland

Abstract

Aim of the study: To evaluate the results after bleomycin sclerotherapy for patients with lymphatic malformations (LMs).

Methods: After institutional approval, the records of all patients <16 years of age with LMs managed with bleomycin sclerotherapy under ultrasound guidance at our tertiary institution between 2009–2019 were assessed for clinical features, interventions, follow-up, and outcomes. Data are presented as median (range).

Main results: A total of 31 patients had undergone bleomycin sclerotherapy (52% male; follow-up time 5 (0.3–13) years) of whom 17 (55%) received combined treatment with other sclerosants for macrocystic components. The age at first bleomycin sclerotherapy was 6 (1–14) years. Presenting features included a palpable mass (52%), pain (45%), swelling (39%), and bleeding/leakage (29%). Bleomycin was used to treat microcystic LMs (48%) or microcystic components of mixed type LMs (52%). Sixty-three sclerotherapy sessions were performed (median 2 (1–9) sessions per patient) with a median dose of 7500 (range, 1125–15000) IU/session, and cumulative dose of 14742 (range, 3000–68500) IU/patient. Complications were uncommon (Clavien-Dindo grade I: 1.6%); no cases of pulmonary fibrosis have occurred to date. Symptomatic improvement, reduction in LM size, or clinical regression was observed in 11/14 (79%) of cases who underwent bleomycin sclerotherapy alone. Similar improvement was noted in 14/17 (82%) of cases who underwent combined treatment.

Conclusions: Microcystic LMs and predominantly microcystic mixed LMs demonstrated a good response to sclerotherapy with bleomycin alone and/or in combination with other sclerosants. Clinical improvement observed in 81% of all cases.

GE37_PO / 13:40 – 13:45

THE UTILIZATION OF SURGICAL SERVICES BY THE ABORIGINAL/TORRES STRAIT ISLANDER AND IMMIGRANT CHILDREN IN AUSTRALIA

Ahmad Faruque
University of Sydney, Sydney, Australia

Abstract

Aim of the Study: This systemic review aims to highlight the burden of common surgical diseases in Aboriginal, Torres Strait Islander, and immigrant children, awareness about surgical services, access to care, and the need to enhance surgical services.

Methods: The researcher conducted a systematic literature review in which eight retrospective and prospective cohort studies were searched from six databases: MEDLINE, EMBASE, PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Google scholar. Trauma, chronic supportive otitis media, rheumatic heart disease, undescended testis, penile abnormalities, and inguinal hernias are the main surgical conditions identified among indigenous, non-indigenous, and immigrant children.

Main results: The Aboriginal and Torres Strait Islander communities experience high-level disparities and unmet healthcare needs. The problems of the study cohort are due to their financial challenges and poverty, which hinder them from accessing healthcare services. There are negative assumptions among healthcare practitioners that prevent them from accessing healthcare services. Most of the doctors who offer services to the Aboriginal and Torres Strait Islander individuals are trained overseas; thus, they do not fully understand the community's health care system and do not integrate well with the community as they provide services.

Conclusions: The study established the need to prioritize the indigenous and immigrant communities and create population-specific and user-friendly models of care. There is a need to understand the connections between culture, land, and ancestors in the indigenous, which connect with the deep past and proceedings into the future.

GE38_PO / 13:45 – 13:50

MULTIDISCIPLINARY TEAM FOR THE MANAGEMENT OF COMPLEX AERO-DIGESTIVE DISEASES: 10 YEARS OF EXPERIENCE OF AN ITALIAN PEDIATRIC TERTIARY CARE CENTER.

Andrea Conforti[1], Duino Meucci[2], Marilena Trozzi[2], Pietro Bagolan[1]
[1]Neonatal Surgical Unit - Bambino Gesù Children's Hospital, Rome, Italy. [2]Airway Surgery Unit - Bambino Gesù Children's Hospital, Rome, Italy

Abstract

Aim of the Study: An interdisciplinary approach is crucial for the patients with complex multi-system diseases. In 2012 the Laryngo-Tracheal team was established in our hospital, a multidisciplinary working team for the discussion and management of patients with complex pathologies, including aerodigestive problems. The team consists of stable specialists who participate in the evaluation and management of all cases. Specialists external to the team can be involved depending on the case. Before this organization, these patients were followed with multiple evaluations of single specialists with more difficult communication and coordination. The aim of the study is to define the organization and effects of our team achieved during the 10years of action.

Methods: We evaluated the evolution of the organization of our multidisciplinary team and the impact of the interdisciplinary approach on the management of aerodigestive patients, in terms of outcomes and efficiency.

Main Results: Our team consists of 12 permanent specializations for each meeting, which have weekly frequency. Since the establishment of the Laryngo-Tracheal Team we have had a lower number of the consultations with faster indications and reduction of hospitalization time. We have also obtained a reduced care-giver burden and responsibility, considering that all the decisions and protocols are joint.

Conclusions: It's essential to define and standardize the characteristics and the organization of a multidisciplinary team for the management of complex pediatric pathologies and in particular aerodigestive patients. A multidisciplinary approach to complex pathologies improves the efficiency and the outcomes with a faster decision time and a briefer hospitalization.

GE39_PO / 13:50 – 13:55

MEDICAL STUDENTS' OPINIONS AND SUGGESTIONS TOWARDS A FLIPPED PEDIATRIC SURGERY CLERKSHIP

Gulnur Gollu Bahadır[1], Alper Bayazıt[2], Ipek Gonullu[2], Ergun Ergun[1], Ufuk Ates[1], Meltem Bingol Kologlu[1], Aydın Yagmurlu[1], Ahmet Murat Cakmak[1]
[1]Ankara University Faculty of Medicine, Department of Pediatric Surgery, Ankara, Turkey. [2]Ankara University Faculty of Medicine, Department of Medical Education and Informatics, Ankara, Turkey

Abstract

Aim of the study: The flipped classroom method flips traditional teaching. The theoretical part of the course is given to the student as homework with resource sharing, and high-level cognitive tasks. In this process, educators act as guides and support students' problem-solving processes in classroom activities. The aim of this study is to investigate the students' opinions and suggestions for a flipped pediatric surgery clerkship.

Methods: A four-day pediatric surgery clerkship is planned. Learning materials were uploaded to the learning management system. 10-question multiple-choice quizzes were applied at the beginning of the lesson in order to understand students' preparations and to measure their prior knowledge levels. Quiz results were shared, and students' misconceptions were corrected during the first 15-minutes of each course. Case discussions were given to the students, and small group discussions were provided as in-class activities. Thus, the participants reached the Apply and Analyze levels of learning objectives in Bloom's taxonomy.

Main Results: On the last day of the clerkship, feedback was received from 135 students via a 12-item Likert-type questionnaire. The findings revealed that the flipped classroom approach improves learning by making processes more enjoyable, attracting more attention, and increasing student motivation. As negative aspects, they stated the high volume of contents, and the limited time for preparation. As suggestions, they recommended summarizing contents, increasing the visual materials.

Conclusions: According to the results obtained, it was found that the learning process and motivation were high, although the application for each course that made up the clerkship heavier.

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GE40_PO / 13:55 – 14:00

TWELVE YEARS' EXPERIENCE IN THE ANTIBIOTIC TREATMENT OF POST-APPENDECTOMY ABSCESSES IN CHILDREN REGARDLESS OF SIZE

Julio César Moreno Alfonso[1,2], Raquel Ros[1], Javier Arredondo[1], Ada Molina Caballero[1], Aníbal Teherán[3], Alberto Pérez Martínez[1]
[1]Hospital Universitario de Navarra, Pamplona, Spain. [2]Universidad Pública de Navarra, Pamplona, Spain. [3]Fundación Universitaria Juan N Corpas, Bogotá, Colombia

Abstract

Aim of the Study: To assess the efficacy of antibiotics as first-line therapy for post-appendectomy abscess in children regardless of size.

Methods: Case-control study of children with post-appendectomy abscess admitted at our hospital from 2010 to 2022. The efficacy of antibiotics was compared between abscesses less and more than 6 cm in diameter. The Institutional Ethics Review Board has approved this study.

Main results: A total of 1766 appendectomies were performed from 2010 to 2022 with an incidence of post-appendectomy intra-abdominal abscess of 5% (n= 89): age 9.3 IQR 5.8, 63% male (n= 56). Sixty-seven patients presented with a ≤6 cm abscess (controls) and 22 children had a >6 cm post-appendectomy abscess (cases). Abscess diameter was 4 IQR 2 cm in controls and 7.1 IQR 2.5 cm in cases. Diagnostic images and length of intravenous antibiotics were higher in cases (15 IQR 7 days) than controls (12 IQR 4 days), p= 0.003. The efficacy of antibiotics in controls was 97% whereas 86.4% in cases (p= 0.094), reoperation was needed in 2/67 controls and 3/22 cases, with no differences in complications or readmission. However, the length of stay was longer in cases (15 IQR 6 days) than controls (13 IQR 5 days), p= 0.042.

Conclusions: Antibiotics seem a safe first-line treatment for post-appendectomy intra-abdominal abscesses in children regardless of the size. However, this approach is associated with a longer period of intravenous antibiotics and hospital stay, although not with a higher rate of therapeutic failure, complications, or reoperations.

GE41_PO / 14:00 – 14:05

COMPARISON OF BODYPREP AND POVIDONE IODINE ON THE AMOUNT OF COLONY AT THE SURGICAL SITE IN NEONATES WITH CLEAN WOUNDS

Mehrdad Hosseinpour, Mohsen Lotfipour
Isfahan University of Medical Sciences, Isfahan, Iran, Islamic Republic of

Abstract

Aim of the Study: The presence research focused compares the effect of BodyPrep and Povidone iodine (PVP-I) as topical antiseptic on surgical site in neonates.

Methods: A total of 70 neonates who underwent clean surgery were examined in two separate groups (35 neonates in any group) by PVP-I and BodyPrep as topical antiseptic on surgical site. The Colony count before and after use of PVP-I and BodyPrep was selected as an analytical factor to investigation role topical antiseptic on surgical site. In the other hand we examined TSH level in the PVP-I prep group. We evaluated the differences between the patients in mentioned groups.

Main results: The results showed that use of PVP-I and BodyPrep in surgical site in neonates, the amount of colony count and TSH level did not significant changed and this confirms that the PVP-I is as effective as the BodyPrep which is widely used for this purpose. On the other hand, no grossly changes in the surgical site such as wound infection or local sensitivity were observed in both groups.

Conclusion: The reported results in the present research did not find differences in antiseptic action between PVP-I and BodyPrep.

GE42_PO / 14:05 – 14:10

CONSERVATIVE VERSUS SURGICAL MANAGEMENT OF NEONATAL OVARIAN CYSTS

Samuel Dan Israel Benchaya, Laura Pérez Egido, Isabel Bada Bosch, María Dolores Blanco Verdú, Sara Monje Fuente, María Fanjul Gómez, Agustín Cañizo López, Julio Arturo Cerdá Berrocal, María Antonia García Casillas, David José Peláez Mata, Juan Carlos De Agustín Asensio
Hospital General Universitario Gregorio Marañón, Madrid, Spain

Abstract

Aim of the Study: Review of our experience in the management of neonatal ovarian cysts and their long-term evolution.

Methods: We performed a retrospective observational study of patients diagnosed with neonatal ovarian cyst in our institution from 2014-2022. We included those who had ultrasound follow-up of the cyst since birth. We excluded cysts with a diameter less than 2 cm. We collected demographic variables, ultrasonographic variables of the cyst and variables regarding therapeutic management (follow-up or surgery).

Main results: The diagnosis of neonatal ovarian cyst was made in 25 patients, 21 of which were selected for the study. The mean size of the cysts was 4.2 +/-1.4 cm. Among all patients, 36% (8/21) had simple cysts and 62% (13/21) had complex cysts. 46% of complex cysts were operated by laparoscopic cystectomy. The rate of ovarian conservation, after 3-12 months of follow-up, was higher in the patients treated conservatively (42%) compared to the operated patients (16%), with no statistically significant differences. In the 3 patients with simple cysts between 4 and 6 centimeters, conservative management was decided, and one case of postnatal torsion occurred.

Conclusions: Neonatal ovarian cysts treated conservatively may have a higher rate of long-term ovarian preservation. In our institution, we consider surgical management as a therapeutic alternative in high-risk cysts.

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GE43_PO / 14:10 – 14:15

BLOOD CELL INDICES AS PREDICTORS OF COMPLICATED APPENDICITIS IN CHILDREN

Julio César Moreno Alfonso[1,2], Raquel Ros[1], Javier Arredondo[1], Ada Molina Caballero[1], Aníbal Teherán[3], Alberto Pérez Martínez[1]
[1]Hospital Universitario de Navarra, Pamplona, Spain. [2]Universidad Pública de Navarra, Pamplona, Spain.
[3]Fundación Universitaria Juan N Corpas, Bogotá, Colombia

Abstract

Aim of the Study: To assess the accuracy of neutrophil-to-lymphocyte ratio (NLR), derived neutrophil-to-lymphocyte ratio (dNLR), platelet-to-lymphocyte ratio (PLR) and monocyte-to-lymphocyte ratio (MLR) for distinguishing uncomplicated (UA) and complicated appendicitis (CA) in children.

Methods: Diagnostic study of patients with acute appendicitis who were admitted at our hospital from 2021 to 2022. NLR, dNLR, PLR and MLR were compared between groups. The Institutional Ethics Review Board has approved this study.

Main results: A total of 182 patients were included: 116 cases with CA (62.9% male, age 9.6 IQR 5.5 years) and 66 patients with UA (33.3% female, age 10.6 ± 2.7). All blood cell indices were significantly higher in the CA group than UA (p= < 0.0001). NLR, dNLR and PLR have a good area under the receiver operating characteristic (ROC) curve whereas MLR has a regular one (0.735) (Fig.). PLR was the most accurate predictor of CA with a sensitivity of 72%, specificity 80%, positive predictive value 87%, negative predictive value 62%, area under ROC curve 0.802 (CI95% 0.737-0.866) and cut-off point for diagnosis of CA of 213.32. Positive and negative likelihood ratios of NLR, dNLR and PLR were 2.99 and 0.36; 3.06 and 0.49; and 3.6 and 0.2, respectively

Conclusions: PLR seems to be the most accurate cellular index for distinguishing uncomplicated and complicated appendicitis in children. It can be useful as a predictor of intraoperative findings and early postoperative courses.

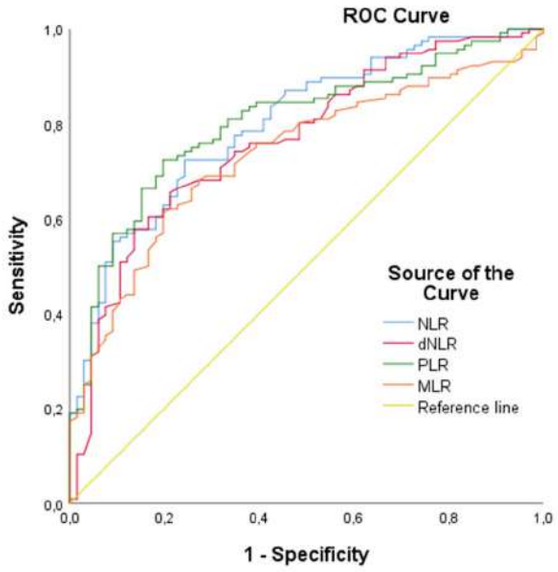

Figure. ROC curve of NLR, dNLR, PLR and MLR to distinguish between complicated and uncomplicated appendicitis in children.

GE44_PO / 14:15 – 14:20

CATEGORIZATION AND EARLY DIAGNOSIS OF THE OHVIRA SYNDROME.

Ana Ramirez Calazans, Rosa Maria Ibarra Rodriguez, Veronica Vargas Cruz, Marina Sepulveda Casas, Montserrat Anton Gamero, Rosa Maria Paredes Esteban
Reina Sofía Hospital, Córdoba, Spain

Abstract

Aim of the Study: In recent years, the better categorization of OHVIRA syndrome (OS) has allowed early diagnosis in those patients with renal anomalies detected prenatally. Our objective is to describe the characteristics of these patients in our environment in order to avoid diagnostic and therapeutic delay.

Methods: Retrospective review of medical records of patients under 18 years diagnosed with OS in the last 25 years. Analysis of the clinical and demographic characteristics, diagnosis, follow-up, treatment, and complications of the patients.

Main results: 14 women, current mean age 15.85±6.35 years, with abnormalities of genitourinary development. All with single functioning kidney (64.3% prenatal diagnosis): 50% multicystic renal dysplasia, 35.7% renal agenesis, 7.1% renal atrophy and 7.1% double excretory system. During ultrasound follow-up, diagnosis of uterine anomaly: 50% didelphys uterus, 42.9% bicornuate uterus and 7.1% unicornuate uterus. Mean age at diagnosis of uterine anomaly 10.95±6.13 years. 21.4% diagnosed in the first year of life, the rest at pubertal age. The diagnosis of OS was confirmed in 7 patients by MRI, the rest pending completion of the study due to prepubertal age or absence of symptoms. 3 patients with OS required urgent drainage due to gynecological complications (1 pyometrocolpos, 2 hydrometrocolpos). Surgical treatment of 6 patients by means of cystoscopy, vaginoscopy and vaginal septostomy.

