ABSTRACT BOOK

P3

THE SAFETY AND EFFECTIVENESS OF SINGLE-STAGE, VESSEL-PRESERVING, LAPAROSCOPIC ORCHIOPEXY FOR INTRA-ABDOMINAL TESTES IN PEDIATRIC PATIENTS: A 10-YEAR SINGLE CENTRE EXPERIENCE

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Purpose: To evaluate the safety and long-term efficacy of a single-stage, vessel-preserving, laparoscopic orchiopexy for intra-abdominal testes in children.

Methods: A retrospective search of the medical records of 32 children (34 testes) who underwent single-stage, vessel-preserving, laparoscopic orchiopexy for intra-abdominal testes between January 1, 2014 and December 31, 2023 was performed. The volume of each patient's testes was measured by ultrasound before and 6 months after laparoscopic orchiopexy. The main outcome was testicular volume before and after the procedure. Secondary outcomes were the occurrence of early and late complications, the duration of surgery and the length of hospital stay.

Results: The median age at the time of surgery was 10 months (IQR 9, 13). A normal testis was found in 24 patients (70.6%), while a hypotrophic testis was visible in 10 cases (29.4%). The majority of testes were located near the internal ring (n=19; 55.9%), while in the remaining cases the testes were located near the iliac blood vessels. The median duration of the surgical procedure was 37.5 min (IQR 33, 42.5). The duration of hospitalization was one day for all children. No intraoperative complications were observed. One child had a wound infection at the site of the umbilical trocar. In two cases (5.5%), testicular atrophy was detected during long-term follow-up. In three cases, the testis was found in a higher position in the scrotum during the follow-up period. At long-term follow-up with a median of 35 months (IQR 19, 60.5), the overall success rate was 94.5%. The median testicular volume at 6-month follow-up increased from 0.31 ml (IQR 0.28, 0.43) to 0.40 ml (IQR 0.33, 0.53) (p=0.787).

Conclusion: Single-stage, vessel-preserving, laparoscopic orchiopexy for intra-abdominal testes is safe and effective in pediatric patients in whom adequate spermatic cord length can be achieved during the procedure.

Categories

Urology

SO4

LAPAROSCOPICALLY ASSISTED KONO-S ANASTOMOSIS IN CROHN'S DISEASE: INITIAL EXPERIENCE IN PEDIATRIC PATIENTS

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Purpose: Children diagnosed with Crohn's disease (CD) often undergo ileocecal resection (ICR) during childhood. Anastomotic recurrence is a frequent finding following this procedure. Data addressing the effect of the anastomosis type on disease recurrence are scarce in the pediatric population. The Kono-S anastomosis has shown promise in reducing endoscopic, clinical, and surgical recurrence rates in adults.

We aimed to report our experience with laparoscopically assisted Kono-S anastomosis in children, focusing on its feasibility and postoperative complications.

Methods: Retrospective study of pediatric CD patients who underwent ICR with Kono-S anastomosis between August 2022 and May 2023. Data on demographics, clinical characteristics, surgery, hospitalization, and follow-up including colonoscopy were collected. Complications were classified using the Clavien-Dindo classification.

Results: Twelve patients (7 females, 58.3%) were included. Six (50%) of the patients had the B3 luminal form of the disease (according to Paris classification). Median surgery duration was 174 (interquartile range [IQR] 161–216) minutes. Anastomosis creation took a median of 62 (IQR, 54.5–71) minutes. Median hospitalization length was 6 (IQR 4–7) days. No short- or mid-term complications were observed. There has been complete endoscopic remission in 6 of 10 patients (60%; Rutgeerts score Ri0 and Ri1). Median follow-up duration was 10.5 (IQR 7.8–13) months.

Conclusion: Our data demonstrate that laparoscopically assisted Kono-S anastomosis seems to be a safe and feasible procedure with a low probability of postoperative complications in the pediatric patients with CD. Our results support the surgical results with Kono-S anastomosis in adults from the view of postoperative complications.

Categories

Gastrointestinal

SO5

WHAT IS THE PROGNOSIS FOR CHILDREN WITH HORSESHOE KIDNEYS WHO UNDERGO LAPAROSCOPIC TREATMENT FOR EXTRINSIC URETEROPELVIC JUNCTION OBSTRUCTION?

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Introduction: The horseshoe kidney (HSK) is a renal fusion and malrotation anomaly, occurring in approximately 1 in every 500 individuals. Extrinsic ureteropelvic junction obstruction (UPJO) is commonly associated with HSK due to crossing of aberrant renal vessels. The aim of the study was to compare the results of laparoscopy for extrinsic UPJO in children with HSK vs non-fused kidneys in a single center.

Methods: Patients who underwent laparoscopic treatment for extrinsic UPJO from 2007 to 2022 at a single center were prospectively collected. Demographic data, clinical, surgical and radiological variables were analyzed.

Results: In this period, 266 laparoscopies were performed for UPJO: 184 due to intrinsic obstruction and 82 extrinsic (15 HSK, 67 non-HSK). Mean age of patients was 8.49 (1-18) years. There were 93.3% boys in HSK vs 58.2% in non-HSK. There were no statistical differences between the groups in terms of weight, laterality, preoperative renal function, caliceal and renal pelvis antero-posterior diameter. 90.2% of patients were operated on with dismembered pyeloplasty (DP) and 9.8% through vascular hitch (VH): 1 HSK and 7 non-HSK. Mean operative time were comparable between groups except for VH, which was shorter in non-HSK group (115 vs 165 min). All HSK patients had a stent, while 11.9% of non-HSK patients did not. Mean hospital stay was lower in HSK group: 4.1 vs 5.5 days. After a mean follow-up of 4.5 years, the complication and success rates were higher in non-HSK: 16.4% vs 0%. The main complication was urinary leak in 9 cases. Three patients required redo surgery in non-HSK group due to restenosis of the ureteropelvic junction.

Conclusion: Laparoscopic treatment is safe and feasible in children with extrinsic UPJO in horseshoe kidneys, with good results and minimal morbidity.

Categories

Urology

SO6

PNEUMOVESICOSCOPIC DIVERTICULECTOMY IN SYMPTOMATIC CHILD

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Introduction: A bladder diverticulum is a herniation of the bladder mucosa between the fibers of the detrusor muscle. They are most frequently observed next to the ureteral meatus. Our aims are to report a pneumovesicoscopic bladder diverticulectomy in a symptomatic child and to show the key points of the technique.

Case Report: A 9-year-old boy referred to the pediatric urology office of our center for recurrent urinary tract infection and hematuria. Ultrasonography showed a bladder diverticulum in the right posterolateral bladder wall. Voiding cystourethrography (VCUG) confirmed the large right paraureteral bladder diverticulum and showed no urethral abnormalities or vesicoureteral reflux.

Technique: The procedure was performed under general anesthesia. Initially, in lithotomy position, cystoscopy was performed and a double-J catheter was placed in the right ureter to improve its intraoperative identification. The bladder was fixed to the abdominal wall with two percutaneous stitches; one 5mm and two 3mm trocars were inserted under cystoscopic vision. A 10Fr Foley urethral catheter was placed. Then, in the supine position, cystoscopic insufflation of the bladder with carbon dioxide was performed. The neck of the diverticulum was marked with a monopolar hook and dissection was performed by carefully inverting the diverticulum. After excision, the resulting defect in the posterior bladder wall and trocar orifices were closed with resorbable stitches. The patient was discharged on the first postoperative day with Foley catheter. Both postoperative ultrasonography and VCUG were normal.

Comments: Pneumovesicoscopic diverticulectomy is a feasible and safe procedure. It allows a faster recovery, with a good cosmetic result.

Categories

Urology

SO8

ESOPHAGEAL ATRESIA WITH MULTIPLE COMPLICATIONS: REPEATED THORACOSCOPY AND PRESERVATION OF THE NATIVE ESOPHAGUS IS FAISEBLE.

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Objective: Thoracoscopy for esophageal atresia offers advantages over conventional surgery. Independently, postoperative complications (leakage, stenosis, broncho-esophageal fistula) can occur, mainly in long gap esophageal atresia. The aim of the study is to evaluate its contribution and its feasibility in the event of multiple surgery for complications after esophageal atresia treatment.

Methods: The records of children operated on several times by thoracoscopy after primary surgery for esophageal atresia between 2015 and 2023 were reviewed retrospectively. Long gap esophageal atresia staged repair and the occurrence of complication (stenosis, anastomotic leaks and broncho-esophageal fistula) not responsive to conservative management were the indications for multiple surgery. Preoperative, operative, and postoperative data were collected.

Results: Eight patients and 31 thoracoscopies were included (2 esophageal atresia type C, 3 esophageal atresia type A, and 3 esophageal atresia type B). In only 2 patients (type C) it was possible to do the anastomosis. The remaining 6 patients (3 type A, 3 type B) underwent internal traction. The median number of thoracoscopies was 3.5 (2-7). A total of 24 complications occurred in 8 patients: 11 required a thoracoscopic approach, 13 were treated conservatively. The operative time increased progressively in each reintervention. With a median follow-up of 51 months (3-63), all patients were alive. Six had gastro-jejunostomy with enteral nutrition and oral feeding. One patient is on an endoscopic dilation program for an anastomosis stenosis. All but 2 kept their native esophagus.