Conclusions: Given the prenatal or early diagnosis of unilateral renal pathology in girls, it is necessary to rule out the presence of Müllerian anomalies in order to improve surgical planning and avoid complications that could cause obstetric problems in the future.

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GE45_PO / 14:20 – 14:25

MINIMALLY INVASIVE SURGERY IN THE TREATMENT OF NEONATAL OVARIAN CYSTS: A SYSTEMATIC REVIEW

Giovanni Parente[1], Ilaria Marcoccio[1], Francesca Galbiati[1], Giulia Del Re[1], Anna Maria Fagnani[1], Ernesto Leva[1,2]
[1]Pediatric Surgery Department, IRCCS Fondazione Ca' Granda Ospedale Maggiore Policlinico, Milano, Italy. [2]Department of Clinical Sciences and Community Health, University of Milan, Milano, Italy

Abstract

Aim of the study: The estimated incidence of clinically significant ovarian cysts is 1/2500 live births. Surgical management of cysts larger than 4 cm is not yet standardized. The aim of the study is to review the current literature regarding the role of minimally invasive surgery (MIS) in the management of neonatal ovarian cysts (NOC).

Methods: Using PRISMA guidelines, PubMed and EMBASE databases were searched for reports on MIS in NOC treatment, using the terms "laparoscopy neonatal ovarian cyst". Technique, complications and long-term results were evaluated.

Main results: 105 reports were originally identified: 44 were included in the systematic review. Most authors reported laparoscopic approaches to NOC performing ovariectomy, salpingectomy or intracorporeal cystectomy, which is described either by two or three-port laparoscopy. Few reports described percutaneous cyst aspiration under direct laparoscopic vision (one trocar). A less described procedure is the laparoscopic-assisted trans-umbilical extracorporeal cystectomy (LATEC). Access to the peritoneal cavity is mostly performed with open approach but Verres needle is also cited. Most authors use CO2 insufflation to create intra-abdominal workspace, but abdominal suspension was described too. A few authors present the use of 3D-laparoscopy in NOC. Most frequent complications described were surgical site infection, abdominal wall hematoma and subcutaneous emphysema.

Conclusions: MIS in NOC proved to be safe, feasible and effective if respected the following advice: to prefer open technique for the first port placement, to keep low intra-abdominal pressures, to use microsurgical instruments and worm CO2 insufflation. LATEC seemed to guarantee best aesthetic result with less operative time.

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GE46_PO / 14:25 – 14:30

A RETROSPECTIVE ANALYSIS OF BIRTH WEIGHT AND GESTATIONAL AGE CORRELATIONS WITH ILEOCECAL VALVE RESECTION, SURGICAL PROCEDURES, AND INTESTINAL PERFORATION

Manuela Neyer[1], Allyson Wenner[2], Patrick Sezen[3], Carlos Reck[4]
[1]Medical Universtity of Vienna, Vienna, Austria. [2]Melk Hospital, Melk, Austria. [3]Medical University of Vienna, Vienna, Austria. [4]Mödling Hospital, Mödling, Austria

Abstract

Aim of the Study: To conduct a retrospective analysis of the medical records of VLBW and ELBW patients who underwent intestinal surgery before discharge from the NICU. We aimed to identify differences in birth weight and gestational age on the rate of ileocecal valve resection, the total number of surgeries performed, and the incidence of intestinal perforation.

Methods: We conducted a retrospective analysis of infants with a birth weight < 1500 g, who underwent laparotomy prior to discharge from the NICU between 2015-2021. Patient characteristics, diagnosis, number of surgical interventions needed, surgical approach, length of bowel resection, and one-year follow-up visits were evaluated. Statistical analysis was made with Pearson's chi-square test, independent t-tests. A p-value of < 0.05 was considered statistically significant. Pearson's correlation coefficient, r, was used to assess a potential correlation between two metric variables.

Main results: Birth weight ($p = .639$) and gestational age at birth ($p = .388$) did not statistically correlate with the rate of ileocecal valve resection, intestinal perforation ($p = .120$; $p = .095$), or the number of surgeries performed ($r(93) = 0.13$, $p = .209$). A statistically significant higher perforation rate was noted in patients who received earlier laparotomy ($p = .003$).

Conclusions: There was no statistically significant correlation between birth weight and gestational age regarding the rate of ileocecal valve resection, intestinal perforation, or the number of surgical procedures required among patients that underwent exploratory laparotomy. 39% of all patients requiring ileocecal valve resection later developed short bowel syndrome.

13:30 - 14:30

Poster Presentation Session 20

LoWer Gastrointestinal II

(M2) Studio 1+2

Chair: Roxanne Rassouli-Kirchmeier (NED)

Ivo de Blauww (NED)

LG03_PO / 13:30 – 13:35

INFLUENCE OF LATE DIAGNOSIS ON TOTAL COLONIC AGANGLIONOSIS

María San Basilio, Alejandra Vilanova, Carla Ramírez-Amorós, María Sarmiento, Ane Andres, Leopoldo Martínez
Hospital Infantil La Paz, Madrid, Spain

Abstract

Aim of the study: The presentation of total colonic aganglionosis (ACT) is variable and is not consistent with the classic presentation of Hirschsprung's disease. The objective of the study is to analyze the presentation, surgical treatment and complications in our series of cases.

Methods: Retrospective review of patients with ACT divided into two groups according to age at diagnosis (early diagnosis before 40 days of life and late diagnosis after 40 days). Demographics, form of presentation, surgical treatment, complications, and follow-up were evaluated.

Main results: Twenty-seven patients (14 men) were included, of whom 13 (48.1%) had a late diagnosis with a median of 60 days of life (47-420) versus 14 days (4-20) in those with early diagnosis. Delayed passage of meconium was described in 50% of the patients with early diagnosis and in 30.7% of the patients with late diagnosis (p= 0.310). We found no differences in the number of surgical interventions required before diagnosis (4 patients in each group). Postoperative complications after ileo-anal pull-through were described in 42.9% of patients with early diagnosis and in 69.2% of patients with late diagnosis (p=0.168). At the time of the study, with a median age of 19 years (7-27), 8 patients with early diagnosis and 5 with late diagnosis had recurrent enterocolitis and a total of 18 patients received chronic decontamination treatment.

Conclusions: Total colonic aganglionosis has an atypical presentation and frequently entails a diagnostic delay that does not influence complications or long-term outcomes.

LG04_PO /13:35 – 13:40

MACHINE LEARNING FOR THE PREDICTION OF NECROTIZING ENTEROCOLITIS IN PRETERM INFANTS

Rosa Verhoeven, Thijmen Kupers, Celina Brunsch, Jan Hulscher, Elisabeth Kooi
University Medical Center Groningen, Groningen, Netherlands

Abstract

Aim of the Study: Necrotizing enterocolitis (NEC) is difficult to predict, even in highest risk infants. This study aimed to investigate if machine learning (ML) could help to predict NEC using parameters from the first postnatal days.

Methods: Three ML models were trained to predict NEC in patients admitted to our NICU between 2018-2022. High-risk infants (gestational age < 30 weeks) surviving >7 days without NEC were included. To establish the effect of class imbalance on model performance, the control group was randomly downsampled to obtain several NEC:control ratios.
Input variables consisted of gestational age, birth weight, sex, and vital data (heart rate, respiratory rate, SpO_2, cerebral and splanchnic rSO_2) of the first five postnatal days. Time Series FeatuRe Extraction on basis of Scalable Hypothesis tests (TSFRESH) was used to extract significant features from these vitals. Predictive power is portrayed by F1-scores and precision-recall (PR)-AUCs.

Main results: Participant selection resulted in 267 patients (145 boys, median GA 27.9[IQR: 26.4-29.1] weeks, BW 1000.0[830.0-1260.0] grams, 32 NEC, age at NEC 14.5[10.0-22.3] days). Predictive power declined with an increased class imbalance. Best results were obtained by logistic regression (LR) (F1=0.89, PR-AUC=0.95 in 1:1 ratio; F1=0.67, PR-AUC=0.71 in 1:4 ratio, Table 1). Most TSFRESH features were derived from splanchnic rSO_2 (M=47.8%).

Conclusions: LR predicted NEC with an F1-score up to 0.89, with splanchnic rSO_2 as important vital predictor. The diminished predictive power with greater class imbalance warrants more data in future endeavors. Yet, we showed that ML can predict NEC early after birth, allowing for targeted preventive measures.

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LG05_PO / 13:40 – 13:45

TIMING AND METHODS OF SURGICAL MANAGEMENT OF GIANT EXOMPHALOS; A SYSTEMATIC REVIEW

Harmit Ghattaura[1,2], Andrew Ross[1,2], Bashar Aldeiri[1,2], Amulya Saxena[1,2]
[1]Chelsea and Westminster Hospital NHS Foundation Trust, London, United Kingdom. [2]Imperial College, London, United Kingdom

Abstract

Aim of the study: This systematic review analysed closure techniques and their timing in the recent management of giant exomphalos (GE).

Methods: Cochrane, MEDLINE and EMBASE were searched for English language publications between Jan 1992-Dec 2022 using the following terms and variations: "Omphalocele", "Exomphalos", "Giant", "Closure", "Outcome". Articles describing operative techniques were selected using PRISMA 2020 criteria. Non-English language articles were excluded. Data collected included demographics, timing and technique of surgical repair, method of initial non operative management, morbidity and mortality.

Main results: The search identified 378 articles, of which 39 met inclusion criteria (19 retrospective reviews, 10 case-reports, 10 case-series). Four-hundred and twenty-six neonates were included (49% male, 51% female) for analysis. 31 articles detailed their initial non-operative management (16 dressings, 12 silo, 3 serial sac ligation). Definitive operative management methods; 20 early closure, 13 delayed and 6 mixed (Figure 1). Mean number of procedures was 2.2 (median 2; range 1-6). Mean time to definitive closure was 404 days (delayed 935 vs early 18). One-hundred and thirty-one (30.7%) neonates experienced complications with infection (n=48) and recurrent hernia (n=8) the most frequently reported. The cumulative reported mortality was 56 (13.1%).

Conclusions: Definitions of GE in the literature are heterogenous and accordingly there are a wide variety of management approaches described. This systematic review identified 12 different operative techniques utilised. We identified a mean time to closure of 13.5 months that required on average >2 procedures per neonate. Complications occur in >25% cases along with a cumulative mortality of 13%.

LG06_PO / 13:45 – 13:50

COMPARISON OF LAPAROSCOPIC AND OPEN ILEOCECAL RESECTION FOR COMPLEX CROHN'S DISEASE IN CHILDREN

Vojtech Dotlacil[1], Stepan Coufal[2], Tereza Lerchova[3], Barbora Kucerova[1], Richard Skaba[1], Michal Rygl[1]
[1]Department of Paediatric Surgery, Second Faculty of Medicine, Charles University and Motol University Hospital, Prague, Czech Republic. [2]Laboratory of Cellular and Molecular Immunology, Institute of Microbiology, Academy of Sciences of the Czech Republic, Prague, Czech Republic. [3]Department of Paediatrics, Second Faculty of Medicine, Charles University and Motol University Hospital, Prague, Czech Republic

Abstract

Aim of the Study: Ileocecal resection (ICR) for complex (intra-abdominal abscess and/ or fistula - Montreal B3 disease) Crohn's disease (CD) is often technically demanding and there is still no consensus whether laparoscopic surgery can be routinely recommended as a safe approach. The aim of the study was to compare laparoscopic-assisted and open ICR for complicated CD.

Methods: Retrospective review of complex CD patients who underwent ICR between January 2016 and December 2022 was performed. The patients were divided into open (OG) and laparoscopic (LG) groups. Compared parameters included patients' demographics, clinical characteristics, surgery, duration of hospitalization and follow-up. Complications were classified according to the Clavien-Dindo classification (CDc). Risk factors were identified using multivariable analysis.

Main results: Nineteen patients (12 females, 63.2%) were included in the analysis, thirteen patients in LG. The median duration of surgery was 151 in OG versus 170 in LG (p=0.23) minutes. There was one conversion to open procedure. Postoperative complications were reported in 2 patients (10.5%). There was no significant difference in postoperative complications according to CDc (OG 16.6% vs LG 7.6%, p=1). The median length of hospitalization was 11 in OG and 7 days in LG (p=0.008). The median length of follow-up was 15.5 months.

Conclusion: Even in complex CD form in children the laparoscopic-assisted approach is safe, feasible and had shorter hospital stay and was not associated with increased risk of 30-day postoperative complications.

LG07_PO / 13:50 – 13:55

BOTULINUM TOXIN INTRASPHINCTERIC INJECTION FOR THE TREATMENT OF POSTOPERATIVE OBSTRUCTIVE SYMPTOMS IN PATIENTS WITH HIRSCHSPRUNG'S DISEASE.

Carla Ramirez-Amoros, Maria San Basilio, Alba Sanchez, Ane Andres, Leopoldo Martinez, Alejandra Vilanova
La Paz University Hospital, Madrid, Spain

Abstract

Aim of the Study: Patients with Hirschsprung's disease (HD) may have postoperative obstructive symptoms in the absence of mechanical causes. Botulinum toxin injection (BTI) into the internal anal sphincter (IAS) has been proposed as a treatment. Our aim is to analyse the effect of BTI in the IAS as a treatment for these symptoms.

Methods: Retrospective study of HD patients treated with ITB between 2010-2022. We analysed demographic characteristics, aganglionic length, type of descent, indication and subsequent evolution.

Main results: Of the 60 HD patients studied, 17(28%) required ITB at 14(5-35) months post descent: 9(53%) rectosigmoid, 4(24%) long, 3(18%) total colonic and 1(5%) ultra-short. Laparoscopic descent was performed in 5(30%), transanal in 5(30%) and open in 7(40%). The indication for ITB was dependence on irrigations or high doses of laxatives (12), recurrent enterocolitis (8) and encopresis (4). 88% of patients improved after the first injection with withdrawal of irrigations (10), absence of encopresis (12) and absence of enterocolitis (14). However, 9 (53%) required 2 (2-9) ITB every 5 (5.20-7.90) months. As complications, 1 patient had transitory perineal excoriation. The effectiveness of ITB was not related to the degree of agglanglionism, type of descent, previous treatment, or age (p>0.05).

Conclusions: ITB improves functional obstructive symptoms in patients with already descended HD, decreasing the need for irrigations, episodes of enterocolitis and encopresis. Half of the patients require repeated injections.

LG08_PO / 13:55 – 14:00

EARLY MOTOR DEVELOPMENT IN CHILDREN WITH ANORECTAL MALFORMATION AND HIRSCHSPRUNG DISEASE

Sophia van Streun[1,2], Inge Oldeman[1], Henriette Stemerdink[1], Mirjam van Eck[1], Jessica Warnink[1], Mattijs Alsem[1], Lieke Beltman[1], Ramon Gorter[1], Ernest van Heurn[1], Jaap Oosterlaan[2], Joep Derikx[1]
[1]Emma Children's Hospital Amsterdam UMC, Amsterdam, Netherlands. [2]Follow Me Emma Children's Hospital Amsterdam, Amsterdam, Netherlands

Abstract

Aim of the Study: Children with anorectal malformation (ARM) or Hirschsprung disease (HD) often require surgery in the first year of life. Our previous systematic review has shown that children undergoing surgery for congenital gastrointestinal malformations are at risk for impaired motor development. Studies reporting on motor development in children with ARM or HD are scarce, with most studies being hampered by small sample sizes. The current study investigated early motor development in children with ARM and HD after surgery.

Methods: This study included patients operated in the first year of life for HD or ARM. Motor development was assessed at the age of 6, 12 and 24 months using the Bayles Scales of Infant Development-III (BSID-III) assessing fine and gross motor development and the Alberta Infant Motor Scale (AIMS) at 6 and 12 months measuring gross motor development. Assessments were conducted by physiotherapists as part of routine prospective follow-up. Data of patients were compared to normative data of representative normative samples using mixed models.

Main results: A total 43 children with ARM and 41 with HD were included. As compared to the representative normative sample, children with ARM and HD had poorer gross motor development as measured with the AIMS and BSID at ages 6 and 12 months. A small positive difference was found in fine motor development with the BSID at ages 6 and 24 months when compared to a representative normative sample.

Conclusions: Children with ARM and HD showed impaired gross motor development at the age of 6 and 12 months.

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LG09_PO / 14:00 – 14:05

LONG-SEGMENT COLONIC HIRSCHSPRUNG'S DISEASE: IS IT WORTH KEEPING THE RIGHT COLON?

Louise Montalva[1], Shahrazad Al Balushi[1], Fulvia Del Conte[1], Liza Ali[1], Emmanuelle Dugelay[2], Arnaud Bonnard[1]
[1]Department of Pediatric Surgery, Robert-Debré Hospital, Paris, France. [2]Department of Pediatric Gastroenterology, Robert-Debré Hospital, Paris, France

Abstract

Aim of the study: Management of long-segment colonic Hirschsprung's disease (HD) is controversial, as performing a total colectomy seems radical but right colon motility may be poor. The aim was to compare the outcomes of long-segment HD that underwent a pull-through of the colon (CD) vs ileum (ID).