Conclusion: Thoracoscopic surgery provides an optimal approach in case of multiple surgeries allowing to preserve the native esophagus in 75% of the cases.

Categories

Thorax

P9

LAPAROSCOPIC TREATMENT OF ADHESIVE SMALL BOWEL OBSTRUCTION IN CHILDREN

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Pediatric patients undergoing laparotomies are at risk for adhesive small bowel obstruction (ASBO) over their lifetime. Despite being an independent risk factor for subsequent adhesive bowel obstruction, the open adhesiolysis remains the most useful method of treatment of children with ASBO. The applying of laparoscopic adhesiolysis for the treatment of ASBO is still controversial and widely does not accept among the pediatric surgeons.

The aim of this study was to conduct the retrospective review of patients with ASBO managed via laparoscopic approach.

This study was based on results of retrospective analysis of medical files of 116 children who underwent management of ASBO via laparoscopic approach from 2014 till 2022 years.

The laparoscopic adhesiolysis was performed in 98 (84.5%) of patients and laparoscopic-assisted small bowel resection in 18 (15.5%) of patients. In these patients, the diagnostic stage, adhesiolysis, and bowel mobilization performed laparoscopically, and the resection of necrotic bowel and anastomosis fulfilled extraperitonealy.

Adhesiolysis performed by applying the scissors, monopolar cautery, and in some cases by ultrasonic scalpel.

Single obstructive band, mainly around ileocecal valve, was revealed in 66 (56.9%) patients, the diffuse dense bands – in 33 (28.4%) children, and in 17 (14.7%) children the volvulus of intestinal loop around Meckel's diverticulum was noted. The laparoscopic adhesiolysis was completed in all children with single and diffuse adhesions that permit in 94.9% of them to avoid the necessity of re-operations.

The wound infection was noted in 6.5% of patient and re-laparoscopy due to the recurrent ASBO performed in 5 (4.3%) patients.

By the presence of appropriate skills, the laparoscopic adhesiolysis can be the real alternative to the laparotomy for the treatment of children with ASBO. The laparoscopic adhesiolysis associated with the fewer incidences of severe postoperative complications compared with the open approach.

Categories

Gastrointestinal

LO10

LAPAROSCOPIC TREATMENT OF INGUINAL HERNIA IN NEWBORNS

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Inguinal hernias are the sufficient common pathology in newborns, especially of premature and low-wight infants. The timing and method (laparoscopic or open) of hernia repair in newborns is still controversial.

The aim of the study was analyzed the results of inguinal hernia repair in newborns by the applying of PIRS method.

This study was based on results of retrospective analysis of medical files of 76 newborns that were operated from 2010 till 2022 years.

Among all patients, there were 36 (47.4%) premature and 40 (52.6%) in-term infants. During first week after birth (early surgery) were operated 20 (55.6%) premature and 27 (67.5%) in-term infants. Indications for the early surgery were incarcerated hernia (in 12 patients), the irreducible hernia (in 13 patients), the presence of small intestine loops or ovaria in the hernia sac (8 patients), and the absence of serious comorbidity that can provoke the respiratory and cardiovascular disorders in the postoperative period (14 patients). During first month of life were operated 29 (38.2%) infants, 21 of them had the elective herniorrhaphy and 8 were operated with incarcerated hernia. Indications for the delayed surgery were necessity for prolonged ventilatory or inotropic support, babies had episodes of apneas/bradycardia or severe ischemic insults of CNS, and body weight was lower than 1.500 g.

Duration of surgery was 14.4±0.34 min in case of early and 12.3±0.32 min of delayed surgery ($p=0.00012$). Surgical site infection developed in 2 (4.3%) patients after early and in one (3.4%) patient after delayed surgery ($p=0.90935$), hernia recurrence was noted in 4 (8.5%) infants after early and in 2 (6.9%) – after delayed surgery ($p=0.86931$).

Thus, the PIRS method suitable for inguinal hernia repair in newborns due to its simplicity and can be applied in those born prematurely.

Categories

Miscellaneous

P12

MINIMALLY INVASIVE SURGERY FOR ADRENAL MASSES IN CHILDREN: RESULTS OF A BI-CENTRIC SURVEY AND LITERATURE REVIEW

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Introduction*:* Minimally invasive surgery for adrenal pathologies in children is still developing because of the low incidence of adrenal masses in pediatric population and the discrepancy between the size of the mass and the child's one. In Literature there are no any guidelines about the use of laparoscopic adrenalectomy in children. The aim of this study is to evaluate the outcomes of minimally invasive surgery through a bi-center data analysis in order to propose a standardized protocol.

Methods: Children who underwent minimally invasive adrenalectomy between 2000 and 2020 performed by two expert Pediatric surgeons at two European departments of Pediatric Surgery were included in this study. Data were collected and analyzed using X-square, Fisher tests, multiple regression model.

Results: 34 patients (38 adrenal masse)s were included. Mean age was 52 months 3 – 176]. Median lesion diameter was 60 mm [40-125mm]. Histological examination revealed 24 neuroblastomas, 11 pheochromocytomas, 1 teratoma, 1 adrenal cyst and 1 Myelolipoma. Laterality was 52.6% left, 36.8% right and 10.5% bilateral. Surgical access was trans-peritoneal in all patients. Mean operative time was 108 min for unilateral lesions and 270 min for bilateral ones. Mean hospital stay was 4.4 days. No major intra operative complications were observed. 21.05% neuroblastomas were preventively approached with a laparoscopic access and were converted to open surgery. Median follow-up was 88 months [24-264]. 4 patients affected by neuroblastoma reported metastatic dissemination and 3 died.

Conclusions: Pediatric minimally invasive adrenalectomy was a safe and effective procedure, it allows surgeons to reduce the size of laparotomies starting the dissection of the masses and it has low rate of complication if we consider small masses. The only absolute contraindication is persistent IDRF for neuroblastomas. It should be considered the first-line treatment for selected adrenal masses in centers with good experience in laparoscopy.

Categories

Oncology

SO13

Three-dimensional printed model for thoracoscopic repair of esophageal atresia with tracheoesophageal fistula: inexpensive and reusable inanimate model for MIS training

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Background: Thoracoscopic repair of esophageal atresia (EA) and tracheoesophageal fistula (TEF) presents technical challenges. This study aimed to create an affordable, reusable synthetic tissue model for simulating EA/TEF repairs and assess its validity.

Methods: Utilizing 3D printing and silicone casting, we developed an inexpensive and reusable inanimate model for training in thoracoscopic EA/TEF repair. Validation involved a 5-point Likert scale and Objective Structured Assessment of Technical Skills (OSATS). Anastomosis quality was evaluated by knot count and luminal passage using flexible endoscopy. Anastomosis strength was measured using a spring force meter.

Results: Eighteen participants (7 medical students, 4 paediatric surgery trainees, and 7 experienced surgeons) performed TEF ligation, dissection, and oesophageal anastomosis on the EA/TEF simulator (Figure 1. a, b). All expert participants completed tasks within the time limit, while only 4 (57%) novices/intermediates did. OSATS scores for "flow of task" ($p = 0.018$) and "overall MIS skills" ($p = 0.010$) differed significantly, distinguishing novice/intermediates and experts. The simulator received a mean score of 4.66 for training suitability, with realism and working environment scores of 4.25 and 4.5, respectively. Face validity was significantly lower in the expert group ($p=0.0002$). Among 10 models, only 5 demonstrated sufficient anastomosis with 6 stitches each, all from the expert group. Four models showed adequate strength under tension, while one was too tight for effective lumen passage (Figure 1. c,d).

Conclusions: The study established good face and content validity for the simulator, promising reusability and suitability for individual participants. However, novices and trainees faced challenges with advanced minimally invasive surgical procedures. A structured paediatric MIS training curriculum is essential for optimal use of available training hours.

Figure 1.pdf

Categories

Robotics and Innovations

P14

Laparoscopic management of paediatric renal tumors: Our Experience

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Introduction: Management of pediatric renal tumors by minimally invasive approach is beginning to be explored. This brief report is aimed at discussing the practical challenges faced by pediatric surgeons when attempting a laparoscopic resection.

Methods: Our retrospective analysis was based on Electronic medical records of the study period starting from June 2019 to June 2023 which included 25 cases managed under us; 6 of them were planned for a minimal invasive approach for surgery.

Results: Of the 6 cases which were planned laparoscopically, 1 patient was planned for Nephron sparing surgery and 5 patients for nephroureterectomy for the management of the tumor. Of these, 3 surgeries could be completely laparoscopically but 3 were converted to open for varying indications as described in the report. Negative surgical margins could be achieved in all 3 with adequate lymph node sampling (7 to 13 nodes) for tumor staging. A 100 % EFS has been noted as yet (6 months – 3 years) in our patients but long-term follow up is still required to know the OS.