Methods: Retrospective study including children with HD that underwent a Duhamel pull-through for long-segment HD extending beyond the left colon (2013-2022).

Main results: Duhamel pull-through for long-segment HD was performed in 25 children (15 CD, 10 ID). CD was performed earlier than ID (3 months vs 12 months,p=0.0078). Reintervention for post-operative complications after CD was required in 26%: diverting stoma for colorectal leakage (n=3) or persistent obstruction (n=1) on median POD30, and 1 spur division on POD48. Total colectomy and ileo-rectal anastomosis for colonic dysfunction was performed in 20% (n=3), with a median delay of 3 years. After ID, no reintervention for post-operative complications or redo-pull-through were performed, and 1 child (10%) required a diverting stoma for dysmotility 18 months after pull-through. Botox injections were performed in 47% CD and 40% ID (p=0.99), with a median delay of 2.4 and 1.5 years, respectively. In children>3 years, 61% of CD and 83% ID had satisfying bowel control (p=0.6).

Conclusions: Whereas children with long-segment colonic HD are expected to have a better outcome compared to ileal HD, performing a Duhamel pull-through on the right colon seems associated with increased rates of reintervention and worse long-term bowel control, compared to Duhamel pull-through of the ileum.

LG10_PO / 14:05 – 14:10

INTESTINAL STRICTURES AFTER CONSERVATIVE MANAGEMENT OF NECROTIZING ENTEROCOLITIS

Raquel Mena, José Andrés Molino, Gabriela Guillén, Sergio López, Marta Martos, Isabel González-Barba, César Ruiz, Manuel López
Vall d'Hebron University Hospital, Barcelona, Spain

Abstract

Aim of the Study: Necrotizing enterocolitis (NEC) is one of the main causes of neonatal acute abdomen and entails high mortality. Many patients receive initial conservative management, being strictures post-necrotising enteroclitis (SPNEC) one of its possible complications. Our aim is to describe their management and outcomes.

Methods: Retrospective analysis from June 2011 to November 2022 of post-NEC strictures after conservative non-surgical management of NEC.

Main results: Out of 219 cases of NEC, 126 received initial conservative management (57,5%). 24 of them (19%) needed posterior surgery for SPNEC. Gestational age and birthweight were 31,3 ± 4,9 weeks and 1964 ± 1009g. All except one were Bell stage II. Stricture diagnosis was made 38,4 ± 16,5 days after NEC debut. 6 asymptomatic patients (25%) were diagnosed after protocol contrast study, 10 (41,6%) after intestinal obstruction confirmed with a contrast enema and 8 (33,3%) presented obstructive symptoms after a normal contrast study. Average age at surgery was 56 ± 17,9 days. 2/3 of stenosis occurred in the cecum, ascendent colon or hepatic flexure. Only 2 involved the small intestine. Primary anastomosis was performed in all cases. Refeeding occurred on postoperative day 4,3 ± 2,9. Two complications of the anastomosis occurred (one dehiscence and one stenosis), and 3 cases were reintervened for adhesive small bowel obstruction during follow-up, without involvement of the anastomosis. No deaths occurred.

Conclusions: Strictures post-necrotising enterocolitis are a common complication after NEC conservative management. Deferred surgical treatment after NEC debut and shorter resections improve outcomes and prognosis in these patients.

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LG11_PO / 14:10 – 14:15

THE POSTERIOR SAGITTAL APPROACH FOR THE RESECTION OF RECTO URINARY FISTULA (RUF) AFTER PERINEAL RECONSTRUCTION OF ANORECTAL MALFORMATION

Md Samiul Hasan, Ashrarur Rahman, Nazmul Islam
Bangladesh Shishu Hospital and Institute, Dhaka, Bangladesh

Abstract

Aim of the Study: This study aims to demonstrate the outcome of the posterior sagittal approach for the resection of persistent and acquired RUF after the definite reconstruction of ARM.

Methods: We have retrospectively reviewed the demographic and clinical records of the boys who underwent resection of persistent or acquired RUF in the posterior sagittal approach in our department. We used a structured questionnaire to record patient demography, type of ARM, timing and type of definitive surgery, preoperative workup, and outcome of revision surgery (Video). The Krickenbacks continence score has been used to evaluate the functional outcome.

Main results: Eleven boys underwent persistent or acquired RUF resection in the posterior sagittal approach. Eight patients had PSARP with a persistent RUF, and three had anoplasty with an acquired RUF. Ten patients had additional misposition of the neoanus, and two had neoanal stenosis. Micturating cystourethrogram (MCU), distal loopogram, and perineal examination under anesthesia confirmed the diagnosis and location of recto urinary fistula in all patients. No patient had a recurrence of fistula. Mean operation time was higher in patients with previous PSARP. One patient developed urinary retention; Three patients had superficial wound infections. All the boys have voluntary bowel movements. No patient has soiling; three patients have grade one constipation.

Conclusions: The posterior sagittal approach provides excellent visualization for the resection of RUF, though the dissection is difficult in patients with previous PSARP wounds. However, Long-term follow-up is needed to observe urethral stricture formation in these boys.

LG12_PO / 14:15 – 14:20

Surgical intervention for intussusception: A national multi-center study in (country).

Shirin Gosavi[1], Kristine Jung[2], Brodie Elliott[3], Udayangini Samarakkody[1], Andrew Weston[4], Georges Tinawai[5], Samuel Haysom[6], Shona Naera[6], Jonathan Wells[6], Stephen Evans[3]
[1]Waikato Hospital, Hamilton, New Zealand. [2]Waikato Hospital, University of Auckland, Auckland, New Zealand. [3]Starship Hospital, Auckland, New Zealand. [4]Starship Hospital (University of Auckland), Auckland, New Zealand. [5]Wellington Hospital, Wellington, New Zealand. [6]Waipapa Hospital, Christchurch, New Zealand

Abstract

Aim of the Study: Non-operative management of intussusception is common; however, children undergo surgery directly or after failed enema reduction. We aimed to review the indications and outcomes of operative management in (country) where a national guideline is lacking.

Methods: We performed a national retrospective multi-center study of children (<15y) who had interventions for intussusception across the four paediatric surgical centers between 01/01/2007 and 01/01/2022. The demographics, duration of symptoms, type of intussusception, lead point, outcomes of interventions, time to full feeds, and length of hospital stay were collected. The primary outcome was the success and indication for surgery. Statistical analysis was performed using the Mann-Whitney U test.

Main results: Of the 502 patients with intussusception, the median age was 0.9 yrs. Three hundred and fifty-one (69.9) % were male. Forty-eight (9.5%) patients had a pathologic lead point. One hundred and eighty patients (35.8%) underwent surgical management of their primary intussusception, varying among centers from 29.7% to 46.2%. A total of 58 children underwent direct operative intervention, but 122 (65.9%) had surgery after unsuccessful enema reduction, with an inter-center variation of 22% to 38%. Four (0.9%) had post-enema perforation requiring surgery. Of the 180 children who underwent surgery, 140 (77.7%) were open, and 40 (23.3%) were laparoscopic. The length of hospital stay was 49.1 hours and 109.2 hours ($p<0.00001$) for laparoscopic and open surgery, respectively.

Conclusions: There are significant inter-center differences in the utilization of surgical intervention for intussusception. This finding supports standardizing the national management of intussusception in our country.

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LG13_PO / 14:20 – 14:25

BOWEL FUNCTION AND GASTROINTESTINAL QUALITY OF LIFE IN HIRSCHSPRUNG ADOLESCENTS

Remi Andre Karlsen[1], Anders Telle Hoel[1,2], Kristin Bjørnland[1,2]
[1]University of Oslo, Oslo, Norway. [2]Department of pediatric surgery, Oslo University Hospital, Oslo, Norway

Abstract

Aim of study: To investigate bowel function and gastrointestinal quality of life (QoL) in Hirschsprung (HD) adolescents.

Methods: Retrospective chart review and cross-sectional study of bowel function and gastrointestinal QoL in HD adolescents 12-18 years using the Bowel function score (BFS) and Pediatric Quality of Life Inventory Gastrointestinal Symptoms Module (PedsQoL-GI) questionnaires. Ethical approval was obtained.

Main results: Of 71 identified HD patients, 57 (80%) answered the questionnaires. 44 (77%) were boys. 46 (81%) had rectosigmoid aganglionosis, seven (12%) more proximal or total colonic aganglionosis, and four (7%) had aganglionosis reaching the jejunum. 53 underwent a pull-through procedure (46 endorectal pull-through, 7 Duhamel), and four have a jejunostomy. At follow-up at median 14 (12.0-18.3) years, 19/53 (33%) of patients having undergone a pull-through operation, used bowel management (16 had appendicostomy, 3 did rectal washouts). None had a permanent enterostomy. BFS was median 18 (8-20) in the 34 remaining patients. The total PedsQL-GI score was mean 85.5. The items with the lowest scores were "Gas and bloating" (mean 66.7) and "Stomach pain and hurt" (mean 74.6). All scores were within the 1 SD cut-off reported in healthy controls. The four patients with jejunal aganglionosis had substantial lower PedsQoL-GI scores as their mean score was 74.7.

Conclusions: One third of HD adolescents having undergone a pull-through operation used bowel management. Despite frequent bowel problems, overall gastrointestinal QoL was good.

LG14_PO / 14:25 – 14:30

TESTING THE VALIDITY OF THE NUCLEAR MEDICINE COLON TRANSIT STUDY (NCTS): IS SLOW COLON TRANSIT FAMILIAL?

Caitlin McCulloch, Paul Jenkins, David Croaker
Australian National University, Canberra, Australia

Abstract

Aim of the Study: Chronic severe constipation (CSC) is a common symptom worldwide. Significant numbers of our patients are investigated with NCTS. We asked how useful the test was in investigating CSC. We aimed to test the hypothesis that functional faecal retention (FFR) and STC would show different inheritance and clinical features.

Methods: A retrospective chart review of children who had undergone NCTS from 2006 – 2021. Patients were grouped by radiological diagnosis. Clinical features, family history, and short-term outcomes were compared.

Main results: 203 patients were included. 18.7% were reported as normal transit; 19.7 % FFR; 48.8% STC; 12.8% mixed STC and FFR. There were no significant differences in the clinical presentation of these groups, nor in the likelihood of having affected siblings. There was a significant association between abnormal transit and family history of neuropsychiatric disorder (2.6% of family members of patients with normal transit study; 21.3% of family members with STC p = 0.01). Patients with abnormal transit had less improvement at last review (91% improved after at least three months with a normal study, against 55% with STC improved p = 0.02), and a slightly greater likelihood of requiring appendicostomy.

Conclusions: STC is not more heritable than other types of constipation, but an abnormal NCTS is predictive both of a more difficult course and of a family history of neuropsychiatric disorder. The most important difference is between normal and abnormal rather than between FFR and STC. NCTS can nonetheless be a useful adjunct to the management of CSC.

13:30 - 14:30

Poster Presentation Session 21

Lower Gastrointestinal III

(M2) Studio 1+2

Chair: Kivilcim Karadeniz Cerit (TUR)

Louise Montalva (FRA)

LG15_PO / 13:30 – 13:35

HOW OFTEN DO WE NEED FECAL DIVERSION IN CHILDREN WITH PERIANAL CROHN DISEASE? CASE-CONTROL STUDY.

Olga Shcherbakova, Linara Khabibullina
Clinical Hospital Russian National Research Medical University named after N.I. Pirogova of the Ministry of Health of Russia, Moscow, Russian Federation

Abstract

Aim of the Study: Perianal Crohn disease (PCD) often lead to irreversible destruction of the anal sphincter and development of fecal incontinence. Due to PCD sometimes it is required to use the fecal diversion. Objective: to analyze our experience in treating patients and identify factors associated with stoma in children with PCD.

Methods: the results of treatment of 112 patients with PCD for the period from 2009 to 2022, treated in 2 large clinics in Moscow, were analyzed. All patients were divided into 2 groups: 1st group with fecal diversion (24), 2nd group – without stoma (88). Gender, age of manifestation of the disease, form and localization of CD, type of perianal lesions, operations on the perineum and abdominal cavity were analyzed.

Main results: In our research, the stoma in patients with PCD was more often performed in the presence of abdominal surgery for intra-abdominal infiltrates, strictures of the small and large intestine, fistulas (p = 0.0091), terminal ileitis (0.02), rectal stenosis (p =0.03). Factors influencing the need for stoma removal are included in a logistic regression, which demonstrated that an independent factor in the need for stoma in a patient with PCD is the presence for abdominal surgery (OR: 1.46; 95% CI : 1–2.2, p=0.05).

Conclusions: Our study showed that not all patients with PCD require fecal diversion. However, the combination of severe perianal lesions with lesions of the small and large intestine significantly aggravates the patient's condition and may require the stoma.

LG16_PO / 13:35 – 13:40

RESULTS OF LAPAROSCOPIC SACRAL RECTOPEXY FOR IDIOPATHIC RECTAL PROLAPSE IN CHILDREN

Ali Ekber Hakalmaz[1], Merve Gokbuget[1], Turkan Rahimli[1], Cigdem Tutuncu[2], Rahsan Ozcan[1], Gonca Topuzlu Tekant[1]
[1]Istanbul University-Cerrahpasa, Cerrahpasa Faculty of Medicine, Department of Pediatric Surgery, Istanbul, Turkey. [2]Istanbul University-Cerrahpasa, Cerrahpasa Faculty of Medicine, Department of Anesthesiology, Istanbul, Turkey

Abstract

Aim of the Study: To evaluate the results of laparoscopic sacral rectopexy (LSR) for treatment of idiopathic rectal prolapse (IRP).

Methods: IRP cases treated with LSP between December 2021 - July 2022 were reviewed retrospectively. All cases had persistent RP that had not responded to medical treatment and/or injection sclerotherapy treatment for a duration more than 1 year.

Main results: Four patients were included the study. Mean age was 10,5 years (6-14). Mean symptomatic period was 3,6 years (8mo-10y). No parasitic infections, polyps or enteropathy had been identified. Two patients had failed injection sclerotherapy before surgery. There were no anatomical or neuropsychiatric disorders. All patients underwent LSP. The average duration of the procedure was 105 minutes (80-120 minutes), the hospital stay was 42 hours (24-72 hours). Oral laxatives and high fiber diet were given to patients for 3 months to prevent constipation and straining in the postoperative period. The mean follow-up period was 9,7 months (8-12 months) and currently all cases are clinically well and have not developed any recurrent rectal prolapse.

Conclusions: LSP is a safe and effective minimally invasive procedure that provided good results in the short-term follow-up, with a short hospital stay, in persistent IRP cases unresponsive to conservative treatment in the pediatric age group.

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LG17_PO / 13:40 – 13:45

GOING TO PRIMARY SCHOOL IN CHILDREN WITH ANORECTAL MALFORMATIONS: THE PARENTS' PERSPECTIVE

Cunera de Beaufort[1], Josef Atay[1], Marijke Voskeuil[1], Caroline Kuijper[1], Sjoerd de Beer[1], Justin de Jong[1], Arnout de Bos[2], Svenja Vennink[2], Ernest van Heurn[1], Ramon Gorter[1]
[1]Amsterdam UMC, Amsterdam, Netherlands. [2]Vereniging Anusatresie, Huizen, Netherlands

Abstract

Aim of the Study: To evaluate experience with toilet facilities at primary schools in the Netherlands of parents of children with anorectal malformations (ARM) aged 3-12 years.

Methods: A survey was developed in collaboration with the national patient advocacy group (PAG) for ARM, comprising two domains: general questions regarding school and specific questions regarding toilet facilities and experiences how schools deal with children with ARM. Participants were parents of school-going children with an ARM, aged 3 to 12 years. Recruitment for participation is done by the PAG (email-listing and social media) and one expertise centre. The survey will be closed by March 1st 2023.

Main results: Preliminary results show responses of 43 participants. Median age of children participating in this project was 7.0 years (IQR 5.0-9.0). Schools were often located in a village (65.9%) and encompassed 100-500 children (79.5%). In total, 6/43 parents experienced difficulties in choosing a primary school. Experiences with school were described as solely positive (n=18), solely negative (n=3), both positive and negative (n=15), and neither positive nor negative (n=6). Regarding school toilet facilities, approximately 61% the toilets were reported clean, and 82% easily accessible.

Conclusions: The period of going to primary school in children with ARM might be stressful for both parents and children. About 10% report difficulties in choosing a primary school and 41% report negative experiences. This highlights the need for improving guidance during this period, and to optimise education of schools when dealing with children with ARM. Further research is needed to explore possibilities of improving this.

LG18_PO / 13:45 – 13:50

INFLUENCE OF BMI AND RISK OF COMPLICATED ACUTE APPENDICITIS IN CHILDREN.

Ana Ramirez Calazans, Francisco Javier Murcia Pascual, Luz Emigdia Zelaya Contreras, Maria Rosa Ibarra Rodriguez, Rosa Maria Paredes Esteban
Reina Sofía Hospital, Córdoba, Spain

Abstract

Aim of the Study: Child and adolescent obesity is a growing public health problem nowadays. Our objective is to analyze whether there was an increased probability of complicated acute appendicitis in obese children, as well as post-surgical complications.

Methods: Retrospective study in patients operated on for acute appendicitis in 2022. Two groups: normal weight (NP) vs obesity (O). The variables BMI, sex and age, evolution time, type of appendicitis (complicated vs. uncomplicated), surgical time, surgical technique, average stay, and postoperative complications were evaluated.

Main results: 117 patients were operated on, 65.8% male and 34.2% female, mean age 8.87±2.96 years. 78.6% normal weight and 21.4% obesity group. Mean evolution time to diagnosis 31.68±19.78 hours in PN vs 26.52±17.81 hours (p=0.240). 38% of complicated appendicitis in NP vs 52% in O (p=0.208). Surgical technique used in PN 47.8% open appendectomies, 22.8% laparoscopic, 29.3% video-assisted; compared to 40%, 40%, 20% in O, respectively (p=0.215). Mean surgical time 67.13±20.73 minutes in NP vs 76.44±24.5 in the obesity group (p=0.058). Mean stay 2.99±2.88 days for NP vs 2.64±1.44 for O (p=0.561). Readmission rate 5.4% in NP vs 8% (p=0.632). Complication rate 9.8% vs 12% (p=0.746): surgical wound infection 4.3% vs 8% (p=0.463), wound dehiscence 0% vs 4% (p=0.054) and intra-abdominal abscess 8.7% vs 8% (p=0.912).

Conclusions: Despite the fact that our population has an incidence of obesity higher than the Spanish average, we have not shown that BMI influences the evolution of acute appendicitis or its post-surgical complications in our center.

LG19_PO / 13:50 – 13:55

THE NEED OF LAXATIVES IN PATIENTS WITH ANORECTAL MALFORMATIONS: IS COMPLEXITY A PREDICTOR OF WORSE RESULTS?

Catarina Carvalho[1], Leopoldo Martinez[2], Alba Sanchez-Galán[2], Ane Andrés Moreno[2], Alejandra Vilanova-Sanchez[2]
[1]Centro Hospitalar Universitário do Porto, Porto, Portugal. [2]Hospital Universitario La Paz, Madrid, Spain

Abstract

Aim of the Study: Anorectal malformation (ARM) often need long-term laxatives use. Usually, polietilenoglicol (PEG) is started but soon needs replacement by sennosides for fecal accidents (FA), although there is no standardized protocol for laxative transition. We aimed to evaluate effectiveness of our bowel management protocol in ARM.

Methods: Patients treated in our center from 2018-2022 were grouped by bowel control prognosis; 1: good (perineal), 2: intermediate (vestibular, vaginal or rectobulbar) and 3: bad (rectoprostatic, short common channel cloaca). Complex ARM and age<2 years were excluded. Laxative use, transition and failure were compared by groups, gender, vertebral anomalies (VA), genetic syndromes (GS), sacral index (SI) and prior colostomy.

Main results: 43 patients were evaluated. Median age was 4.3 years; 74% were males and 86% were group 1 and 2. Laxatives were initiated in 72%, 190 days postoperatively; 87% started on PEG, half requiring change to sennosides for FA after 133 days. These patients had median dose of 28.5mg, 62% without FA; Neither malformation type or presence of GS influenced laxative use or bowel control ($p>0.05$). VA ($p=0.000$) and SI≤0.5 ($p=0.010$) were associated with more FA after laxative transition, but not in dosage nor failure. Males and prior colostomy had to transition earlier ($p=0.024$ and $p=0.002$ respectively).

Conclusions: Most ARM patients need stimulant laxatives after 4 months of colostomy closure independently of the type of ARM. Patients with VA or low SI have more FA, although not predicting dose nor failure of laxatives.

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LG20_PO / 13:55 – 14:00

ANORECTAL MALFORMATIONS — RESULTS OF TREATMENT AND LONG-TERM FOLLOW-UP IN 297 PATIENTS: A TERTIARY CENTER EXPERIENCES

Elif Emel Erten[1], Can İhsan Öztorun[2], Vildan Selin Çayhan[1], Süleyman Arif Bostanci[1], Tuğba Örnek Demir[3], Sabri Demir[3], Ahmet Ertürk[2], Müjdem Nur Azili[2], Emrah Senel[2]
[1]ankara Bilkent City Hospital Department Of Pediatric Surgery, Ankara, Turkey. [2]ankara Yildirim Beyazit University School Of Medicine Department Of Pediatric Surgery, Ankara, Turkey. [3]university Of Health Sciences Department Of Pediatric Surgery, Ankara, Turkey

Abstract

Aim of the Study: Here, we aimed to share the clinical features and surgical treatment of Anorectal malformation (ARM) and report the long-term outcomes.

Methods: All patients treated for ARM in our clinic between 1995-2022 were evaluated in terms of demography, clinical presentations, types of malformations, associated anomalies, surgery, post-operative complications and long-term outcome retrospectively.

Main Results: 297 patients (46.1% female) were operated for ARM. 102 patients (34.3%) had perineal fistula, 59 patients (19.9%) had rectourethral fistula, 7 patients (2.4%) had rectovesical fistula, 55 patients (18.5%) had rectovestibular fistula, 23 patients (7.7 %) persistan cloaca, 14 patients (4.7%) had no fistula, 37 patients (12.5%) had rare/regional variants. 14 patients (4.7%) died due to prematurity, sepsis, severe cardiac malformations, and syndromes. In surgery, 126 (44.5%) patients underwent perineal anoplasty and single stage posterior sagittal anorectoplasty (PSARP), 37 (13.1%) abdominoperineal procedures, 120 (42.4%) three-stage repairs. Associated cardiac anomaly was detected in 138 patients (46.5%), urinary system anomaly in 85 patients (28.6%), spinal dysraphism in 42 patients (14.1%). The mean of follow-up was 4.9 (1-35) years. Constipation was observed in 65 patients (28.5%). 26 patients older than 5 years of age (15.8%) had stool incontinence at least once a week. The mean age of the patients to be fully continence was 12.1.

Conclusions: The results of surgery in the treatment of ARM are promising. A single stage PSARP can be performed in suitable patients. ARM is a congenital malformation that should be followed for a long time, even if it is successfully treated.

LG21_PO / 14:00 – 14:05

SURGICAL TREATMENT OF INTRACTABLE CONSTIPATION: RECTOSIGMOID COLONIC RESECTION

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Abstract

Aim of the Study: Functional constipation is managed conservatively with good response. However, patients who have intractable constipation despite maximum medical treatment should require surgical management. Rectosigmoid colonic resection(RSR) is a surgical option for patients with mega rectosigmoid colon. We aimed to present our experience in selected twelve cases.

Methods: Patients underwent rectosigmoid resection (RSR) due to resistant functional constipation between 2019-2022 were evaluated retrospectively. Demographics, clinical and radiological findings, operative complications and follow-up period were reviewed.

Main results: 650 patients underwent medical treatment due to constipation in our department during the study period. Twelve patients required RSR due to failure of the medical treatment (1.8%). The median age at operation was 7.5 (3-19) years. Six patients suffered from constipation, five with added fecal incontinence. One patient was admitted to the hospital with serious metabolic derangement. Eleven patients underwent laparoscopic-assisted resection, and one patient underwent laparotomy-assisted transanal rectosigmoid resection due to previous abdominal operations. There were no intraoperative or postoperative complications. Median follow-up period was 31.5 (3-40) months. In follow-up period, fecal incontinence totally has been resolved in all patients. Two patients continued to use low-dose laxatives, but they had significant improvement in constipation. One patient did bowel washout through antegrade colonic enema once a week. There was no additional laxatives or enemas requirement.

Conclusions: RSR provided a reasonable response in selected patients in our clinical experience. It seems a reliable surgical option, especially for patients with mega rectosigmoid colon who did not respond to maximal medical treatment.

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LG22_PO / 14:05 – 14:10

RECTAL BIOPSY. IS IT REALLY NECESSARY IN ANORECTAL MALFORMATIONS?

Emine Burcu Çığşar Kuzu[1], Mustafa Onur Öztan[2], Birsen Gizem Ozamrak[3], Dudu Solakoglu Kahraman[3], Gökhan Köylüoğlu[2]
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Abstract

Aim of the Study: The coexistence of Hirschsprung's disease (HD) with anorectal malformation (ARM) is rare but many surgeons still ask to pathologists to look for ganglia in terminal rectum or fistula. In this study we aimed to highlight the rarity of this association and question the necessity of histological evaluation.

Methods: After ethical approval (No:2022/12-41) rectal specimens of ARM patients who underwent corrective surgery in the last 8 years were re-analyzed by two blinded pathologists for the presence and structure of ganglia.

Main results: 67 patients with ARM were identified, distal rectal specimen were obtained in 47. The median age at the time of surgery was 11 months (2days-59 months). A normal pattern of ganglia was present in 51% (24/47), 29.7% (14/47) had aganglionosis and 19.1% (9/47) were inconclusive due to insufficient material. None of the aganglionic specimen showed other histological findings of HD. Patients were followed up regularly in the outpatient colorectal clinic for a median of 87 months (42-117m). Only 6 experienced severe constipation (3 ganglionic, 2 no biopsy, 1 aganglionic), all of whom responded to a bowel management program, and none developed other manifestations of HD (abdominal distension, failure to thrive or enterocolitis) or required additional surgery.

Conclusions: Our results strongly suggest that the association of ARM and HD is extremely rare and the practice to search for ganglia in distal rectum of ARM patients should be discouraged to avoid potential misdiagnosis and overtreatment.

LG23_PO / 14:10 – 14:15

HIRSCHSPRUNG'S DISEASE AND CONGENITAL CENTRAL HYPOVENTILATION SYNDROME IN ITALY: A NATIONWIDE REPRESENTATIVE SURVEY.

Silvia Ceccanti[1], Alessio Pini Prato[2], Riccardo Coletta[3], Maurizio Cheli[4], Giovanni Gaglione[5], Antonino Morabito[3], Gloria Pelizzo[6], Giovanna Riccipetitoni[7], Denis A. Cozzi[1]
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Abstract

Aim of the study: The rare co-occurrence of Hirschsprung's disease and congenital central hypoventilation syndrome, also known as Haddad syndrome (HS), remains poorly addressed in the literature. We conducted a nationwide survey to describe clinical features, management, and outcomes of this subset of patients.

Methods: We contacted the chiefs of the 44 Italian pediatric surgical services with facilities for neonatal surgery to inquiry about their HS experience. Participants responding affirmatively were invited to complete a structured questionnaire.

Main results: Of the nine centers responding affirmatively, 6 (67%) submitted the completed questionnaire, providing data for a total of 16 cases, including 2 siblings (2004-2022). M/F ratio was 10:6. Aganglionosis was diagnosed during the neonatal period in 13 (81%) patients and resulted proximal to the sigmoid colon in 12 (75%), including 6 total colonic and 2 total intestinal aganglionosis. Mortality rate was 25% (2 early and 2 late deaths). Overall, 12 (75%) patients underwent tracheostomy, and 2 (12%) developed a neural crest-derived tumor. Thirteen (81%) patients underwent definitive surgical management (transanal endorectal pull-through in 9, and Duhamel procedure in 4). Nine of these patients were aged >3 years, and 6 (67%) of them acknowledged ongoing defecation problems at median age of 10 years (range, 5 to 18). Bowel function outcomes did not correlate with the extent of aganglionosis.

Conclusions: This nationally representative survey shows that HS is usually associated with suboptimal outcomes. Further collaborative research is warranted to improve management of care in this challenging subset of patients.

LG24_PO / 14:15 – 14:20

WHEN IS SIMPLE DIVERTICULECTOMY SAFE FOR MECKEL'S DIVERTICULUM?

Mehmet Can, Malik Ergin, Özkan Okur, Ayşe Demet Payza, Kamer Polatdemir, Akgün Oral
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Abstract

Aim of the Study: The increase in laparoscopic interventions in Meckel's Diverticulum (MD) makes simple diverticulectomy more common than segmental or wedge resection. We aimed to examine the growth of MD and the distribution of heterotopic mucosa (HM) with age to investigate the safety of simple diverticulectomy in terms of the risk of postoperative residual HM.

Methods: Demographic, clinical, intraoperative, pathological, and postoperative data of 117 patients aged 0-18 years diagnosed with MD in our clinic between 2008-2022 were analyzed.

Main Results: The average length and diameter of MD by age were; <1 year 2.20, 0.96cm; 1–5 years 3.60, 1.55cm; >5 years 3.8, 1.8cm. HM is observed in 39.3% of MDs and settles in the distal 1/3 in 21.7% (mean age 7.43), in the distal 2/3 in 45.6% (mean age 6.04), and more than distal 2/3 in 32.6% (mean age 5.03). There were no HM observed only in the proximal without distal. HM reached the ileodiverticuler border in only 3,4% (mean age 3.8), in the entire diverticulum was covered. Segmental resection was performed in 53.8%, wedge resection in 28.2%, and simple diverticulectomy in 18% of patients. Complication rates were 19%, 18.2%, and 4.8%, respectively, which were mainly adhesive intestinal obstruction.

Conclusions: MD grows with the intestines mainly in the first year of life. As it continues to grow, HM displaces distally. Therefore, HM contacts ileodiverticuler border in very few patients. This increases the safety of simple diverticulectomy as the age of operation increases.

Table

Age	**< 1 Year**	**1-5 Years**	**>5 Years**	**p<0.05**
Length(cm)	2.20 ±1.30	3.60 ±1.5	3.80 ±1.4	p=0.003
Diameter(cm)	0.96 ±0.76	1.55 ±0.6	1.78 ±0.5	p=0.013
HM site	**In distal 1/3**	**In distal 2/3**	**More than distal 2/3**	**p<0.05**
Mean age	7.43 ±4.69 n=10 (21.7%)	6.04±4.31 n=21(45,7%)	5.03 ±3.6 n=15(%32,6%)	p=0.017

LG25_PO / 14:20 – 14:25

BCL-2 IMMUNOHISTOCHEMISTRY AND EXPRESSION ANALYSIS OF GANGLIONIC AND AGANGLIONIC COLON SEGMENTS IN HIRSCHSPRUNG DISEASE AND THEIR RELATIONSHIP WITH HIRSCHSPRUNG ENTEROCOLITIS

Merve Dede[1], Irfan Kiristioglu[1], Gulsah Cecener[2], Nesrin Ugras[3]
[1]Uludag University Faculty of Medicine, Department of Pediatric Surgery, Bursa, Turkey. [2]Uludag University Faculty of Medicine, Department of Medical Biology, Bursa, Turkey. [3]Uludag University Faculty of Medicine, Department of Pathology, Bursa, Turkey

Abstract

Aim of the Study: Hirschsprung's disease (HD) is characterized by the congenital absence of ganglion cells in the gastrointestinal tract. The most feared complication is Hirschsprung enterocolitis (HEC). BCL-2 is a gene protein with antiapoptotic role has been shown that decreased expression plays a role in the etiology of HD. This study aims to explain the mechanisms of immunohistochemical, molecular evaluation and post-operative HEC etiology to elucidate the etiology of HD.

Methods: The colon segments diagnosed with rectosigmoid HD (n:20) and control (n:10) were analyzed retrospectively. 20 HD patients were equally divided into 10 patients in each group according to have enterocolitis or not. Ganglionic and aganglionic colon segments taken from all patients with HD were removed from the pathology archive and analyzed separately. All preparate were evaluated by immunohistochemical staining with BCL-2 antibodies. Subsequently, BCL-2 gene expression analyzes were performed in the same colonic segments as the genetic studies.

Main results: BCL-2 immunostaining results were negative in the aganglionic colon segments of the group diagnosed with HD. In the ganglionic group, the immunohistochemical staining results were less in the group undergoing HEC. In genetic analysis, compared to the normal group, BCL-2 expression was found to be significantly lower in both ganglionic and aganglionic tissues of the group with HD.

Conclusions: Immunohistochemical and advanced genetic studies with large patient series will illuminate the molecular basis of HD and HEC.

LG26_PO / 14:25 – 14:30

PRIMARY SEGMENTAL OMENTAL INFARCTION AS A RARE CAUSE OF ACUTE ABDOMINAL PAIN IN CHILDHOOD – CONSIDERATIONS ON 6 CASES

Narcis Flavius Tepeneu[1], Radu Emil Iacob[1,2], Ionut Adrian Dumitru[1,2], Marius Calin Popoiu[1,2]
[1]university Of Medicine And Pharmacy ''Victor Babes'', Timisoara, Romania. [2]emergency Children's Hospital ''Louis Turcanu'', Timisoara, Romania

Abstract

Aim of the study: Primary omental infarction (POI) has a low incidence worldwide. This condition is rarely considered in the differential diagnosis of acute abdominal pain in childhood.

Methods: We present a group of 6 patients with omental infarction. All patients presented with acute abdominal pain in the right abdomen. Two patients had a history of possible abdominal trauma about two to three weeks earlier. All patients were obese.