Conclusion: Our experience is limited but we can establish that MIS approach is in line with oncosurgical principles and with proper selection of cases, optimum pre operative evaluation aided by neoadjuvant chemotherapy laparoscopic approach for renal tumors in paediatric population is a safe and viable option.

Categories

Oncology

P15

ENDOSCOPIC TREATMENT OF PILONIDAL SINUS IN CHILDREN AND ADOLESCENTS- AN INITIAL EXPERIENCE IN TERTIARY CENTER in UK

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Background: Endoscopic treatment of pilonidal sinus treatment has been proposed as a simple, safe, well tolerated, and effective operation. The purpose of this study was to describe the initial outcomes of children and adolescents who underwent the endoscopic treatment for pilonidal sinus in our institution with emphasis on operative time, length of hospital stay and complications.

Methods: Retrospective data was collected for patients who underwent treatment for pilonidal sinus over last 3 years between 2021 and 2023 in a single tertiary paediatric surgical centre in the United Kingdom. Patients were identified by reviewing theatre logs or those with clinical coding diagnosis of pilonidal sinus or abscess. Data was gathered from patient notes, operation notes and electronic theatre management system. Institutional review Board approval was taken for the study. The authors declare no financial interest.

Results: 17 patients underwent endoscopic management of pilonidal sinus within this period. Majority was male (67%) and median age was 15 years (range 12- 17 years). The median operative time was 36.8 minutes (24.2 to 48.6 minutes), median admission length was 3.4 hours (3 to 5.6 hours) and median duration of follow up was 18 months (4 to 27 months). Post-operative pain was managed mostly with Non steroidal anti inflammatory drugs. Only one patient needed supplemental opioids. All patients were treated as day case procedure. Early complications included wound infection in 1 requiring treatment with antibiotics. There were 2 recurrences (11 %) and one with wound infections (5.5%). One patient who had a recurrence after an open procedure was treated endoscopically with good result.

Conclusion: Endoscopic treatment offers all benefits of minimally invasive procedure and we conclude that endoscopic procedure should be the initial procedure of choice for surgical management pilonidal sinus in children and adolescents.

Categories

Miscellaneous

SO16

Is appendectomy is still an essential during correction of malrotation of Midgut a long term randomised single institution study

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Introduction: The mal-rotation of the bowel is the condition classified as anomaly of rotation and fixation of the bowel, which can either be complete or partial. Mal-rotation of the intestine is one of the frequently encountered surgical emergency in paediatric patients. Appendectomy is an integral part management of Malroation midgut. we reviewed our cases who underwent surgery for mal-rotation, and followed up; to arrive at a conclusion that doing away with appendectomy is the way forward in the management of mal-rotation and should be the standard of care.

Material & Methods: This prospective study was conducted in a tertiary care centre. All confirmed cases of mal-rotation of gut either operated (by open approach or laparoscopically) managed from January 2017 to January 2020 were included and systematically allotted in two group – Group A- without Appendectomy and Group B - Lads procedure without appendectomy. The details details like antibiotic use, days of hospitalization, time to full oral feed and discharge was noted. All were followed up to attest 2 years after discharge

Results: A total of 28 patients underwent Ladd`s procedure, 14 with appendectomy and 14 without appendectomy. The follow of the patient's post-surgery was done for a minimum of 2 year or till the age of 18 years. During this follow up period none of the patients presented or experienced medical conditions attributable to retained appendix were recorded, like acute appendicitis or appendicular lump or perforation peritonitis due to ruptured appendix.

Conclusion: In view of the findings of our study and various studies supporting the utility of appendix, Ladd`s procedure without appendectomy should be considered the new Gold standard in the surgical management of the mal-rotation.

Categories

Gastrointestinal

P18

PEDIATRIC INGUINAL HERNIA REPAIR USING A NOVEL 1.9MM SINGLE-USE ARTHROSCOPE BY HYDRODISSECTION-LASSO TECHNIQUE

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Introduction: Recently, a novel 1.9 mm single-use endoscope became available for arthroscopy. We have used the device off-label for near-scarless pediatric inguinal hernia repair (IHR) and report our experience.

Methods And Procedures: After informed consent, IHR was performed in the hydrodissection-lasso technique (Surg Endosc 2011;25:3438-9) This technique entails using an 17g Tuohy needle to percutaneously pass a double loop of 4-0 polypropylene around the internal inguinal ring. Intraoperative visualization was achieved using the 1.9mm endoscope, introduced through the umbilicus. The video resolution of the device is VGA standard (640x480 pixels). The device is bendable and features a video chip and LED light source on its tip. Patient demographics, procedure duration, complications and outcomes were recorded.

Results: To date, the procedure was performed in 2 boys (4 and 8 years of age), who both had left-sided indirect IHR. Procedure time was 38 and 32 minutes, respectively and there were no peri- or postoperative complications. Visualization was found to be excellent, and definitively adequate to safely complete the procedure. Procedures were performed as ambulatory (same-day) surgery. None of the patients required opioid analgesics and both patients received only acetaminophen for analgesia less than 24 hours postoperatively. Upon 1 month follow-up, there were no appreciable scars and there were no signs of recurrence.

Conclusion: Off label use of this novel, single-use 1.9 mm arthroscope facilitates nearly scarless IHR in children. Although the video resolution is lower than the current high-definition standard in most endosurgical cameras, the device allows adequate visualization to complete the procedure safely. Patients required minimal postoperative analgesics and had no adverse events. We intent to employ this technique for all routine IHR procedures at our center to prospectively gain more experience.

Categories

Robotics and Innovations

SO19

USE OF BARBED SUTURES FOR CONGENITAL DIAPHRAGMATIC HERNIA REPAIR

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Purpose: Congenital diaphragmatic hernia (CDH) repair in small newborns can be challenging, particularly when a larger defect is present, as the resulting tension complicates the procedure. Barbed sutures prevent the suture from slipping back. Although barbed sutures have been introduced almost 2 decades ago, they have not been widely used for CDH repair. We therefore report our initial experience and pitfalls.

Methods: All patients presenting with CDH from February 2021 onward underwent repair using barbed sutures. Demographics, operative parameters, complications, and outcomes were prospectively recorded in a registry. Consent for participation was obtained by all families.

Results: A total of 9 patients underwent CDH repair in the study interval. Median operative time was 89 min (range 46 to 288 minutes). Four children were operated on thoracoscopically. The barbed suture facilitated easy and quick closure of the defects in most cases and obviated the need for intracorporeal knot-tying. One patient in the thoracoscopic group had a patch placed due to high tension after the barbed sutures tore the diaphragm by slipping back and sawing the tissue. At a median follow-up time of 17 months (range 6 to 31 months), one patient had died (mortality 11%), one patient with complete diaphragmatic agenesis was home-ventilated via tracheostomy, there were no recurrences of the CDH, and two patients with larger defects had gastroesophageal reflux.

Conclusions: Barbed sutures simplify congenital diaphragmatic hernia repair, regardless of whether a minimal-invasive or open approach is performed. Since the sutures are designed not to slip back, approximation is achieved without complicated slip-, or extracorporeal push knots. Patch repair is not a contraindication for using barbed sutures. In cases with high tension, though, the barbs may tear the tissues and produce a "saw" effect with substantial damage. More research and comparative studies should be performed.

Categories

Thorax

LO21

LAPAROSCOPIC-ASSISTED ANORECTOPLASTY (LAARP) WITHOUT LIGATION OF THE RECTO-URINARY FISTULA FOR ANORECTAL MALFORMATIONS: 18-YEARS OF MINIMALLY INVASIVE EXPERIENCE FROM A TERTIARY CENTER.

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Purpose: we aim to report our experience of Laparoscopic-Assisted Anorectoplasty (LAARP) without ligation of Recto-Urinary Fistula (RUF) for Anorectal Malformations (ARM).

Methods: In this monocentric retrospective study, we analyzed all consecutive primary LAARP without RUF ligation performed from 2004 to 2022. LAARP was conducted following the Georgeson technique. A sharp dissection of the RUF allowed for resection without ligation, with a mandatory Foley catheter left in place for up to 10 days.

Results: We included 40 male patients (Fistula: 19 recto-bulbar, 16 recto-prostatic, and 5 recto-bladder). A colostomy was first performed at a median age of 1 day, followed by LAARP at a median age of 147 days and a median weight of 6000 grams. The Foley was left in place for a median of 10 days. The median operative time was 180 minutes, and the hospital stay was 5 days. One LAARP (2%) required laparotomy. Colostomy closure was performed at a median age of 216 days. Cystoscopy and cystography (reserved for selected cases) were performed in 17% and 20% of cases, respectively, based on associated urological malformations or symptoms. With a median follow-up of 6.7 years, no symptomatic or asymptomatic remnants of the original fistula were observed. Overall, 8 (20%) patients presented with urological disorders, including neurologic bladder (3), bladder dyssynergia (2), or urinary retention episodes (2). urethral stenosis (related to pre-LAARP neonatal catheterization) (1). Postoperative complications were observed in 37% (15) of cases, including 30% Clavien-Dindo≥IIIa, 5% redo anorectoplasty surgery, 27% prolonged anal calibration, 10% anoplasty, and 5% ectropion. Among patients ≥ 4years-old at the follow-up end, 84% had voluntary bowel movements, 76% soiling, and 52% constipation. Otherwise, 53% of those <4 years-old had laxatives.