Main Results: All patients were treated by surgery (2 laparatomy, 4 laparoscopy) with resection of the affected omentum and tactical appendectomy. The pathology of the surgical specimens revealed primary omental infarction and an appendix without inflammation in all patients. Average length of stay in hospital was 3 days. One patient developed a wound infection which responded well to local treatment. A comparison to a similar group of 6 patients operated for histopathologically confirmed acute uncomplicated appendicitis showed no significant differences in terms of complications, hospital length of stay and final outcome. In the primary omental infarction group there were 2 patients which had computerized tomography scans of the abdomen. Also in the primary omental infarction group the patients had preoperative normal leucocytes and normal or slightly elevated C reactive protein (CRP), in the group with acute appendicitis all patients had elevated leucocytes and normal or elevated CRP.

Conclusions: There can be difficulties in establishing a preoperative diagnosis of primary omental infarction. Although rare, omental infarction should be considered in the differential diagnosis of acute abdomen, especially acute appendicitis, particularly in obese children.

13:30 - 14:30

Poster Presentation Session 22

Lower Gastrointestinal IV

(M2) Studio 1+2

Chair: Judith Lindert (GER)

Dailus Maicius (LIT)

LG27_PO / 13:30 – 13:35

MANAGEMENT OF MECONIUM ILEUS: A SINGLE CENTRE EXPERIENCE

Alessandra Preziosi[1], Martina Ichino[1], Paolo Grassi[1], Giorgio Fava[1], Anna Morandi[1], Ernesto Leva[1,2]
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Abstract

Aim of the Study: To review the management of meconium ileus (MI) at our Center, focusing on the use of Kehr tube.

Methods: retrospective study on patients with MI treated in our Center from 2008 to 2022. Preoperative, operative, and post-operative data collected; complications defined according to Clavien-Dindo. Kehr group was compared with other treatments.

Main results: Seventeen patients were included: 14 (82%) had cystic fibrosis (CF), 10 (59%) had complex MI. Mean GA was 37±3 weeks, mean BW was 2772±653g. Contrast enema was used in 6 (35%) patients. It was successful in one case where hyperosmolar contrast was used. One enema was complicated by perforation. Sixteen (94%) patients required surgery. Kehr tube was placed in 6 patients (38%). Stoma was created in 4 (25%). Two (12%) patients underwent enterotomy and decompression. Anastomosis was performed in 3 (19%), and primary repair of perforation in one (6%). N-acetyl cysteine was administered orally in 8 (47%) patients, and with irrigations in all patients with stoma and 4/6 (67%) with Kehr. Mean time to initial feeding was 10±5 days, mean time to FEF was 30±22 days and mean time to stool passage was 10±7 days. 7 patients (44%) had complications requiring reintervention, one of which subsequently demised. Table 1 shows comparison of Kehr versus other treatments.

Conclusions: Despite the limits of our small series, Kehr tube resulted in effective treatment of the obstruction even in cases of complicated MI, with a reduced number of surgeries.

LG28_PO / 13:35 – 13:40

TRANSANAL AND LAPAROSCOPIC PULL-THROUGH IN RECTOSIGMOID HIRSCHSPRUNG'S DISEASE: COMPARISON OF THE TWO TECHNIQUES

Carla Ramirez-Amoros, Maria San Basilio, Alba Sanchez, Ane Andres, Leopoldo Martinez, Alejandra Vilanova
La Paz University Hospital, Madrid, Spain

Abstract

Aim of the Study: Surgical treatment of Hirschsprung's disease with rectosigmoid involvement (RHD) can be performed by purely transanal endorectal pull-though or laparoscopically assisted. There is no technique of choice at present for these patients. Our aim is to compare our experience with both techniques.

Methods: Retrospective study of patients with RHD who underwent transanal (TD) or laparoscopic (LD) pull-through between 2010-2022. Demographic characteristics, presence of stoma, postoperative complications and long-term evolution were analysed.

Main Results: We included 25 patients, 15 DT and 10 DL. There were no significant differences in age, weight, comorbidities, presence of stoma, or intraoperative complications. Postoperative complications were higher in the DT group: dehiscence 13% vs 0%, anastomotic bleeding 6% vs 0%, bowel obstruction 13% vs 10% and stricture 27% vs 10%; ($p>0.05$). Although without significant differences, we found a lower tendency to need irrigations (40% vs. 30%) and laxatives (40% vs. 30%) in the DL group, as well as a higher presence of spontaneous stool without soiling (60% vs. 80%). After a follow-up of 4.3 (1.95-7.55 years), 20% of patients in both groups suffered from enterocolitis (3 vs 2).

Conclusions: Although the results should be interpreted with caution, there appears to be a higher rate of immediate postoperative complications, less dependence on irrigations and less staining in patients undergoing DT compared to DL.

LG29_PO / 13:40 – 13:45

DETERMINATION OF PERINATAL RISK FACTORS IN THE PREVENTION OF SURGICAL NECROTIZING ENTEROCOLITIS

Medine Ezgi OCAL, Can Ihsan Oztorun, Ahmet Erturk, Sabri DEMIR, Emrah SENEL, Suleyman Arif BOSTANCI, Vildan Selin CAYHAN, Elif Emel Erten, Mujdem Nur AZILI
Ankara City Hospital, Ankara, Turkey

Abstract

Aim of the Study: Necrotizing enterocolitis (NEC), particularly when surgical therapy is required, remains a potentially fatal illness. The aim of the study was to determine the predisposing factors related to the development of NEC for preventing mortality and morbidity.

Methods: This is a retrospective study of neonates who were evaluated and treated with the diagnosis of NEC between August2019 and August2022.Demographic features, perinatal risk factors, associated major cardiac anomalies, the requirement of inotropes, breastfeeding/formula feeding, details of conservative follow-up and surgical interventions, mortality rate, presence of short bowel syndrome, stricture, and ileocecal valve were evaluated.

Main results: One hundred and seventy-three patients with the diagnosis of NEC were divided into medical and surgical groups. The surgical group consisted of 70 patients with a mortality rate of 47.1% and the medical group consisted of 103 patients with a mortality rate of 32.1%($p<0.05$).The requirement of inotropes in the first days of life (n=24/42) and low APGAR 5 score significantly increased the rate of surgical treatment (respectively; p=0.001, p=0.03).Breastfeeding significantly reduced the need for surgery (18/78; 23%; p=0.03). The requirement for bedside peritoneal drain placement or standard laparotomy, the probability of multiple surgeries, the rate of mortality, and the risk of short bowel syndrome (SBD) significantly increased with Modified Bell Classification increase ($p<0.05$). Resection of the ileocecal valve and terminal ileum was not associated with mortality ($p>0.05$).

Conclusions: The requirement of inotropes, low APGAR 5 score, and Stage 3 NEC were determined as risk factors for multiple surgical interventions, SBD, stricture, and mortality.

LG30_PO / 13:45 – 13:50

A NOTE ON THE HISTORY OF HIRSCHSPRUNG'S DISEASE, AND A 115-YEAR'S APOLOGY

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Abstract

In 1886, Harald Hirschsprung, presented - what he believed - to be a new and a rare condition at the Pediatric Congress of Berlin. This disease had been in fact first described by Fredericus Ruysch as an over-enlarged colon phenomenon in 1691, followed by a case of severe constipation published by Domenico Battini in 1800 and about another 20 similar cases that had been recorded in medical literature between 1825 and 1888.

In 1888, Hirschsprung - without knowing the previous reports - summarized his findings in a publication entitled "Constipation in Newborns as a Consequence of Dilatation and Hypertrophy of the Colon". Hirschsprung suggested that the condition was congenital, but he did not refer to a specific etiology or therapeutic option. While he noted a somewhat narrowed rectum in his first case, he did not fully appreciate its significance and failed to recognize that the cause of the megacolon was the nondilated distal bowel.

The intestinal aganglionosis as the pathological basis of this disease had been described for the first time by Karl Tittel in 1901. After 115 years - without considering this relevant discovery - the disease is still known as "Hirschsprung's disease".

Unlike in 1888 or 1916 - in today's age of digitization- the required information can be accessed more easily and accurately. A genuine reassessment and appreciation -based on the concrete contribution actually made to medical literature - is therefore possible.

Perhaps after 115 years now it is time to think about renaming the “Hirschsprung's disease” as “Tittel’s disease”.

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LG31_PO / 13:50 – 13:55

SEDATION OR NO SEDATION IN ILEOCOLIC INTUSSUSCEPTION; PROCEDURAL OUTCOMES AND PARENTS' SATISFACTION IN A RETROSPECTIVE MULTICENTER STUDY

Angélique Berthelot[1], Nora Larbi[2], C.E.J. Sloots[1], Marieke Witvliet[2], Claudia Keyzer-Dekker[1]
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Abstract

Aim of the study: The desirability of procedural sedation during hydrostatic reduction for ileocolic intussusception in children is being debated. The aim of this study was to compare procedural outcomes with and without sedation, as well as parents' satisfaction.

Methods: In a retrospective multicenter study covering the period 2019-2021, we reviewed the chart of children with an ileocolic intussusception, treated in either a hospital that did not provide sedation (NS) or one that provided sedation (WS).
Primary outcomes were success rate, perforation, and recurrence after the reduction. A parental satisfaction questionnaire was sent to the parents. Response could be given on a 5-point Likert scale.

Main results: Data of 65 children were included, 42 in the NS group and 23 in the WS group. The two groups were comparable in demographics and clinical characteristics.
The successful reduction rates were 79% (NS) and 74% (WS) (P = 0.670). In either group one perforation occurred (P = 0.661). The recurrence rates were 14.3% (NS) and 17.4% (WS) (P = 0.740).
The questionnaire response rate was 48% in both groups. Three-quarters of parents in the NS group were satisfied (4) or very satisfied (5) with the procedure versus 80% in the WS group (P = 0.313).
Only in the NS group four parents scored satisfaction less then neutral (< 3). Ten parents in the NS group indicated that they would have preferred sedation for their child.

Conclusions: Procedural outcomes and parent satisfaction did not significantly differ between the group with or without sedation.

LG32_PO / 13:55 – 14:00

PLACENTAL MEMBRANE TRANSPLANTATION: CAN IT BE A SOLUTION FOR TISSUE DEFECT REPAIR IN GIANT OMPHALOCELES

Olga Devrim Ayvaz[1], Ayşenur Celayir[1], Oya Demirci[2]
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Abstract

Aim of The Study: It was aimed to show the effect of covering the omphalocele sac with the placental membrane on the healing of giant omphaloceles requiring silo repair that cannot be repaired.

Methods: After the approval of the ethics committee of our hospital, this study was prospectively performed between October 2021-February 2023. All pregnant women diagnosed with prenatal giant omphalocele were informed that their own placenta could be used for omphalocele repair, if necessary, their consent was obtained.

Main Results: During 16-month, 4-omphalocele couldn't be closed primarily, their placental amniotic membranes were wrapped on omphalocele sacs-left for secondary healing. According to LM/US, the mean week of delivery was 38±1.15weeks(min:37weeks-max:39weeks) / 36.25±2.50weeks(min:33weeks-max39weeks). The mean birth weight was 2932.5±280.64g (min:2600g-max:3170g). ASD, PFO, ASD+VSD, PFO+VSD+PDA were determined. In one-male anterior anorectoplasti was also performed due to anal atresia, 3 were female (75%). The liver and intestines were in omphalocele sacs. The transverse diameter, vertical diameter, height of omphalocele sac were 14.50±3.8730cm (min:11cm, max:20cm), 14.25±2.63cm (min:12, max:18),15±1.19cm (min:13.5cm, max:16cm) respectively. All have unredictable liver adhered to the sac. After wrapped with plasental membrane, all healed with thight granulation tissue. The mean hospitalization day was 44.25±15.7days (min:32days, max:67days). The ventral herni diameter was 7.75±0.96cm(min:7cm-max:9cm). The mean follow-up duration was 8±5.6months(min:3months-max:16months).

Conclusion: In order to prevent sac rupture during secondary healing of giant omphaloceles, wrapping the maternal placental membrane in omphalocele sac is a cheap, effective, safe and successful treatment method.

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LG33_PO / 14:00 – 14:05

GASTROGRAFIN® ENEMA FOR DISIMPACTION IN NEONATAL MECONIUM ILEUS – SYSTEMATIC REVIEW

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Abstract

Aim of the Study: This systematic review evaluated the reported outcomes of Gastrografin® (Schering AG, Berlin, Germany) enema use in newborns with meconium ileus.

Methods: The literature was reviewed on Pubmed and Scopus databases with search terms "meconium ileus" and "Gastrografin" in the last 30 years and analyzed according to the PRISMA 2020 criteria.

Main results: The search from 1992-2022 identified 36 articles of which 9 met the inclusion criteria and identified 662 neonates for analysis. Data was analyzed as follows: Gastrografin concentration was specified in 3 articles and 20-25% (n=1), 33% (n=1) and 50% (n=1); no data in n=6. Application regime specified 1-7 time daily: (a) 1 article (n=42) using 33% specified 2 applications with 71% success, (b) 2 articles (n=509) with 68% and 65% success using 4(-7) times daily (concentration not specified) and (c) 2 articles with 41% and 40% success (n=17, 50% conc, single; n=25, 20-25%, twice) (d) 4 articles n=49 conc. not specified had success in 55%, 53%, 40% and 26%. Technique: No data; 3 articles possible fluoroscopic guidance. Cumulative success: 419/662 (63.3%; range 26%-71%) neonates. Complication rates: 0-14% (mean 5.9%), reported in 7 of the 9 articles; no data in 2 articles. There were 23 complications: intestinal perforations (n=22) and cardiovascular compromise (n=1).

Conclusions: Gastrografin for meconium ileus management does not have standardized reporting in terms of concentration, number of attempts and application regimes. Complications account for 5.9% cases with intestinal perforation predominance. Published reports indicate success of >60% with Gastrografin in meconium ileus neonates.

LG34_PO / 14:05-14:10

THE EFFECT OF THE GANGLIONIC SEGMENT INFLAMATORY RESPONSE TO POSTOPERATIVE ENTEROCOLITIS IN HIRSCHSPRUNG'S DISEASE

Yalim Benibol, Ayse Mine Onenerk, Ali Ekber Hakalmaz, Nil Comunoglu, Gonca Topuzlu Tekant, Rahsan Ozcan
Istanbul University-Cerrahpasa, Istanbul, Turkey

Abstract

Aim of the Study: In our study, we aimed to understand in Hirschsprung's disease the cause of enterocolitis in the postoperative period by examining the state of being affected by inflammatory reactions in the preoperative period.

Methods: A total of 30 cases (M:27,F:3) who were operated on with the transanal endorectal pull-through method due to Hirschsprung's disease between 2012-2022 were included in the study. The cases were divided into three groups. Group 1: Cases with preoperative and postoperative enterocolitis, Group 2: Cases with postoperative enterocolitis, Group 3: Cases with preoperative enterocolitis. The control group consisted of patients who did not have enterocolitis. The intestinal segments removed during the surgery were evaluated for IL-1ß, TNF-α, and IL-6.

Main Results: In the compression of enterocolitis groups and control group average intensity of IL-ß staining percentages in lamina propria (LP) were 52,2±23,8% to 17,8±25,4% and in epithelium 50±23,6% to 22,1±24,6%. Those for TNF-α score of LP staining were 65,4±24% to 47,1±24,2%. It has been found that increase of IL-1ß intensity in LP(p:0.002) and epithelium(p:0.014) of ganglion positive side are related to enterocolitis. However, a similar relationship for TNF-α was found in only transitional zone LP(p:0.01).

Conclusions: It has been shown that endogenous TNF-α secretion and IL-1β-related inflammation play a role in the etiology of Hirschsprung-associated enterocolitis. It has been thought that Hirschsprung-associated enterocolitis is not just an infective disease but an underlying autoinflammatory process.

LG35_PO / 14:10 – 14:15

OBSTRUCTED SYMPTOMS FOLLOWING HIRSCHSPRUNG'S DISEASE, EXPERIENCE WITH MORE THAN 200 CASES

Ahmed Radwan, Mohammed Gadallah, Nader Gurgis, Mohammed Bersy
Ain-Shams University, Cairo, Egypt

Abstract

Aim of the Study: obstructed symptoms (OS) following surgery for Hirschsprung's disease (HD) occur in 20-30% of cases. Symptoms occur usually in the form of constipation, abdominal distension, episodic vomiting, and poor feeding tolerance. Management of OS after HD surgeries is variable. To review cases referred with OD following HD surgery, and to detect management procedure done and their effectiveness.

Methods: This was a retrospective study performed over a 10 years' period (2010-2020) on cases diagnosed with OS following HD surgery. All patients below 18 years were included if they have one or more of the following symptoms after HD surgery: abdominal distension (bloating), constipation (defined by delay in stool passage more than 48 hours), episodic vomiting (not explained by associated gastroenteritis or any systemic cause), and poor feeding tolerance (proved by no weight gain over the past 6 months).

Main Results: 218 cases were included, with a mean age at the HD surgery 5.03±9.6 months. The procedures done for included patients were: Myotomy 2 patients, Swenson 53 patients, Soave 46 patients, Duhamel in 34, Svenson 18 patients, patients with unknown procedure in 56 patients. The procedures done to relief symptoms for those patients according to the algorithm were: Botox intra-anal sphincteric injection (218 patients), Myotomy (36 patients), Redo-HD surgery (11 patients: 8 Swenson, 3 Duhamel), temporally enetrostomy (5 patients), permanent enterostomy (2 patients).