Conclusions: LAARP without RUF ligation appears to be safe and effective with favorable urological and functional perioperative and long-term outcomes.

Categories

Gastrointestinal

P22

LAPAROSCOPIC PERCUTANEOUS INTERNAL RING SUTURING OF INGUINAL HERNIA IN PRETERM INFANTS IS A SAFE AND EFFICIENT METHOD OF SURGICAL TREATMENT.

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Introduction: Our aim was to compare outcomes of inguinal hernia percutaneous internal ring suturing in preterm and full term infants.

Methods: We conducted a single-center longitudinal non-randomized controlled retrospective observational study of patient records of newborns and infants who underwent inguinal hernia repair between 2017 and 2023. In all patients we performed laparoscopic percutaneous internal ring suturing: the main group included preterm infants and the control group – full term infants. We analyzed gestation age, body weight at birth, body weight on the day of surgery, time of operation, recurrence rate and duration of hospital stay. Data was analyzed by StatTech 4.0.4 software.

Results: Our cohort included 123 infants (preterm n=93, full term n=30, 208 operations in total). The majority had bilateral inguinal hernia (n=84). In the main group median body weight at birth was 910 g, from which 59% had extremely low body weight (>1000 g, n=55) and 72% had their gestation age less than 31 weeks (n=67). In the control group median body weight was 3110 g. On the day of surgery median body weight was 4200 g (Q1-Q3/3300-5120) in preterm and 4785 g (Q1-Q3/4240-5625) in full term with no significant difference (p=0,052). Recurrent bilateral inguinal hernia was observed in 2 preterm patients (800 g and 840 g at birth; 2120 g and 4030 g on the day of surgery). We had no recurrence in the control group. No other complications were observed. Our analysis revealed no statistically significant differences between the two groups regarding recurrence rate (p=1), hospital stay (p=0,112). However, median operation time was significantly higher in the preterm group (40 min vs 30 min in the control group, p=0,015).

Conclusion: Prematurity is not a risk factor for laparoscopic percutaneous internal ring suturing in preterm infants when they reached the body weight of more than 3000 g.

Categories

Electronic Poster (Oral Short)

LO23

ENDOSCOPIC REMOVAL OF HAMARTOMATIC POLYPS OF THE SMALL INTESTINE.

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Introduction: Hamartomatic polyps in the small intestine can cause intussusception, bleeding, and intestinal obstruction.

Target: To determine the diagnostic and therapeutic effectiveness of balloon enteroscopy.

Materials and methods: 84 balloon enteroscopies were performed (76 antegrade (90.4%), 8 retrograde (9.6%)) in 37 patients with Peutz-Jeghers syndrome and juvenile polyposis. The length of the small intestine section during antegrade studies was (L) - 130.3±52.5 cm; with retrograde L = 51.4±27.3 cm.

Results: 97.7% of studies were diagnostically successful - hamartomatous polyps were identified in the examined area. Balloon enteroscopy is a sensitive (91.1%) and specific (80.9%) method for diagnosing hamartomatous polyps of the small intestine (AUC=859). The length of the examined area can be influenced by: age (p = 0.00782), BMI (p = 0.00011), type of balloon enteroscopy (p = 0.01445). 91.7% of studies were therapeutically successful - clinically significant polyps (>10mm) were removed. A total of 345 polyps were identified in the small intestine. A total of 135 were removed. Complications developed in 8.3%. Complications were observed: intussusception after BE (n=3) – 3.57% (a clinically significant polyp was not identified and removed), perforation of the small intestine (n=3) - 3.57%, bleeding (n=1) - 1.1%. The development of complications is statistically influenced by the type of enteroscopy (antegrade/retrograde) – p=0.04189.

Conclusions: Balloon enteroscopy is a safe, effective and minimally invasive method for diagnosing and removing hamartomatous polyps of the small intestine. The length of the examined area of the small intestine during balloon enteroscopy may be influenced by the child's age and anthropometric data.

Categories

Gastrointestinal

P24

THREE-PORT LAPAROSCOPIC RETROPERITONEAL LYMPHNODE DISSECTION (L-RPLND): IS A STANDARD FOUR-PORT ALWAYS MANDATORY?

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Purpose: L-RPLND when indicated, is recommended to be done by the standard 4-port technique (sometimes even 5) to ensure a satisfactory lymph node harvest. Our purpose is to demonstrate that a three-port laparoscopic retroperitoneal lymph node dissection (L-RPLND) for a child with para-testicular rhabdomyosarcoma (RMS) is feasible and does not result in a poor yield.

Methods: A 14 year old boy had presented with a 3 month history of a solitary, firm swelling in the right hemiscrotum, with a vague, dull aching pain for 1 week. Imaging was suggestive of a heterogeneously enhancing para-testicular lesion of size 6x5 cm. The child underwent high inguinal orchiectomy and biopsy revealed spindle-cell type of rhabdomyosarcoma located in the peri-epididymal soft tissue, with all resection margins free of tumour. Three weeks later the child underwent laparoscopic retroperitoneal lymph node dissection (L-RPLND), with three 5mm ports placed in the supraumbilical, left lumbar and suprapubic regions. The procedure was uneventful following which child received chemotherapy.

Results: Lymph node yield from the L-RPLND was satisfactory (n=21) and all lymph nodes were free of tumour. The child has completed his chemotherapy, repeat imaging is negative for residual disease and is currently in follow-up.

Conclusion: This report is the first of its kind, to the best of our knowledge and highlights the feasibility of L-RPLND using three ports as compared to the standard 4-port RPLND.

Categories

Oncology

P26

SINGLE-INCISION LAPAROSCOPIC REPAIR FOR MORGAGNI HERNIA IN AN INFANT

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11-month-old boy was brought to the physician due to fever for 3 days. Physical exam showed injected throat and swollen tonsils with pus. However, bowel gas was incidentally found in mediastinum in the chest radiograph. Contrast meal study did not show hiatal hernia. Computed tomography depicted large bowels herniating into anterior mediastinum through a retrosternal defect, indicating a Morgagni hernia. Single-incision laparoscopic repair was performed. The patient was placed in supine position. The monitor was put at head side; the surgeons were at leg side. A glove port with 3 5-mm trocars were placed through a transumbilical incision. A large retrosternal defect was noted. The locations of the stitches about to be made were marked on the abdominal wall when the peritoneum was deflated. A 3-0 prolene stitch was trans-abdominally passed into the peritoneal cavity. The suture was made on the lower rim of the defect. It should be cautious that the bite had to be big enough, and meanwhile, not to ruin in the myocardium since the posterior wall of the hernia was pericardium. An endoclose was used to pull out the two ends of the stitch through separated perineal entries but single skin puncture. Four trans-abdominal stitches were made on the lower rim. The stitches were tied up with disinflation. The patient had uneventful recovery and was discharged smoothly.

Categories

Robotics and Innovations

P28

SURGICAL TREATMENT OF PORTAL HYPERTENSION IN CHILDREN.

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Relevance: The goal of treatment of children with portal hypertension at the present stage is not only to prevent the risk of death, but also to restore the normal anatomy and physiology of the portal system.

Materials and methods: a retrospective analysis of the results of treatment of children diagnosed with portal hypertension from 2019 to 2023 was carried out in 108 children, operated on in the thoracic surgical department of the National Medical Research Center for Children's Health.

Results: All patients achieved good results from surgical treatment, stable remission of bleeding, and in 105 (97%) patients the vascular shunt functioned satisfactorily. Meso-portal shunting was performed in 18 (17%) children, meso-caval shunting in 25 (23%) children (meso-caval H-shunt 20 (87%), side-to-side meso-caval shunt 5 (13%), splenorenal shunting - 65 (60%) children. In 2 (2.2%) children, reconstruction of the shunt was performed in the early postoperative period due to its dysfunction. In 11 (13%) children, shunt dysfunction occurred in the long-term period. In 9 cases, repeated bypass surgery was performed, and in the remaining 3 cases.

Conclusion: The most optimal treatment method for extrahepatic portal hypertension in children is to perform meso-portal bypass. If it is impossible to apply a meso-portal shunt to prevent the development of bleeding, the operation of choice is to perform a splenorenal shunt. Mesocaval shunting is a reserve operation.

Categories

Gastrointestinal

P29

APPENDECTOMY USING MINIMALLY INVASIVE SURGERY: CONVENTIONAL LAPAROSCOPY VERSUS VIDEO-ASSISTED APPROACH.