Conclusions: Relief of obstructive symptoms after Hirschsprung's disease surgeries can occur with the followed algorithm.

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LG36_PO / 14:15 – 14:20

IDENTIFYING CLINICAL CHARACTERISTICS OF UNEXPECTED GASTROINTESTINAL PERFORATION IN NEONATES – A RETROSPECTIVE COHORT STUDY OF 48 PATIENTS.

Adinda Pijpers[1], Laurens Eeftinck Schattenkerk[1], Sylvie Vanhamel[1], Ernest van Heurn[1], Gijsbert Musters[2], Ramon Gorter[1], Joep Derikx[1]
[1]Emma Children's Hospital Amsterdam UMC, location University of Amsterdam, Amsterdam, Netherlands. [2]Amsterdam UMC, location University of Amsterdam, Amsterdam, Netherlands

Abstract

Aim of the Study: Gastrointestinal perforations (GIP) in neonates are a surgical emergency that can have significant morbidity and mortality. It is challenging to determine where the perforation is located in advance. Predicting the location of the perforation will aid the surgeon to optimize the surgical strategy as colonic perforations are more challenging than small bowel perforations with more underlying diseases. Therefore, the aim of this study is to identify pre- and postoperative patient characteristics that might help early differentiating between small bowel and colon perforations in neonates.

Methods: A retrospective cohort study was performed in neonates aged 0-6 months with GIP without present diagnosis (eg. NEC) between 1996 and 2022. Outcomes were pre- and postoperative patient specific characteristics between small bowel and colon perforations. Differences were analyzed using chi-square test.

Main results: 25 of 48 neonates presented with small bowel perforation, 20 of 48 colon, 3 of 48 stomach. Prematurity (p=0.001) and extreme low birth weight (p=0.001) were associated with small bowel perforations and associated anomalies (eg. Hirschsprung disease, cystic fibrosis) (p=0.001) with colon perforations. Gender (p=0.366), birth route (p=0.090) and sepsis (p=0.201) showed no significant differences.

Conclusions: Neonates with extreme low birthweight and prematurity have more risk to have small bowel perforation. In case of colon perforation, there is a higher risk for associated anomalies and additional screening (for Hirschsprung disease and cystic fibrosis) should be considered.

LG37_PO / 14:20 – 14:25

TRANSITION ZONE LENGTH IN HIRSCHPRUNG'S DISEASE: HOW MUCH TO RESECT? - A SYSTEMATIC REVIEW

Christine Lam, Muhammad Choudhry
Chelsea Children's Hospital, Chelsea and Westminster NHS Foundation Trust, London, United Kingdom

Abstract

Aim of the Study: Surgical management of Hirschsprung's disease (HD) involves resection of aganglionic bowel and pullthrough procedure, requiring identification and resection of the 'Transition Zone' (TZ). This review will conglomerate reported TZ length in the literature and whether co-morbidities affect TZ length.

Methods: A review of the literature was performed across Medline, Embase, Pubmed and Cochrane Library. Searches were performed with the terms 'Transition Zone' and 'Hirschprung's disease' between 1970 and 2022. Studies were included if they defined TZ and recorded TZ length.

Main results: 236 abstracts were identified. Nine studies met the inclusion criteria, encompassing 259 patients. Six of the studies found that the median/mean length of TZ was <3cm. One reported a median of <5cm. While the remaining two had a median of 7cm and 8cm. All but two of the studies reported a range of TZ length up to >5cm. (Table) One study compared TZ length in Trisomy 21 patients which showed no increase in TZ length compared to non-Trisomy 21 patients.

Conclusions: Most surgeons routinely excise 3-5cm of TZ. This literature review highlights that within published literature, there is a wide range of TZ length that exceeds current excision lengths. As residual aganglionosis represents a large proportion of HD patients with persisting bowel symptoms, recognising the variability in TZ length may prevent residual aganglionosis. Limitations include heterogeneity due to differences in TZ definition. Further work is required on a larger scale to fully appreciate the wide range of TZ length.

LG38_PO / 14:25 – 14:30

VARIATIONS IN EPITHELIAL LINING OF DUPLICATION CYSTS CANNOT BE EXPLAINED BY KNOWN THEORIES

Servet Melike Akıncı[1], Özlem Boybeyi[1], Diclehan Orhan[2], Tutku Soyer[1]
[1]Hacettepe Univeristy Faculty of Medicine Department of Pediaitric Surgery, Ankara, Turkey. [2]Hacettepe Univeristy Faculty of Medicine Department of Pediaitric Pathology, Ankara, Turkey

Abstract

Aim of the Study: Duplication cysts (DC) are found in any part of the gastrointestinal tract from the mouth to anus. Although DC usually have similar epithelium with the adjacent organ, respiratory epithelium in the enteric DC is rarely reported. A retrospective study was performed to evaluate the variations in the epithelial lining of DC and its impact on clinical findings.

Methods: Patients operated with DC between 2012-2022 were enrolled. Demographic features, localization, clinical findings, treatment options and histopathological findings of DC were evaluated.

Main results: Twenty-five cases were included. The mean age was 3.7 years (16 days –14 years), male:female was 15:10. The localizations of DC were ileum (n=11), duodenum (n=5), stomach (n=4), jejunum (n=2), colon (n=2), esophagus (n=2) and rectum (n=1). Three patients had more than one DC in different localizations. Most common presentation was abdominal pain (36%). Intestinal (48%) and gastric (40%) epithelia were the most common finding. Four (16%) of the cases had respiratory epithelium; two of them were in foregut, one in intestinal and one in rectal duplications. 24% of patients had associated anomalies. In 9 patients, surgical treatment was cysts excision, whereas 8 patients had bowel resection with cysts excision. One patient had endoscopic unroofing.

Conclusions: DC shows wide variation in epithelial lining. Respiratory epithelium may exist not only in foregut duplications but also in midgut and hindgut ones. Although presence of respiratory epithelium did not have any impact on clinical findings, none of the previous theories explain the presence of respiratory epithelium different from foregut duplications.

14:30 - 16:30

Scientific Session XV

Lower Gastrointestinal

(M1) Regency 1

Chair: Alejandra Vilanova (EPS)

Tomas Wester (SWE)

Hilmican Ulman (TUR) TEPS

LG01_LO / 14:30 – 14:40

IBD-LIKE LESIONS IN TOTAL COLONIC AGANGLIONOSIS: AN UNDERESTIMATED ENTITY

Marta Erculiani[1], Francesca Poluzzi[1,2], Giulia Mottadelli[1,2], Lorenzo Giacometti[3], Maria Grazia Faticato[4,1], Giovanni Montobbio[5], Enrico Felici[6], Alessio Pini Prato[1]
[1]Pediatric Surgery Unit, The Children Hospital, Azienda Ospedaliera SS. Antonio e Biagio e Cesare Arrigo, Alessandria, Italy. [2]Pediatric Surgery Unit, Department of Women's and Children's Health, University of Padua, Padua, Italy. [3]Pathology Unit, Azienda Ospedaliera SS. Antonio e Biagio e Cesare Arrigo, Alessandria, Italy. [4]Pediatric Surgery Uniti, IRCCS Istituto Giannina Gaslini, Genova, Italy. [5]Pediatric Intensive Care Unit, The Children Hospital, Azienda Ospedaliera SS. Antonio e Biagio e Cesare Arrigo, Alessandria, Italy. [6]Pediatrics Unit, The Children Hospital, Azienda Ospedaliera SS. Antonio e Biagio e Cesare Arrigo, Alessandria, Italy

Abstract

Aim of the study: This study is aimed at providing an epidemiological overview on clinical features, genetics, histology, and metagenomics of inflammatory bowel disease (IBD)-like intestinal lesions that can develop even years after reconstructive surgery in patients with Total Colonic Aganglionosis (TCSA).

Methods: This was a cross-sectional observational study. All TCSA patients performed fecal occult blood test (FOBT) and calprotectin (FC). A clinical questionnaire was submitted to all patients and faecal metagenomics on both patients and caregivers. Data concerning demographics, clinical features, and molecular genetics were collected. In case of positivity of one or both FOBT and FC, transanal ileoscopy with biopsies was performed.

Main Results: Out of a series of 62 TCSA patients, 48 were eligible and 38 accepted to be included. Nineteen tested positive for one or both faecal tests and underwent retrograde ileoscopy. Thirteen out of 19 patients (13/38 = 34.2%) presented IBD-like lesions, after a median of 10 (3.5 - 21.5) years from surgery. FC sensibility was 84.6%. No statistically significant differences regarding phenotype and genotype were observed comparing patients with and without lesions, except for quality-of-life, impaired in the former (p=0,04). Faecal microbiome of patients with IBD-like lesions was characterized by an overabundance of Proteobacteria.

Conclusions: More than one third of TCSA patients develops IBD-like lesions in the long term. Given FC sensibility, we suggest performing retrograde ileoscopy in all TCSA patients for 3.5 years postoperatively to rule out the presence of IBD-like lesions. Further studies will address therapeutic options for this troublesome issue.

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LG02_LO / 14:40 – 14:50

PREGNANCY COMPLICATIONS, DELIVERY MODE AND DELIVERY COMPLICATIONS IN FEMALES WITH HIRSCHSPRUNG'S DISEASE

Cornelia Byström[1], Lisa Örtqvist[1,2], Anna Gunnarsdóttir[1,2], Olof Stephansson[3,4], Tomas Wester[1,2], Anna Löf Granström[1,2]
[1]Department of Women's and Children's Health, Karolinska Institutet, Stockholm, Sweden. [2]Department of Pediatric Surgery, Karolinska University Hospital, Stockholm, Sweden. [3]Department of Women's Health, Karolinska University Hospital, Stockholm, Sweden. [4]Department of Medicine, Karolinska Institutet, Stockholm, Sweden

Abstract

Aim of the Study: To assess pregnancy complications, delivery mode and delivery complications in females with Hirschsprung's disease (HSCR).

Methods: This nationwide population-based cohort study, included all females with HSCR registered in the Swedish National Patient Register between 1964 and 2004 who had given birth to at least one child. Age- and gender-matched controls were randomly selected by Statistics Sweden. Outcome data were retrieved from the Medical Birth Register on each woman's first pregnancy. Exposure was HSCR, primary outcome was delivery mode, secondary outcomes were pregnancy and delivery complications.

Main results: The study cohort comprised 39 HSCR patients and 270 controls. Age at birth of first child was 28.2 ± 5.6 years for females with HSCR vs 26.4±4.8 years for controls, p=0.034. Median pregnancy length was 40.4 weeks (IQR 39.4, 41.3) for females with HSCR vs. 40.1 weeks (IQR 39.1, 41.0) for controls. Fourteen (35.9%) of the females with HSCR underwent caesarian section compared to 40 (14.8%) controls (p=0.006). The proportion of emergency caesarian sections was comparable between the groups (8 (66.7%) vs 24 (70.7%), p=1.000, see table 1. Tears occurred in 15 females with HSCR (62.5%) vs. 133 controls (62.7%), p=1.000, out of which 2 patients with HSCR (13.3%) had a sphincter tear.

Conclusions: Females with HSCR were more likely to undergo caesarian section than controls. Pregnancy length and prevalence of preeclampsia and tears did not differ between the groups.

LG03_LO / 14:50 – 15:00

ARGON INHALATION: A NOVEL TREATMENT FOR NEONATAL SEPSIS

Felicia Balsamo, Mina Yeganeh, Andrea Zito, George Biouss, Carol Lee, Agostino Pierro
Hospital for Sick Children, Toronto, Canada

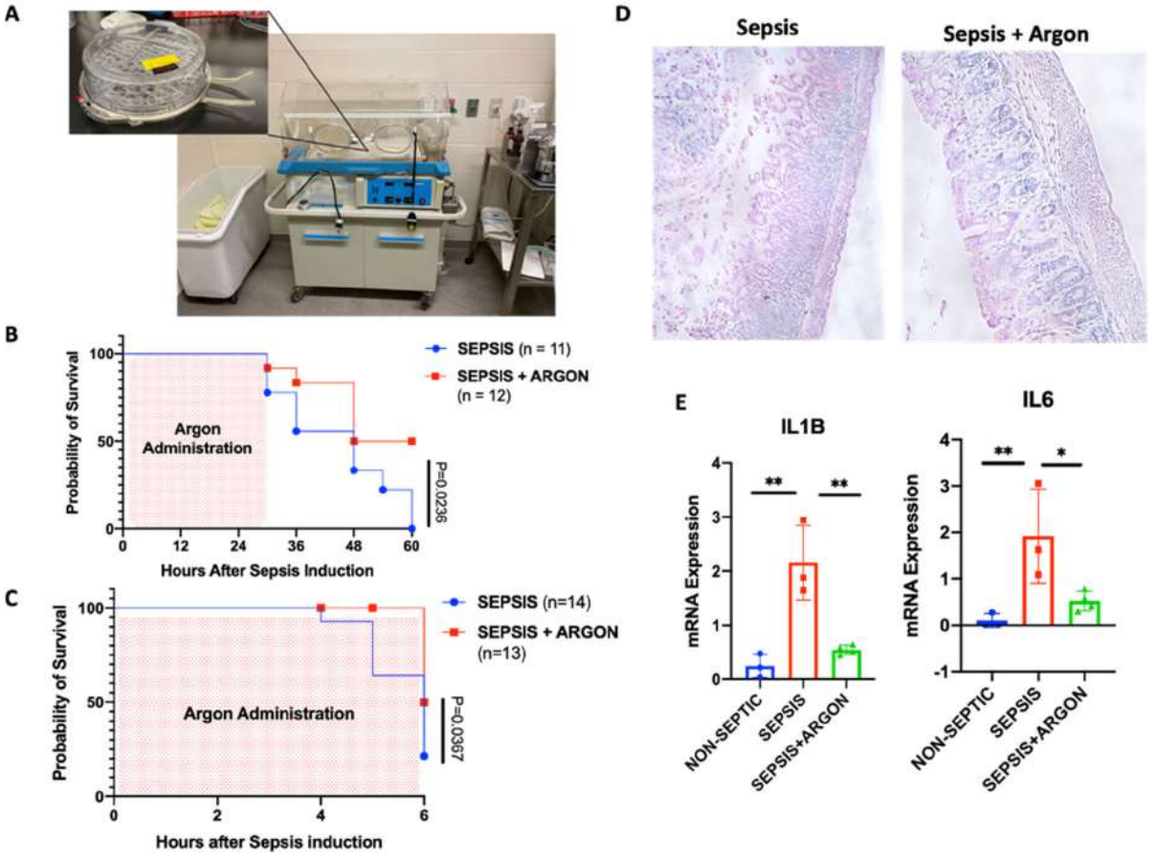
Abstract

Aim of the Study: Sepsis is a leading cause of mortality in neonates. Argon is an emerging interest in the field of noble gas therapy. Neonates with severe sepsis are commonly mechanically ventilated creating an opportunity for introducing a new inhalation therapy. We aimed to investigate argon inhalation as a novel experimental therapy in neonatal sepsis.

Methods: Sepsis was established in pup mice by LPS intraperitoneal injection [20mg/kg] on postnatal day 9. Study 1: Argon was administered by inhalation (70% argon, 30% oxygen) into a chamber housing the pup mice (n=12) for 30 hours. Sepsis controls were housed in the chamber containing room air (n=11). Study 2: To avoid hypothermia, septic mice were receiving argon (n=13) and septic controls (n=14) were maintained in the chamber positioned in an incubator at 35°C for 6 hours (Fig.A). Breastfed pups served as normal controls (n=3). Colon, a target organ in neonatal sepsis, was harvested from survivors.

Main results: Study 1: Argon inhalation significantly reduced sepsis mortality (Fig.B). Study 2: At 35°C temperature, there was 50% survival in argon sepsis compared to 20% in control sepsis (Fig.C). In the colon, inflammatory cell infiltration (Fig.D) and inflammatory cytokines IL1B and IL6 (Fig.E), were significantly decreased in argon sepsis compared to sepsis control (level similar to non-septic mice).

Conclusions: Argon inhalation is a novel treatment for neonatal sepsis, it reduces mortality and counteracts the systemic inflammatory response in the intestine. Argon inhalation can be translated into humans as septic neonates commonly receive mechanical ventilation.


A
B
Probability of Survival
100
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Argon Administration
SEPSIS (n = 11)
SEPSIS + ARGON (n = 12)
P=0.0236
0
12
24
36
48
60
Hours After Sepsis Induction
C
Probability of Survival
100
50
0
Argon Administration
SEPSIS (n=14)
SEPSIS + ARGON (n=13)
P=0.0397
0
2
4
6
Hours after Sepsis induction
D
Sepsis
Sepsis + Argon
E
IL1B
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mRNA Expression
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NON-SEPTIC
SEPSIS
SEPSIS+ARGON

LG04_SO / 15:00 – 15:05

CAN WE PREDICT SURGICAL NECROTIZING ENTEROCOLITIS BY USING LABORATORY MARKERS?

Senem Alkan Ozdemir[1], Ezgi Su Aslan[2], Akgün Oral[3], Şebnem Çalkavur[4], Tülin Gökmen Yıldırım[1]
[1]Health Science University Izmir Faculty of Medicine Department of Pediatrics Division of Neonatology, Izmir, Turkey. [2]HSU Izmir Dr. Behçet Uz Training and Research Hospital Department of Pediatrics, Izmir, Turkey. [3]Health Science University Izmir Faculty of Medicine Department of Pediatric Surgery, Izmir, Turkey. [4]HSU Izmir Dr. Behçet Uz Training and Research Hospital Department of Pediatrics Division of Neonatology, Izmir, Turkey

Abstract

Aim of the Study: We aimed to investigate the development of surgical NEC by examining the neutrophil lymphocyte ratio and acute phase reactants. It was aimed to evaluate the prognostic value between surgical stage and short term morbidity.

Methods: This observational study was conducted between 7 years period. Preterm infants who developed signs of NEC during their NICU hospitalisation were included. The relationship between the leukocyte, neutrophil to lymphocyte count, platelet count, mean platelet volume, platelet mass index and acute phase markers of the infants with NEC stages at 2 and above were investigated.

Main results: During the study period 147 infants were included. 100 infants had stage 2 NEC and 47 infants had surgical NEC. The mean gestational week of the infants included in the trial was 29.1±3.0 (min 23, max 35) weeks. The mean weight of infants was 1284.3±553 grams and 69% of them were in male gender. WBC levels did not differ between the groups. Platelet and NLR were statistically different between the groups ($p<0,05$).Platelet mass index was also statistically higher in surgical NEC group. CRP, sodium, albumin, potasium levels were also statistically different between the groups. Prediction of surgical NEC was evaluated in logististic regression analysis. Platelet levels, potasium, sodium and lactate were significant in predicting surgical NEC.

Conclusions: This is the first study in the literature investigating the prediction of surgical NEC with laboratory parameters. Surgical NEC may be more common especially in the follow-up infants with low sodium value and high potasium and lactate levels. This kind of infants may be follow up more closely.

LG05_SO / 15:05 – 15:10

STEM CELL ACTIVITY IN THE INTESTINAL EPITHELIUM DURING NECROTIZING ENTEROCOLITIS

Andrea Zito, Bo Li, Carol Lee, Mina Yeganeh, George Biouss, Felicia Balsamo, Niloofar Ganji, Agostino Pierro
The Hospital for Sick Children, Toronto, Canada

Abstract

Aim of the Study: Necrotizing enterocolitis (NEC) is associated with impaired intestinal regeneration due to reduced LGR5+ intestinal stem cell activity. The stem cell population in the intestine includes a quiescent subpopulation (Clu). Upon injury, Lgr5 stem cells are regenerated by Clu stem cells which in turn are activated through the Yes-associated protein 1 (YAP) signalling. Additionally, YAP is inhibited upon its phosphorylation (p-Yap). In this study, we investigated Clu stem cell activity and YAP signalling as precursors of intestinal regeneration in NEC.

Methods: Two groups of C57BL/6 mice were studied (n=7): (i) breast-fed mice as control; (ii) experimental NEC mice. NEC was induced between post-natal days P5 and P9 by (i) gavage feeding of hyperosmolar formula four-times a day; (ii) 10 minutes hypoxia prior to feeding; and (iii) lipopolysaccharide administration on P6 and P7. Clu-GFP mice (n=7) were also studied and exposed to same conditions to evaluate Clu stem cells. Mice were sacrificed at P9 and the terminal ileum was harvested for analysis.

Main results: In NEC compared to control, there was reduced expression of both Clu (Fig. A) and YAP as indicated by immunostaining (Fig. B) and protein analysis (Fig. C). Interestingly, p-YAP relative to total YAP was increased in NEC compared to control (Fig. D).

Conclusions: During NEC development, there is inhibition of YAP which results in decreased Clu expression. YAP can be an important regulator of Lgr5 stem cell maintenance and intestinal regeneration. YAP has the potential to be a novel therapeutic target for infants with NEC.

LG06_SO / 15:10 – 15:15

COMPARISON OF SURGICAL OUTCOME BETWEEN DUHAMEL AND TRANSANAL ENDORECTAL PULLTHROUGH PROCEDURE IN HIRSCHSPRUNG'S DISEASE

Juthamas Jenyongsak, Jiraporn Khorana
Chiang Mai University, Chiangmai, Thailand

Abstract

Aim of the Study: This study aimed to compare the outcome between Duhamel's and the Transanal endorectal pull-through (TERPT) procedure in Hirschsprung's disease.

Methods: Hirschsprung's patients who scheduled for Duhamel's operation or Transanal endorectal pull-through (TERPT) from January 2006 to December 2022 were enrolled in the study. The long-term outcomes were composited of obstructive symptoms, enterocolitis, and fecal soiling. Good outcome defined as none of any and poor outcome defined as at least one of any. The secondary outcomes were operative time and estimated blood loss. Propensity score was used for balancing the intention to choose between Duhamel's and TERPT. Multivariable analysis was done by logistic regression reported as odds ratio (OR).

Main results: A total of 193 patients were divided into the Duhamel's operation (39 patients;21%) and the TERPT operation (154 patients;79%). There were no statistically significant differences between obstructive symptoms (41%VS27% p=0.12), enterocolitis (31%VS22% p=0.29) and fecal soiling (23%VS16% p=0.35) among Duhamel's and TERPT group. The multivariable analysis with inverse probability treatment weighting propensity score found that TERPT had better outcome than Duhamel's but failed to show statistically significant (OR=2.1(0.4-11.2) p=0.39) The mean operative time (3.3±0.9 VS 2.0±0.9 hours, p<0.001) and the median estimated blood loss (20(15-50) VS 5(3-10) milliliters, p<0.001) were significantly higher in the Duhamel's group.

Conclusions: There were similar long-term outcome among both operative groups, but the Duhamel's procedure was associated with longer operative time, higher estimated blood loss.

LG07_SO / 15:15 – 15:20

AN UNEXPECTED DIAGNOSIS OF THE RECTAL POLYP: PERIVASCULAR EPITHELOID CELL TUMOR (PECOMA)

Muhammed Hamidullah Çakmak, Nevzat Aykut Bayrak, Handan Çetiner, Serdar Moralıoğlu
Department of Pediatric Surgery, University of Health Sciences Turkey, Hamidiye Faculty of Medicine, Istanbul Zeynep Kamil Women and Children's Diseases Health Training and Research Center, Istanbul, Turkey

Abstract

Aim of the Study: Perivascular epithelioid cell tumour (PEComa) is an extremely rare mesenchymal tumor that arise from perivascular epitheliod cells. Here is presented a child with a rectal PEComa, that have been a few report in the literature.

Case description: A 10-year-old male patient was admitted to the Pediatric Gastroenterology department of our hospital with the complaint of recurrent bloody stools for 4 months and the lesion coming out of the anus with straining. On the anorectal digital examination, a polypoid firm mass was identified on the lateral wall of the rectum. Colonoscopy revealed a large-diameter and overlying hemorrhagic and inflammatory polyp in the 7th cm of the rectum. Otherwise, colonoscopy was normal. In the lithotomy position, 7th cm of the anal verge and location at 3 o'clock, a thick-stemmed polyp with a diameter of 2.5*2cm was excised surgically. In pathological and immunohistochemical examination, the polipoid mass was diagnosed as PEComa and the surgical margin was tumor-free. Abdomino-pelvic MRI for local invasion investigation was normal. The patient is referred to the Pediatric Oncology and Genetics Departments and is being followed up for possible metastasis and genetic investigation.

Conclusions: PEComas have a behavioral spectrum from benign to malignant. Because of unexpected occurrence in the rectum, PEComa may be misdiagnosed in this region. Histopathological morphology, immunophenotype, and molecular identification is necessary for diagnosis, and immunohistochemistry can rule out many of morphologically similar tumors to differential diagnosis. Complete surgical resection, multidisciplinary approach and long-term follow-up are necessary.

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LG08_SO / 15:20 – 15:25

FRENCH EXPERIENCE OF SERIAL TRANSVERSE ENTEROPLASTY (STEP) FOR SHORT BOWEL SYNDROME (SBS).

Claire Dagorno[1], Louise Montalva[1], Carmen Capito[2], Frederic Lavrand[3], Audrey Guinot[4], Stephan De Napoli[4], Remi Dubois[5], Thomas Gelas[5], Jessica Pinol[6], Emmanuelle Dugelay[1], Christophe Chardot[1], Arnaud Bonnard[1]
[1]Debré, Paris, France. [2]Necker, Paris, France. [3]Bordeaux, Bordeaux, France. [4]Nantes, Nantes, France. [5]Lyon, Lyon, France. [6]Bicetre, Paris, France

Abstract

Aim of the Study: Short Bowel Syndrome (SBS) is a cause of pediatric intestinal failure. Surgical management by Serial Transverse Enteroplasty (STEP) is feasible, but few data report long-term results. The objective was to report long-term outcomes of STEP for SBS.

Methods: We performed a multicenter national retrospective study reviewing all cases of STEP over 20 years in six centers. Data analysis included birth, etiology, surgical procedures, enteral or parenteral nutrition (PN), complications, and current follow-up (feeding, digestive symptoms, growth).

Main Results: 36 patients were included: 14 gastroschisis (38,8%), 10 intestinal atresia (27,7%), 8 necrotizing enterocolitis (22,2%), 2 midgut volvulus (5,5%), 2 near-pan intestinal Hirschsprung disease (5,5%). The average follow-up was 10.5(±5,6) years. Median age at first STEP was 10,8 years [4,5; 63,8], and mean weight was 11,6 kg (±9.4). 10 children had a second STEP (27,7%) and 1 a third (2,7%). Two children had an intestinal transplantation (5,5%). 19 children still require PN (52,7%), with a median PN/DER ratio of 86% [69,5; 122,5]. Among 33 (91,2%) children who had PN before surgery, 14 (42,4%) were weaned from PN and 2 still have enteral nutrition (6%). 9 received Glucagon-like-Peptide-2 (GLP-2) (25%), during 2,1±1,3 years. The length gain was +50% (±59%), with 21cm (±15). Regarding follow-up, 14 children (38,8%) have clinical abdominal bloating, 23 radiological (63,8%), and 19 have loose stools (52,7%).

Conclusions: The STEP technique remains an option, allowing sometimes a weaning from parenteral nutrition, and an improvement of clinical symptoms. Further studies could investigate the combination of STEP with GLP-2.

LG09_SO / 15:25 – 15:30

FEASIBILITY AND ACCURACY OF THE EXPERT FETAL ANOMALY SCAN IN PRENATAL DIAGNOSIS OF ANORECTAL MALFORMATIONS

D. Huijgen, H.P. Versteegh, N.C.J. Peters, S. Galjaard, C.E.J. Sloots, R.M.H. Wijnen
Erasmus University Medical Center, Rotterdam, Netherlands

Abstract

Aim of the study: This study aimed to assess the diagnostic value of the expert fetal anomaly scan (eFAS) in the prenatal diagnosis of anorectal malformations (ARM).

Methods: All patients who were surgically treated for ARM in our institution from January 2014 to December 2021 were reviewed. When available, the eFAS images were assessed to evaluate the fetal anus by searching for hyperechoic anal mucosa surrounded by hypoechoic anal sphincter ('target sign'). Furthermore, the presence of bowel anomalies, genital anomalies, and VACTERL associated anomalies were assessed and correlated to postnatal signs. The study protocol was approved by the institutional Medical Ethical Committee.

Main results: 108 patients were analyzed. Thirty mothers underwent an eFAS, which was suspicious of a bowel anomaly in 9 patients (30.0%), and a genital anomaly in 5 patients (16.7%). In 14 patients (46.7%), one or more VACTERL associated anomalies were suspected on eFAS, representing 24 anomalies in total, of which 18 were confirmed postnatally. Furthermore, 16 confirmed VACTERL associated anomalies were not visualized on eFAS. The target sign was assessed in 19 patients, of which 14 patients (73.7%) had an abnormal or absent target sign. In patients with a complex ARM the target sign was absent or abnormal in even 88.9%.

Conclusions: eFAS with evaluation of the fetal anus helps early detection of ARM and could effectuate prenatal counseling of caregivers and optimize perinatal care. Therefore, it should be a standard item of the eFAS.

LG10_SO / 15:30 – 15:35

MULLERIAN ANOMALIES IN POSTPUBERTAL PATIENTS WITH ANORECTAL MALFORMATIONS: LONG-TERM FOLLOW-UP AND COMPLICATIONS.

Isabel Bada-Bosch, María Fanjul, Agustín Del Cañizo, Laura Pérez-Egido, Javier Ordoñez, Samuel Dan Israel, Julio Cerdá, Esther Molina, Juan Carlos de Agustin
Hospital General Universitario Gregorio Marañón, Madrid, Spain

Abstract

Aim of the Study: Our objective is to evaluate postpubertal women with mullerian anomalies operated for anorectal malformations (ARM).

Methods: Retrospective study including patients operated for ARM in our centre, evaluated by Magnetic resonance imaging (MRI), that present an associated genital anomaly (GA) and older than 12 years old.

Main results: Twenty-five patients with a mean age of 20 years were included in the study. The most frequent ARM is cloaca (72%). All patients have other associated anomalies. The most frequent GA are uterine (96%) (didelphys uterus (52%)), followed by vaginal (64%) (vaginal duplicity (40%)). In addition to MAR correction, 72% required some type of genital surgery, the most frequent being dilatation/introitoplasty for vaginal stenosis (7 patients, 54 procedures) and removal of vaginal septum (12 patients). Regarding sexual and reproductive function, 73.9% have menstrual cycles (89.5% of the patients with uterus); mean age at menarche was 12.5 years. Menstrual problems are present in 37.5% and 10% have endometriosis. Thirty-eight per cent of the patients have sexual relationships, with an age of onset of 19.17 years, 25% reported dyspareunia. None of the patients had pregnancies.

Conclusions: Long-term multidisciplinary follow-up of patients with ARM is essential, including screening and follow-up of GA. We highlight the importance of a transition to gynaecology services due to the possible impact on quality of life, gynaecological, sexual, and reproductive health.

LG11_SO / 15:35 – 15:40

THE QUALITY LIFE OF ANORECTAL MALFORMATION PATIENTS: RESULTS OF TERTIARY PEDIATRIC COLORECTAL CENTER

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Abstract

Aim of the Study: In this study, we aimed to reveal the factors affecting bowel functions and quality of life in patients who were operated for anorectal malformation.

Methods: Seventy-eight patients aged over 8 years, who underwent definitive surgery for ARM, and followed up in our clinic between 1985-2014, were evaluated. The Krickenbeck score and the pediatric general quality of life scale (PedsQL), was administered to the patients.

Main Results: The mean age was 17.3±5.5 years and 44 (56,4 %) were male. Rectobulbar and rectoprostatic fistula were most common in boys (77.7%), and rectovestibular fistulas were most common in girls (76.4%). Anoplasty was performed in 22 patients with atresia with perineal fistula, fistulotomy and mucosectomy was performed in three patients with H-type fistula and PSARP was performed in the other 23 patients. According to Krickenberg scoring, 93,5% of patients had voluntary bowel movements. There was no soiling in 56 (%71,7) patients with voluntary bowel movements. The mean pedQL score of all patients in the study was 78.6. The urinary continent was present in 93 % of the patients. The mean PedQL score of the patients who underwent CIC (68.2) and the patients with VUR (70.4) was significantly lower than the mean PedQL score of the patients without urinary system pathology (73.8) ($p<0.05$).

Conclusions: ARM patients had a high rate of fecal and urinary continence and a socially acceptable quality of life in the long-term results. Fecal continence, serious urinary system pathologies, sacral and spinal cord anomalies adversely affected the quality of life.

LG12_SO / 15:40 – 15:45

INTESTINAL EPITHELIAL PROLIFERATION IS PROMOTED BY REMOTE ISCHEMIC CONDITIONING

Carol Lee, Bo Li, Niloofar Ganji, Sinobol Chusilp, Dorothy Lee, Mina Yeganeh, Felicia Balsamo, Agostino Pierro
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Abstract

Aim of the Study: Remote ischemic conditioning (RIC) increases intestinal perfusion in necrotizing enterocolitis. However, the effect of RIC on epithelial regeneration remains unknown. We aim to investigate the effect of RIC on epithelial regeneration using intestinal organoids.

Methods: RIC involved 4-cycles of hindlimb ischemia followed by reperfusion in pup mice. Blood was collected from RIC and non-RIC (control) pups, and plasma was obtained. Intestinal organoids were derived from crypts of small intestine and monitored daily. Organoids were derived from pups receiving RIC (RIC organoids) or from control pups (control organoids) (Fig.-A). Control organoids were exposed to plasma from control and RIC animals (Fig.-B). Vascular barrier was generated using Transwell system where endothelial cells were seeded onto Transwell membrane for 1 day (mimicking leaky vasculature as in injury state) or after confluence of cells (mimicking tight endothelial barrier as in healthy state) (Fig.-C). RIC or control plasma was added above the transwell membrane to evaluate the effects on organoid proliferation (Fig.-D and E).