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Introduction: Video-assisted appendectomy through a single umbilical port has become an increasingly used alternative in the management of acute appendicitis in pediatric age. Our objective was to study the advantages of this technique over conventional laparoscopic appendectomy.

Material And Methods: Patients operated on between December 2021 and August 2023 using laparoscopic and video-assisted techniques. Sociodemographic variables, type of appendicitis, surgical time, hospital stay and post-surgical complications were studied, considering complicated appendicitis from the gangrenous stage. $P<0.05$ was considered statistically significant.

Results: 120 patients underwent minimally invasive surgery for acute appendicitis, 50 using conventional laparoscopy and 70 using a video-assisted technique. Mean age of 9.4 ± 2.88 years (2-15 years), with 67.5% being men. 67.1% treated by video-assisted technique were phlegmonous, 17.1% gangrenous and 7.2% peritonitis, compared to 52%, 18%, 26% of those treated by conventional laparoscopy (p=0.05). Mean surgical time of 63.56±20.94 minutes for the video-assisted technique versus 85.58±27.41 minutes for the conventional technique (p=0.001). The hospital stay was 1.91±1.31 days for the video-assisted procedure and 2.88±2.21 days for the conventional laparoscopy (p=0.003). Post-surgical complications conventional laparoscopy vs video-assisted technique (16% vs 4.3%, p=0.028): wound infection 6% vs 2.9% (p=0.369), wound dehiscence: 2% vs 1.4% (p=0.81), intra-abdominal abscess 12% vs 1.4% (p=0.015).

Conclusions: Video-assisted appendectomy appears to be a safe and efficient modality for the treatment of acute appendicitis in children without increased morbidity. Comparing it with conventional laparoscopy, we observed a significant reduction in surgical time and hospital stay, without an increase in post-surgical complications.

Categories

Gastrointestinal

SO31

DOES DIAGNOSTIC RETROGRADE PYELOGRAPHY AND FOLLOW-UP WITH JJ PLACEMENT IN URETEROPELVIC JUNCTION OBSTRUCTION AFFECT THE DECISION MAKING PROCESS OF PYELOPLASTY?

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Introduction: In patients with a prediagnosis of ureteropelvic junction obstruction (UPJO), retrograde pyelography (RPG) and JJ stent insertion in appropriate patients may contribute to the surgical decision-making process, especially in children under 1 year of age.

Method: Among 850 patients aged between 3 months and 18 years with a prediagnosis of UPJO, data of 256 patients who underwent RPG between January 2014 and July 2023 were evaluated. The decision to perform RPG was based on urinary system ultrasound data, degree of hydronephrosis, anterior-posterior pelvis diameter, increase in calyx diameter, thinning of renal parenchyma, loss of differential function on Mag3-DTPA scintigraphy and delayed diuretic response. During RPG, it was evaluated whether the patients had dysplastic ureter, the angle of entry of the ureter into the pelvis, aberrant compression, dilatation in the calyces, and whether the contrast material was emptied after 10 minutes of waiting. JJ stent was placed in the patients who were deemed necessary.

Results: In this study, age, gender, degree of hydronephrosis, anterior-posterior pelvis diameter, calyx diameter, parenchyma thickness results, RPG findings, previous DTPA and cystogram findings and ultrasound data after JJ insertion were evaluated in 176 patients. Pyeloplasty was performed in 102 patients (57%). Significant regression of hydronephrosis was observed in 74 patients (43%) after JJ withdrawal in long term follow up.

Conclusion: Pyeloplasty of the undeveloped immature ureter will cause drainage problems. Some of the patients who are considered to have UPJO and who had RPG and JJ stent placement can be followed up without pyeloplasty. In patients who did not respond JJ stent and needed pyeloplasty, insertion of previous JJ stent provides a better ureteral diameter for pyeloplasty anastomosis by passive dilatation.

Categories

Urology

SO32

ENDOSCOPIC INJECTION VS SURGERY FOR MODERATE AND HIGH GRADE VESICO-URETERAL REFLUX IN CHILDREN: A COST-EFFECTIVENESS INTERNATIONAL STUDY.

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Introduction: Aim is to compare the results of endoscopic injection and ureteral reimplantation in children with vescico-uretral reflux in term of complications, success rate, costs and X-ray exposition.

Materials and Methods: A multicenter retrospective study, including children with vescico uretral reflux (III- V) operated from 2003 to 2018. Patients were divided into two groups: A treated by bulking agent and B by surgery dividing in open, laparoscopy and robotic sample.

Results: 400 patients were included, group A/232 (58%), group B/168 (42%). The last included 92 (54.76%)-open surgery, 41 (24.40%)-laparoscopy and 35 (8.75%) - robot-assisted surgery. Mean age at surgery was 38.6 months [3.1-218.7]. Mean follow up was 177.8 months [60 - 240]. Group A had shorter operative time than Group B with differences by surgical approach ($P < 0.00001$); lower postoperative analgesic need ($p< 0.05$), shorter hospitalization ($P < 0.05$), but lower success rate ($P = 0,0001$), higher redo-surgery percentage ($p<0.00001$) and overall costs ($p < 0,05$). No significant difference in term of post operative complications and mean radiation exposure.

Conclusions: Both procedures are safe and effective treatments for the vescico-uretral reflux. Endoscopy approach is significantly shorter in term of operative time, needs lower postoperative analgesia and hospitalization. The cost, also in case of multiple injections, is lower that other group. Furthermore, surgery is associated with significantly lower recurrence, which means lower rate of re-hospitalization and radiation exposure for children.

Categories

Urology

P33

MINIMALLY INVASIVE TREATMENT OF MÜLLERIAN REMNANT IN PEDIATRIC PATIENTS: LATEST EXPERIENCE.

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Introduction: Persistent Müllerian Duct Syndrome (PMDS) is a disorder of male sexual development due to persistence of Müllerian ducts. We reviewed series of two Italian centers and compared our experience with Literature.

Materials and methods: This is a Retrospective study including patients underwent minimally invasive surgery (laparoscopy and robot) for PMDS from 2017 to date.

Results: We included 7 patients. Four patients underwent laparoscopy with simultaneous cystoscopy. Three patients underwent robot assisted surgery. Mean age at diagnosis was 32+/-33 months. Mean age at surgery was 35+/-30 months: laparoscopy 13,2+/-3,9; robot 63,4+/-24,2 ($p<0.05$). Mean weight at surgery was 15,4+/-8 kg: laparoscopy 9,8+/-1,5; robot 22,8+/-6,5 ($p<0.05$). Average duration of procedures was 225,8+/-40,1 minutes (range 160-285): laparoscopy group 226+/-56,8; robot 225 minutes+/-0 (p=ns). Average hospital stay was 10,7+/-6,7 nights (range 10-25): laparoscopy 14,2+/-7,1; robot 6+/-0 (p=ns). Mean follow up is 40+/-21 months (range 6-60). No complications**.**

Conclusions: Surgical treatment of PMDS aim to relieve symptoms, preserve fertility and prevent degeneration. In our experience and according to Literature the best approach for PMDS is minimally invasive surgery. Robotic approach finds its maximum application in this intervention (improves surgical precision in challenging dissection), but is still affected by weight of eligible patients.

Categories

Robotics and Innovations

P34

PRELIMINARY ASSESSMENT OF THEATRE NURSE ERGONOMICS IN NEONATAL MINIMAL ACCESS SURGERY.

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Purpose: Theatre nurse ergonomics has been not assessed as the focus in endoscopic surgery mainly remains on the operating surgeon. The present study assesses theatre nurse ergonomics focusing solely on neonatal minimal access surgical procedures.

Methods: The study was conducted based on a questionnaire and pediatric theatre nurses rated specific aspects of ergonomics on a five-point Likert scale (1=poor and 5=excellent) during five neonatal minimal access surgical procedures – esophageal atresia, congenital diaphragmatic hernia, duodenal atresia, pyloromyotomy, and inguinal hernia. Within the questionnaire, nurses specifically rated the ease of using both the laparoscopic stack/tower and the OR1 (Operating room 1, Karl Storz Inc.) systems used for these procedures.

Results: Responses were received from 6 of 15 nurses with an average of 2 years of experience (range 10 months - 4.5 years) in pediatric surgery. 4/6 nurses had experience in all five surgical procedures. Of the 12 aspects of ergonomics surveyed: (a) Difficulty assisting junior consultants had the lowest mean scores (3.49/5, SD 0.096) and (b) Assisting procedure with regards to maintaining sterility of field" had the highest mean scores (4.79/5, SD 0.217) across all five procedures. When comparing between procedures, esophageal atresia had the lowest mean score in ergonomics (3.65/5, SD 0.367) and inguinal hernia had the highest mean score (4.08/5, 0.335). Use of the OR1 scored higher on average than use of the stack/tower in 3 of 5 surgical procedures.

Conclusion: The data from the preliminary responses in 12 key areas of ergonomics have identified areas of difficulties for theatre nurses as an initial step to improve ergonomics in our neonatal minimal access surgical practice. Moving further, larger pool of responses is warranted to collect qualitative data in order to investigate procedure based ergonomic variations and improve outcomes for theatre nurses.

Categories

Electronic Poster (Oral Short)

LO35

LAPAROSCOPIC "TOUSSEN" FUNDOPLICATION FOR GERD IN PEDIATRIC PATIENTS WITH NEUROLOGICAL IMPAIRMENT: RESULTS OF AN UNDESCRIBED TECHNIQUE.

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Purpose: We present our experience with the undescribed Laparoscopic Toussen (TOUpet-niSSEN) Fundoplication (LTF) for the management of gastroesophageal reflux disease (GERD) in pediatric patients with Neurological Impairment (NI).

Methods: We retrospectively analyzed records, surgical indication and follow-up of patients who underwent LTF at our tertiary center (period: 2010-2023). We compared NI and non-NI patients. LTF consist of a 270° valve at the upper edge and 360° at the lower edge. Exclusion criteria: age>18years-old, redo. Statistical analysis: categorical variables were compared with Fisher or $\chi 2$-test, continuous variables with Mann-Whitney U-test. All p-values were two-sided, with $p<0.05$ significant.

Results: Indication was based on symptoms, pathological upper GI series, PH-metry, and validated by a multi-disciplinary discussion. LTF was performed in 219 patients, of which 49 (22%) with a severe NI. Compared to non-NI patients, NI children had significantly lower median weight at surgery (13 vs 20kg, $p<0.001$), needed significantly more gastrostomies (57% vs 2%, $p<0.001$), longer median operative time (90 vs 65minutes, $p<0.001$), and hospital stay (4 vs 2days, $p<0.001$). No differences were found regarding age, conversion, intraoperative and postoperative complications. Overall, 190 patients had a median follow-up of 4.5years [0.6-11years]. We found no significant differences between NI and non-NI regarding GERD recurrence, redo-fundoplication, surgery or endoscopic dilatation, and symptoms resolution. GERD recurrence was diagnosed at a median of 30 months in the 5% in non-NI patients (2 needing redo), and 1% in NI (none needing redo). Among non-NI patients, 5 (2.6%) developed esophageal strictures (3 treated with endoscopic dilation and 2 with surgery).

Conclusions: In this preliminary study, the newly described LTF seems to be effective in term of perioperative and long-term outcomes, even in NI patients, with a low rate of stricture and GERD recurrences. Our preliminary results need further validation by prospective studies.

Categories

Gastrointestinal

P36

CAN SERUM SOLUBLE UROKINASE PLASMINOGEN ACTIVATOR RECEPTOR BE AN EFFECTIVE BIOMARKER IN COMPARING INFLAMMATORY RESPONSE BETWEEN LAPAROSCOPIC OR OPEN APPENDECTOMY ?

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Introduction: Inflammatory response after laparoscopy and laparotomy has been compared in studies in adults, but rare studies are comparing immune response between laparoscopy and laparotomy in children. In this study, we aimed to compare open and laparoscopic appendectomies regarding a new biomarker, suPAR, to evaluate the inflammatory response.

Material and Methods: Patients between 3 and 18 years of age who were admitted to the pediatric surgery department and scheduled for appendectomy due to appendicitis were enrolled in the investigation. Patients were randomized to receive either laparoscopic (n=20) or conventional open appendectomy (n=20). The primary outcome was a change in preoperative and postoperative suPAR levels. Secondary outcomes were the count of WBC (White blood cells), lymphocytes, neutrophils, platelets, CRP level (C reactive protein), appendix diameter, symptoms, symptom duration, surgical complications, operative time, rescue analgesics, hospital stay, and family satisfaction.

Results: The mean age of patients was 10.55±2.743 (3-18) years for patients undergoing laparoscopic appendectomy. The mean age of the patients undergoing open appendectomy was 11.40±3.515 (3-18) years. A statistically significant difference was found when the postoperative suPAR values between the two groups were compared (p=0.048). The operative time and the hospital stay in in the laparoscopic group was significantly shorter than in the open group (p=0.001, p=0.047).

Conclusion: Laparoscopic appendectomy is associated with shorter operative time, shorter hospital stay, and less inflammatory response caused by surgical stress than open.

Categories

Gastrointestinal

SO37

CONTRIBUTION OF SIMULATION IN PAEDIATRIC LAPAROSCOPIC SURGERY: IMPROVING THE SPEED AND QUALITY OF LAPAROSCOPIC SUTURES WITHOUT TOUCHING THE PATIENTS

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Introduction: Mastering paediatric laparoscopic surgery (PLS) requires a long learning, due to small number of patients and restricted access to simulation training. A degree in PLS (IUD_PLS) with sessions on LaparoTrainer® (Medicalem, Saint Cyr l'Ecole, France) has been created for skills acquisition, improvement and maintenance. The aim of this study was to determine whether IUD_PLS enables students to improve on laparoscopic intracorporeal knot.

Methods: This retrospective analysis of evaluations of intracorporeal laparoscopic knots realization (3 and 5mm) in both sessions of simulation of IUD_PLS curriculum (2020-2022), was apporved by local IRB, and had as judgment criteria the Objective Structured Assessment of Technical Skills (OSATS) score (maximum 40) and the time required for knot tying. A Plot Transfer (PT) exercise in session 1 assessed basic dexterity of students. Statistical analysis: Student for paired data, Pearson correlation.

Results: 43 students were included. The median [IQR] OSATS score was not significantly different between sessions 1 and 2 in 5mm (32 [30-36] vs. 32 [28-34], p=0.19), but significantly improved in 3mm (22 [21-24] vs. 32 [28-33], p<0.0001). There was a significant acceleration in knot-tying speed in 5mm (184s [161-268] vs. 166 [128-218], p=0.002). A correlation existed between PT duration and time in session 1 (ρ= 0.58, p=0.0002), OSATS score and time in session 2 in 5mm (ρ=-0.62, p<0.0001 and ρ=0.78, p<0.0001 respectively), but no correlation with outcomes in 3mm. With 5mm instruments, time for knot-tying strongly correlated between sessions 1 and 2 (ρ=0.77, p<0.0001), as well as OSATS scores (ρ=0.32, p=0.045).

Conclusion: The Inter-University Degree of Paediatric Laparoscopic Surgery enables students to improve the quality of laparoscopic intracorporeal knots, especially with the specific pediatric-use 3mm instruments.

Categories

Robotics and Innovations

SO38

APPLICATION AND SAFETY OF SHEHATA TECHNIQUE FOR INTRA-ABDOMINAL TESTES IN PERSISTENT MüLLERIAN DUCTS SYNDROME: VIDEO OF TECHNIQUE AND LONG TERM RESULTS.

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Introduction: Intra-abdominal testes are found in almost 60% of persistent mullerian ducts syndrome DSD (46XY PMDS). The common blood supply of the vas deferens and Mullerian ducts explains the increased technical difficulty of Fowler Stephens two-staged orchidopexy in this context. We present the results of the Shehata technique applied to the intra-abdominal testes in two 46XY PMDS patients.

Patients And Methods: Two 46XY PMDS patients had a postnatal diagnosis of bilateral cryptorchidism. A laparoscopic testicular surgery was proposed and validated by multidisciplinary meeting. The Shehata staged traction technique was preferred, as it preserves native testicular vascularization, with partial or complete excision of the Müllerian ducts if necessary. Postoperative follow-up was led together with the endocrinologist. Study was approved by local IRB.

Results: Both patients had normal pre-operative hormonal assessment, with a 46XY karyotype, positive SRY detection by Fluorescent In Situ Hybridation (FISH), and aged at surgery of 1 and 4 years-old. The first patient had an intraoperative detection of the Müllerian remnants, with a first bilateral Shehata stage, an excision of the Müllerian ducts with new bilateral traction in a second stage, and a bilateral orchidopexy as third stage. The second patient underwent midline division of the median Müllerian structure, bilateral excision of the lateral tubes, left one-stage orchidopexy, and a right orchidopexy in 3 stages (redo traction) according to Shehata technique. Both patients have normal intra-scrotal testes at 3- and 1-years follow-up, and normal postoperative hormonal balance (normal AMH). An operative video shows the main steps of the different procedures.

Conclusion: Shehata technique associated to Mullerian structures excision and/or division allows successful orchiopexy for intraabdominal testes in 46XY persistent müllerian duct syndrome patients, without worries for testicular vascularization or endocrine function.

Categories

Urology

P40

THE ROLE OF INFRARED THERMAL IMAGING IN THE DIAGNOSIS OF PEDIATRIC APANDICITIS.

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Introduction: This study investigates the application of an infrared thermal camera as an innovative imaging tool for diagnosing pediatric appendicitis. The primary objective is to assess its effectiveness in differentiating cases of appendicitis from other causes of acute abdominal pain while scrutinizing potential limiting conditions influencing its differential diagnostic utility.