Main results: RIC organoids had increased proliferation compared to control organoids (Fig.-A). RIC plasma prolonged organoids survival up to 72 hours compared to 12 hours for control plasma (Fig.-B). RIC plasma maintained organoid viability in both leaky and tight vasculature barrier up to 72 hours (Fig.-D). Organoids exposed to control plasma died by 24 hours in a leaky environment and continued proliferating up to 72 hours only in tight endothelial barrier (Fig.-E).

Conclusions: RIC enhanced intestinal organoids proliferation. The beneficial effects are transferred by plasma despite endothelial barrier integrity being compromised.

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LG13_SO / 15:45 – 15:50

IS INVASIVE MECHANICAL VENTILATION (IMV) NECESSARY TO MANAGE PATIENTS WITH GASTROSCHISIS?

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Abstract

Aim of the study: The treatment of gastroschisis has been simplified using preformed silos and sutureless closure. Some groups still use the IMV as an important tool in the initial treatment. We describe our experience in treating patients with gastroschisis without IMV.

Methods: Retrospective cohort of patients with gastroschisis treated with preformed silos and sutureless closure, between January 2014 and June 2021. Patients that arrived at the hospital with IMV were excluded. We analyzed the IMV vs. no-IMV patients, comparing demographic data, cause of IMV, length of stay, and mortality.

Main results: 109 patients were included: 68 male (62.4%), with a median weight of 2.280 kg. Fifty-one patients (46.8%) didn't require IMV. Fifty-eight patients (53.2%) required IMV, the causes were: elective surgery (n=16 cases; 14.7%), apnea (23; 21.1%), respiratory insufficiency (4; 3.7%), sepsis/pneumonia (8; 7.3%) and urgent surgery in 7 patients (6.4%). The-Gastroschisis-Prognostics-Score, gestational age, and weight didn't show a significant difference in the IMV vs. no-IMV groups. The group of patients that didn´t require IMV showed a significant minor length of stay (32.4 vs. 60.3 days, p= 0.003), earlier tolerance to full enteral feeds (21.9 vs. 31.6 days, p= 0.002), and minor mortality (0% vs 6%, p= 0.029).

Conclusions: IMV is not mandatory in the management of patients with gastroschisis. No-IMV is safe and associated with less length of stay, and earlier full enteral feeds. The weight, GPS, and gestational age in this study weren´t risk factors for IVM.

LG14_SO / 15:50 – 15:55

QUALITY INDICATORS OF SURGICAL CARE IN HIRSCHSPRUNG'S DISEASE: A SYSTEMATIC LITERATURE REVIEW

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Abstract

Aim of the Study: To enable benchmarking in Hirschsprung's disease (HD) care, selecting the right quality indicators is essential. This review aimed at generating an overview of process-, outcome- and baseline variables, serving as foundation for a longlist of potential HD quality indicators.

Methods: A systematic review of literature on the main HD care process was performed following PRISMA guidelines. Relevant literature published between 2015 and 2021 was obtained by combining the term "Hirschsprung's disease" with "treatment outcome", "complications", "mortality", "morbidity", "survival" in Medline, Embase and the Cochrane library. We extracted reported process- and outcome parameters and patient- and disease characteristics.

Main results: 276 publications fulfilled the inclusion criteria, 78 were excluded after abstract screening. From the included publications, 995 parameters were extracted and categorized into patient characteristics (n=219), care process characteristics (n=242) and outcomes (n=568). One-hundred-fourteen parameters were reported in more than 5% of publications. The most frequently reported patient and care characteristics were sex (87%), age at surgery (65%), extent of aganglionosis (50%) and type of surgical repair (52%). The most frequently reported outcomes were postoperative Hirschsprung's associated enterocolitis (63%), fecal incontinence (55%), and constipation (49%).

Conclusions: To establish a core indicator set for HD, potential quality indicators will be translated from the most frequently identified parameters in this review, followed by selection through a Delphi procedure. This set will enable benchmarking of HD care in European pediatric surgical centers within ERNICA and beyond. Resulting insight in practice- and outcome variation may contribute to overall improvement of HD care.

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LG15_SO / 15:55 – 16: 00

ANAL SENSIBILITY IS NOT ENTIRELY REGULATED BY THE INFERIOR NERVE BUT SEEMS TO BE REGULATED BY ANOTHER NERVE PATHWAY

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Abstract

Aim of the Study: Current literature states that anal sensibility is regulated by the inferior rectal nerve, which enters the anal canal through the wall and from the distal and lateral side. However, patients born with anorectal malformations who undergo surgery during which the anal canal is dissected from its surrounding tissue do not all suffer from decreased anal sensibility. We propose another nerve pathway that regulates anal sensibility.

Methods: We performed a retrospective, observational study. We included 68 patients born with anorectal malformations who underwent anorectal function tests at the University Medical Center Groningen. We measured anal sensibility and the presence of the internal anal sphincter (IAS) according to type of malformation and type of treatment.

Main results: The mean anal sensibility was 7,2 mA (SD 5,2). Normal anal sensibility was present irrespective of the type of malformation. Anal sensibility was only decreased in 20 patients that underwent corrective surgery. Anal sensibility was related to the amount of distal intestine, including the IAS, that was saved during surgery.

Conclusions: Normal anal sensibility can be present in patients born with ARM, even after the anal canal was resected from its surrounding tissue. This means that the inferior rectal nerve does not entirely regulate anal sensibility because this nerve would be damaged during surgery. Thus, it is possible that another nerve, not yet identified, regulates anal sensibility - a nerve that enters the bowel more proximally and courses in the wall of the bowel to the anal canal and therefore remains intact after surgical intervention.

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LG16_SO / 16:00 – 16:05

ENUCLEATION FOR INTESTINAL DUPLICATIONS: A COMPARATIVE STUDY WITH INTESTINAL RESECTION AND ANASTOMOSIS

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Abstract

Aim of the study: Intestinal duplication enucleation (IDE) has been described as an alternative approach to intestinal resection with primary anastomosis (IRA), but no comparative studies have been published. The aim of this study was to compare the two surgical procedures for intestinal duplication.

Methods: A retrospective study was performed, including pediatric patients treated for intestinal duplication (2005-2022). Patients that underwent IDE were compared to those that underwent IRA. Data were compared using t-tests or contingency tables. Statistical significance was determined using $p<0.05$. Ethical approval was obtained.

Main Results: A total of 51 patients were treated for intestinal duplication, including 27 patients (53%) that underwent IDE and 24 IRA (47%), at a median age of 5 months. 25 (49%) were girls. Prenatal diagnosis was made in 74% (n=20) of IDE and 21% (n=5) of IRA (p=0.0002).Preoperative complications were present in 30% with IDE (n=8) and 71% with IRA (n=18) (p=0.005).There was no difference in operating time (94min for IDE vs 98min for IRA, p=0.3).Enucleation was performed using laparoscopy in 8 patients (30%). Patients that underwent IDE had shorter time to first feed (1 vs 3 days, p=0.0003) and length of stay (4 vs 6 days, p= 0.0009) compared to IRA. The rate of post-operative complications was similar (7% for IDE vs 13% of IRA, p=0.6). No reintervention was necessary. Enucleation was attempted in 3 (6%) patients that underwent IRA.

Conclusions: Duplication enucleation is associated with reduced length of stay and time to first feed, without increasing surgical time and complications.

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LG17_SO / 16:05 – 16:10

TRANSITION OF CARE FOR PATIENTS WITH CONGENITAL COLORECTAL DISEASES IN EUROPE

Cunera de Beaufort[1], Dalia Aminoff[2], Ivo de Blaauw[3], Jens Dingemann[4], Natalie Durkin[5], Wout Feitz[3], JoAnne Fruithof[6,7], Caterina Grano[8], Carmen Mesas Burgos[9], Nicole Schwarzer[10], Graham Slater[6], Tutku Soyer[11], Christiano Violani[8], Rene Wijnen[12], Paolo de Coppi[5], Ramon Gorter[1]
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Abstract

Aim of the Study: Transition of care (childhood into adulthood) of patients with congenital colorectal diseases (anorectal malformations (ARM) and Hirschsprung's disease (HD)) ensures continuous monitoring of these patients. The aim of this international study was to assess the current status of transition of care programs for patients with congenital colorectal diseases.

Methods: A survey was developed by members of EUPSA, ERNeUROGEN, and ERNICA, including patient representatives (ePAGs), comprising four domains: general information, general questions of transition to adulthood, and disease specific questions regarding transition of care and adult care programs. Recruitment of centres was done by ERN's and EUPSA, using mailing-lists and socialmedia accounts. Data were reported with descriptive statistics.

Main results: In total, 82 centres from 21 different countries entered the survey. Approximately half of them was a member of an ERN network. Some 72 centers (87.8%) had an area of expertise for both ARM and HD. Transition of care programs were installed in 44% of the centres and adult care programs in 31% of the centres. Large variety of the programs amongst centres was present. Adult surgeons were mentioned as most suitable caregivers for adult patients with ARM or HD, whereas pediatric surgeons were mentioned as the doctor who should be responsible for the transition.

Conclusions: Despite awareness of the importance of transition of care and adult care programs, these programs were only installed in less than 50% of the participating centres. Various transition and adult care programs were applied, with large heterogeneity in implementation, content and responsible caregivers involved.

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LG18_SO / 16:10 – 16:15

GOOD FECAL CONTINENCE DESPITE OBSTRUCTIVE SYMPTOMS AND FREQUENT MUCOSAL INFLAMMATION AFTER PROCTOCOLECTOMY AND ILEOANAL ANASTOMOSIS FOR TOTAL COLONIC AGANGLIONOSIS

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Abstract

Aim of the Study: Bowel dysfunction is common after surgical repair of total colonic aganglionosis (TCA) for unclear reasons. We analyzed fecal continence in relation to obstructive symptoms and bowel inflammation in TCA patients treated in our hospital by proctocolectomy and ileoanal anastomosis (PC-IAA).

Methods: Altogether, 17 TCA patients (14 males) underwent PC-IAA with (n=14) or without J-pouch during 1997-2022. Bowel control, endoscopy findings and fecal calprotectin were recorded at latest follow-up.

Main results: Median age at PC-IAA was 4.9 (range 0.4-51) months. Aganglionosis extended to ileum in 11 patients (Table). Temporary ileostomy was closed 2.7 (1.4-5.5) months after PC-IAA. Median pouch length was 3.5 (3-5) cm. One patient with severe intestinal dysmotility and redo PC-IAA after transitional zone pull-through remains on supplemental parenteral nutrition. Among 15 patients aged >2.5 years, median age was 11 (5.3-19) years, 13 (87%) reported no soiling or staining, none used protective aids, and median 24-hour stooling frequency was 4 (2-10). Any nighttime bowel motions were reported by 6 (40%). Five patients with recurrent outlet obstructions w/wo enterocolitis required median 11 (5-16) intersphincteric Botox injections. Although median calprotectin was within normal range, calprotectin was increased to 248 (154-578) ug/g in 7 (47%) patients, 4 of whom had outlet obstructions. Endoscopy revealed histological mucosal inflammation in 6/14 (43%).

Conclusions: While school-age children with TCA had good fecal continence following PC-IAA, recurrent obstructive symptoms occurring in one third were effectively treated with Botox injections in majority. Frequent mucosal inflammation requires endoscopic follow-up and further investigations.

Table. Key characteristics and outcomes of TCA patients after ileoanal anastomosis	
Age at PC-IAA, m	4.9 (0.4–51)
Ileum resected, cm	15 (0–50)
Temporary covering loop-ileostomy, n	16/17
Age at ileostomy closure, m	7.1 (2.2-53)
Prolonged (>1 month) parenteral nutrition (PN), n	3/17
Duration of PN, y	2.1 (1.6-3.0)
Patients with obstructive symptoms, n	5/16
Intersphincteric botox injections, n	11 (5-16)
Fecal calprotectin, ug/g	91 (5-578)
>100 ug/g	7/15
Endoscopic pouch examination, n	15/17
Macroscopic inflammation, n	3/15
Histological inflammation, n	6/14
Data are median (range) or frequency.	

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LG19_SO / 16:15 – 16:20

FAMILY EXPERIENCES WITH HEGAR DILATOR. PROPOSAL FOR A NEW DESIGN

Beatriz Zamora Vidal[1], María de la Luz Montes Pacheco[2], Eva Domínguez Amillo[2], Luis Felipe Ávila Ramírez[2], Jaime Rodríguez de Alarcón García[2], Manuel Gómez Cervantes[2], Pilar Guillén Redondo[2], María del Carmen Soto Beauregard[2]
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Abstract

Aim of the Study: Home anorectal dilation with the Hegar dilator is part of the protocol in most pediatric colorectal procedures, but it sometimes generates anxiety and anguish in tutors. The objective of this study is to evaluate the family experience with the use of Hegar dilator and collect their perception of a new dilator design, which is intended to be a less traumatic alternative for caregivers.

Methods: Retrospective study: An anonymous questionnaire, validated by the Quality Commission, consisting of 23 items on the perception and experience with Hegar dilators was administered to the caregivers of patients operated on for colorectal pathology between 2015 and 2022, who followed a home dilation protocol. After that, they were shown the new dilator model and their impression of it was collected.

Main results: Twenty-one patients operated on for anorectal malformation and one patient for Hirschsprung's disease were contacted. 100% of those surveyed affirm that the information received before leaving hospital was complete, although 84% later felt insecure when performing the dilations at home, especially regarding the length that they had to introduce (54%) and fear of harming the child (76%). Most report (86%) that the steel dilator is very cold and rigid. 70% describe the new dilator as less unpleasant, more flexible, warm, practical, and easy to use.

Conclusions: Most families perceive the experience with Hegar dilator negatively. The use of the new polyvinyl dilators could contribute to improving the experience of caregivers, without detriment to the process of anorectal dilation.

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LG20_SO / 16:20 – 16:25

LONG-TERM OUTCOMES OF BOWEL AND URINARY TRACT FUNCTION FOR FEMALES SURGICALLY TREATED FOR ANORECTAL MALFORMATION

Joshua Gertler[1,2], Anna Gunnarsdóttir[1,2], Jenny Oddsberg[1,2], Anna Svenningsson[1,2], Tomas Wester[1,2], Lisa Örtqvist[1,2]
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Abstract

Aim of the Study: The primary aim was to investigate bowel and urinary tract function in females operated for anorectal malformation (ARM). The secondary aim was to investigate if ARM subtype influences these long-term outcomes.

Methods: This was a cross-sectional questionnaire-based observational study including females treated for ARM at our institution between 1994 and 2017. The bowel function was assessed with bowel function score (BFS) and urinary tract function with Lower Urinary Tract Symptoms (LUTS) questionnaires. Patient characteristics were retrospectively retrieved from the medical records and descriptive statistics were used for analysis. Outcomes were compared with normative Finnish data. The ethics review authorities approved the study.

Main Results: Forty-four (43.1 %) of 102 females responded to the questionnaires. One patient had a colostomy and was excluded from analysis. Ten (34.5 %) of 29 patients aged 4 to 17 years and 4 (28.6%) of 14 patients >18 years of age, respectively, reported a well-preserved bowel function (BFS≥17), Figure 1. Constipation issues decrease with age. BFS was similar in patients with perineal and vestibular fistulas. Thirty-six (83.7%) of the patients had at least one LUTS. Further, adult patients appear to have a less severe LUTS when compared with females < 18 years of age and no adult patients had issues with involuntary urinary leakage.

Conclusions: Only 28.6 % of the adult patients reported a well-preserved bowel function, which was similar to the proportion reported by children 4-17 years of age. LUTS was common, but less severe in adult patients.

LG21_SO / 16:25 – 16:30

TREATMENT STRATEGY OF CHILDREN WITH FAMILIAL ADENOMATOUS POLYPOSIS: PREDICTORS OF TOTAL COLECTOMY AND OUTCOMES. A SINGLE-CENTER EXPERIENCE.

Linara Khabibullina, Olga Shcherbakova
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Abstract

Aim of the Study: Prophylactic colectomy at a premalignant stage is the most important question in treatment children with familial adenomatous polyposis (FAP). To search predictors of surgery in children with FAP and analyze complications and outcomes.

Methods: This cross-sectional study included of 46 children with FAP. Patients were divided into 2 groups: surgical (24) and non-surgical (22). The age at onset of the disease, the characteristics of adenomas, the presence of anemia and family history, concomitant polyposis of the upper gastrointestinal tract (GIT) were analyzed. Statistical analysis: comparison was performed by unpaired t-test, Fisher's test. P-values of <0.05 were considered significant.

Main results: There were no differences in gender, age of manifestation, anemia severity, or polyp size. The median number of polyps was different in the groups (850 (500-1000) and 100 (15-500), p=0.0001). Polyposis of the stomach (19% and 3%, p=0.01) and duodenum (11% and 3%, p=0.04) were also more common in the surgical group. Logistic regression revealed that polyps over 850 were an independent predictor of colectomy (OR: 10.7; 95% CI: 1.9–92, p=0.01). Early and late complications after IPAA occurred in 8% and 23% of patients. The most common complication after IPAA was the stenosis of the ileal pouch-anal anastomosis. Stenosis was successfully treated by a single dilation in all cases. The median of stool frequency after surgery is 6 (4,8) per day.

Conclusions: The number of polyps over 850 is a predictor of colectomy. Ensuring an acceptable quality of life for children with FAP remains priority.