Methods: A total of 108 patients (52 boys, 56 girls) aged 5-18 years (mean age 10.73±3.45) presenting with acute onset abdominal pain were included. Patients were categorized into four main groups: 58 underwent appendicitis surgery, 22 were admitted with abdominal pain with a follow-up decision, 8 were diagnosed with enterocolitis, and 20 healthy children constituted the control group. Surface thermal images of the abdominal wall were captured using an infrared thermal camera upon admission. Thermal imaging software calculated average, maximum, and minimum thermal readings from the right and left lower quadrants separately.

Results: The thermal values of the operated group were significantly higher than those of the control group ($p<0.001$) and the enterocolitis group ($p<0.001$). Although differences in thermal values between acute and perforated appendicitis were noted, statistical significance was not observed. Further analysis of the operated group's data using linear regression demonstrated a statistically significant difference in thermal values for those who had used NSAID drugs and antibiotics 6 hours prior to admission ($p<0.001$).

Conclusion: The thermal camera exhibits potential for differential diagnosis in acute abdomen cases, particularly in excluding patients who may develop enterocolitis and those with negative appendicitis. Understanding the limitations of this imaging technique, such as antibiotic and NSAID use and patient BMI, is crucial for guiding future research to unveil its true diagnostic potential.

Categories

Gastrointestinal

SO44

VALIDATION OF A THREE-DIMENSIONALLY PRINTED SIMULATOR FOR TRAINING IN ENDOSCOPIC INJECTION OF BULKING AGENT FOR VESICOURETERAL REFLUX.

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Purpose: Simulation-based training plays a significant role in surgical education, especially in minimally invasive pediatric surgery and urology. This study aimed to evaluate the face and content validities of a novel 3-D printed model as training tool for endoscopic injection of bulking agent.

Methods: Thirty attendees and ten teaching faculty members were invited to complete a post-hoc questionnaire survey. The survey consisted of a 7-question 5-point Likert scale to assess the model's realism (face validity) and its effectiveness as training tool (content validity).

Results: Over 80% of the delegates agreed or strongly agreed that the appearance of anatomical structures within the model was realistic and mimicked actual bladder anatomy. In addition, over 90% agreed or strongly agreed that the application of instruments on the composite materials of the model realistically mimicked some technical aspects of endoscopic injection therapy such as required depth of injection, difficulty of managing the needle, resistance encountered during the injection, optimal volume of material and pressure required to create satisfactory mound. All faculty strongly agreed that the model was useful to develop hand-eye coordination, tactile sensitivity and handling and was a good training tool for beginners.

Conclusion: The results of this study suggest that pediatric surgeons/urologists in their early or intermediate stage of training would benefit most from a simulation-based teaching program. This 3-D printed model requires further development in areas such as the realism of ureteral hiatus and reproducing more complex anatomy to be useful for the training of more advanced surgeons.

Categories

Urology

SO45

INDOCYANINE GREEN (ICG)-GUIDED LYMPHATIC SPARING LAPAROSCOPIC VARICOCELECTOMY IN CHILDREN AND ADOLESCENTS. IS INTRATESTICULAR INJECTION OF THE DYE SAFE? A MID-TERM FOLLOW-UP STUDY

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Purpose: Laparoscopic Palomo varicocelectomy using indocyanine green (ICG) fluorescent lymphography (FL) is standardized technique to perform lymphatic sparing and avoid post-operative hydrocele. No data regarding the safety of intratesticular injection of dye are currently available. The study aimed to assess the safety and efficacy of this procedure at mid-term follow-up.

Methods: Seventy-two patients (median age 14.5 years) undergoing laparoscopic Palomo varicocelectomy using ICG-FL from January 2019 to July 2022, were enrolled. Operative indication was high-grade varicocele in all patients, symptoms in 30/72 (41.7%) and left testicular hypotrophy in 42/72 (58.3%). Follow-up included clinical examination at 1, 6, 12 months and scrotal Doppler ultrasonography (US) at 12 months postoperatively.

Results: Lymphatic sparing using ICG-FL was achieved in all cases. No intra-operative complications or adverse reactions to ICG occurred. The median follow-up was 22.8 months (range 11-49). Self-limited scrotal hematoma at the injection site occurred in 1/72 (1.4%). Intratesticular hypoechoic millimetric area with calcifications was detected in 3/72 (4.2%) on scrotal US. Serum tumor markers were negative. This finding disappeared after 1-year observation in 2/3 cases (66.7%). Persistent grade II varicocele was observed in 4/72 (5.5%), not requiring re-intervention. No hydrocele occurred and 14/22 (63.6%) with pre-operative hypotrophy showed catch-up growth.

Conclusion: Laparoscopic Palomo varicocelectomy using ICG-FL reported excellent outcomes with low incidence of varicocele persistence and no post-operative hydrocele. These preliminary data confirmed safety of intratesticular injection at mid-term follow-up, without specific risks for testis and patient. Future prospective study with larger series is needed to assess long-term outcomes.

Categories

Urology

P46

Thoracoscopic Excision of Mediastinal Mature Cystic Teratoma in two-month-old Infant

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Introduction: The most common congenital mediastinal lesion in infant is bronchogenic cyst or duplication of esophagus. Mature cystic teratoma rarely occurs in mediastinum. Thoracoscopic excision of mediastinal mass in infant is gaining popularity. Conversion to open may be due to limited operative space, inadequate ventilation or intraoperative complication including bleeding and bronchial injury.

Patient: A two-month-old boy, 5kg, suffered from shortness of breath with suprasternal and subcostal retraction. There was a pure cystic lesion, 2.4x1.5cm at middle mediastinum around T4-T7 level. The location of lesion was very central and surround by carina and bilateral bronchus(anterior), esophagus(right), thoracic aorta(left) and veterbrae(posterior), It caused mass effect to right bronchus and esophagus, leading their deviation to right. It also compressed left bronchus leading air trapping of left lung lobes. There was no fistula opening noted by bronchoscopy. Thoracoscopic excision of the middle mediastinal cyst with repairing injury of left bronchus was managed successfully without requirement of conversion to open.

Discussion: Thoracoscopy using in infant has been considered to be safe and acceptable option. Even without assistance of 3mm vessel sealing device like in our country, the operation could be done successfully by using cautery hook and Maryland dissector for dissection, knot tying for ligation of vessel, and suturing for repairing left bronchial injury. Once the patient is hemodynamically stable with adequate ventilation during operation, the intraoperative complication could be dealed with thoracoscopic instrument and skill to avoid conversion to open.

Conclusion: Thoracoscopic surgery is safe and feasible in infant. Under the premise that patient is hemodynamically stable with adequate ventilation, any technical difficulty or intraoperative complication faced may be overcomed without conversion to open to reach the advantages of thoracoscopy.

Categories

Thorax

LO47

INDOCYANINE GREEN (ICG) FLUORESCENT CHOLANGIOGRAPHY: THE NEW STANDARD OF CARE TO PERFORM LAPAROSCOPIC CHOLECYSTECTOMY IN PEDIATRIC POPULATION. A COMPARATIVE STUDY WITH CONVENTIONAL LAPAROSCOPIC PROCEDURE.

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Background: This study aimed to compare outcomes of standard laparoscopic cholecystectomy (LC) and indocyanine green fluorescent cholangiography (ICG-FC) LC over a 10-year period.

Methods: From 2013 to 2023, 173 LC were performed in 2 pediatric surgery units: 83 using standard technique (G1) and 90 using ICG-FC (G2). Patients included 96 girls and 77 boys, with median age 12.3 years (range 4-17) and median weight 51 kg (range 19-114). The two groups were compared regarding: (1) perioperative complications rate; (2) overall length of surgery (T1); (3) length of cystic duct isolation, clipping and sectioning (T2); (4) time of gallbladder removal (T3); (5) degree of visualization of biliary tree; (6) safety and feasibility of ICG-FC; (7) incidence of anatomical anomalies detected intraoperatively.

Results: All LC were accomplished successfully without conversion to open. Perioperative complications rate was significantly higher in G1 compared with G2 (12% vs 0%) [p=0.0007]. Median T1, T2, and T3 were significantly longer in G1 (90,37,35 min) compared with G2 (55,17,19 min) [p=0.0001]. Visualization rate of complete biliary tree was significantly higher in G2 (98.8%) than in G1 (80.7%) [p=0.0001]. No adverse reactions to ICG were recorded. Incidence of biliary anomalies detected intraoperatively was significantly higher in G2 (7.8%) than in G1 (1.2%) [p=0.03].

Conclusion: ICG-FC can be considered the new standard practice to perform LC in pediatrics. ICG fluorescence provided superior visualization of biliary anatomy, increased detection of anatomic variants, faster procedure, and less complications compared with conventional technique. ICG-FC was safe, feasible, simple, cheap, and timesaving tool.

Categories

Gastrointestinal

LO48

VIDEO-ASSISTED ANAL FISTULA TREATMENT (VAAFT) COMBINED WITH OZONIDE OIL DRESSING: STANDARDISATION OF TECHNIQUE IN PEDIATRIC PATIENTS.

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Purpose: Anal fistula and perianal abscess are common acquired anorectal pathologies in pediatrics. Surgical treatment options commonly adopted are fistulotomy, fistulectomy, cut seton technique and more recently video-assisted anal fistula treatment (VAAFT). Optimal postoperative wound dressing remains debated. The aim of this study was to report our series of pediatric patients who received VAAFT and postoperative wound dressing using ozonide oil.

Methods: All patients who underwent VAAFT between August 2018 and May 2023 were included in the study. Demographics, clinical features, pre-operative imaging, surgical details, outcome, and mid-term outcome data were retrospectively reviewed for each patient. All VAAFT procedures were performed in general anesthesia and using a 10-Ch fistuloscope.

Results: Thirty-tree procedures were performed in 30 patients over the study period. The median patient age was 5.7 years (range 0.75-14). Anal fistula was idiopathic in 26/30 (86.6%), iatrogenic in 2/30 (6.7%), and secondary to Crohn's disease in 2/30 (6.7%). The median duration of surgery was 23 minutes (range 18- 40). All patients received ozonide oil dressing twice a day for 5 weeks postoperatively. The median hospital stay was 24 hours (range 9-36). The median healing time was 28 days (range 17-39). With a medium follow-up of 2 years (range 0.5-5), disease recurrence occurred in 3/30 (10%) patients with idiopathic fistula, who were re-operated using the same technique, with no further recurrence. No fecal incontinence or soiling was observed.

Conclusion: Our series showed that VAAFT is safe and effective technique to adopt in children with perianal fistula. It is versatile to treat fistulas of different etiologies. Postoperative course was painless, and the procedure can be performed in day-surgery setting. The key to the success of VAAFT seems to be the standardization of the operative technique and the use of ozonide oil dressing in the postoperative period.

Categories

Robotics and Innovations

SO49

ROBOTIC-ASSISTED SURGERY FOR GYNECOLOGICAL INDICATIONS IN CHILDREN AND TEENAGERS: EUROPEAN MULTICENTER REPORT.

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Purpose: Robotic-assisted surgery (RAS) is increasingly adopted in the pediatric population. This retrospective multicenter study aimed to report application of RAS for gynecological indications in pediatric patients.

Methods: The medical records of all girls with gynecological pathology, operated in 4 different institutions over a 3-year period, were retrospectively collected. Robot docking time, total operative time, length of stay (LOS), requirement time of pain medication, complication rate, conversion rate, and pathology were analyzed.

Results: Twenty-three girls, with median age of 12.3 years (range 0.6-17.8) and median weight of 47.2 kg (range 9-73), received the following RAS procedures: ovarian cystectomy for ovarian cyst/mass (n=10), salpingo-oophorectomy for ovarian complex mass (n=6), bilateral gonadectomy for Turner syndrome SRY+ (n=1), salpingectomy for fallopian tube lesion (n=1), paratubal cyst excision (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 144.9 minutes (range 64-360), and median docking time was 17.3 min (range 7-50). Conversion to open or laparoscopy was not necessary in any case. Median LOS was 2.1 days (range 1-7), and median analgesic requirement was 2.2 days (range 1-6). One patient (4.3%) needed redo-surgery for recurrent Gartner cyst (Clavien 3b).

Conclusion: This preliminary experience showed that RAS is safe and feasible for surgical management of gynecological pathology in pediatric patients, although no conclusive data are available to confirm its superiority over traditional laparoscopy. Randomized, prospective, comparative studies are needed to identify the gold standard approach in such patients.

Categories

Robotics and Innovations

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RARE LIFE-THREATENING COMPLICATION OF SURGICAL INTERVENTION FOR VASCULAR RING AND UNILATERAL PULMONARY ARTERY AGENESIS: A CASE REPORT.

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Anticipating and preventing complications in surgical procedures is imperative, particularly in the context of well-documented interventions for common anomalies. However, it is much more challenging for complex surgeries addressing unique congenital conditions with altered anatomy. We present a case of a 4-year-old boy with a complete vascular ring and unilateral left pulmonary artery agenesis. The surgical correction involved ligation and division of the left rudimentary aortic arch and left pneumonectomy due to recurrent infections.

Three months after surgery, the patient experienced a rare life-threatening complication known as postpneumonectomy syndrome. Computed tomography showed an excessive left mediastinal shift, causing severe compression of the right mainstem bronchus and bronchus intermedius between the right pulmonary artery and the right descending aorta.

To manage this critical situation, the compression of the bronchi was relieved by posterior aortopexy coupled with external stenting of the bronchus intermedius. The operation was performed with the use of venoarterial extracorporeal membrane oxygenation. Although the patient required tracheostomy, he was eventually discharged without additional ventilatory support. During the 1-year follow-up, the patient's airways remained patent.

This case demonstrates the potential efficacy of posterior aortopexy with external stenting in postpneumonectomy syndrome, while emphasizing the need for careful consideration in surgeries for rare congenital anomalies.

Categories

My Worst Complication

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“INCIDENTALOMA” AS OCCASIONAL FINDING DURING LAPAROSCOPIC SURGERY: HOW LAPAROSCOPY CAN MAKE THE DIFFERENCE!

Claudia Di Mento, Annalisa Chiodi, Maria Escolino, Ciro Esposito

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Purpose: Incidentaloma refers to occasional finding of coexisting pathology during laparoscopic surgery performed for other indication. This study aimed to show how laparoscopy can make the difference to discover and treat silent concomitant pathologies and avoid reintervention.

Methods: Five hundred-95 patients undergoing laparoscopic procedures from January 2018 to January 2023 were enrolled. Patients were divided in 4 groups according to the primary pathology or anatomical district: G1 included 331 children undergoing unilateral inguinal hernia laparoscopic repair, G2 included 115 children receiving laparoscopic varicocelectomy, G3 included 40 children undergoing laparoscopic exploration for non-palpable testis, G4 included 109 children undergoing laparoscopic abdominal procedures (53 appendectomies, 10 ovarian cystectomies, 14 renal surgeries, 28 cholecystectomies, 4 esophageal surgeries).

Results: A total of 170 incidentalomas were found intra-operatively (28.6%). In G1, 126/331 (38.1%) had contralateral persistent peritoneal-vaginal duct (PPVD) and 2/331 (0.6%) had ovarian cyst (n=1) and paratubaric cyst (n=1). In G2, incidentaloma was found in 2/115 (1.7%), including PPVD (n=1) and omphalomesenteric duct remnant (n=1). In G3, PPVD was discovered in 11/40 (27.5%). In G4, 54/109 (49.5%) concomitant adnexal pathologies, 4/109 (3.7%) PPVD, 2/109 (1.8%) pelvic masses, 2/109 (1.8%) subhepatic appendix, 1/109 (0.9%) Meckel’s diverticulum, 1/109 (0.9%) urachal sinus were discovered intra-operatively. All incidentalomas were treated during the same surgeries. Postoperative course was uneventful in all patients and no postoperative complications were observed.

Conclusion: Laparoscopy, besides being currently the gold standard for minimally invasive treatment of many pediatric pathologies, has the added benefit to detect intra-operatively concomitant asymptomatic and unknown pathologies. Our results demonstrated that incidence of incidentalomas was not trascurable (28.6%) in the pediatric population. Laparoscopy allows their early treatment in most cases, thus avoiding the risk of reintervention or emergency operation in case of acute onset.

Categories

Miscellaneous

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AN UNEXPECTED SEVERE BLOOD DRIPPING FROM ABDOMINAL WALL AFTER ROBOT-ASSISTED LAPAROSCOPIC VARICOCELECTOMY.

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Purpose:We herein describe an unexpected severe case of blood dripping from abdominal wall occurred in a boy undergoing robotic-assisted laparoscopic varicocelectomy.

Methods: A healthy 17-year-old boy with no comorbidities came to our attention with symptomatic left varicocele. The varicocele was III grade according to Dubin and Amelar classification. Robotic-assisted ICG lymphatics sparing left Palomo varicocelectomy was successfully performed. In the first 12 hours following the surgery, the patient was unable to walk and refused oral feeding because of vomiting and abdominal pain. On the 2ndoperative day, a huge hematoma in the right flank and a swelling in the right scrotum appeared. Haemoglobin levels dropped to 7 g/dL on urgent count blood cell. Blood transfusion was performed. Emergency ultrasound showed fluid collection in the pelvic space.

Results: Emergency laparoscopic exploration was performed to detect the source of the bleeding. Large volume hemoperitoneum was identified and almost 1000mL of blood were aspirated. Ligatures of the spermatic vessels were still in place and no active bleeding was detected at surgical site. No other parenchymal or intra-abdominal injuries were identified. Blood dripping was observed at level of right robotic port access. Careful cauterization of this site was performed. An abdominal drain tube was placed for 24 hours postoperatively. Postoperative course was uneventful. The patient was discharged with medical therapy on 7thpostoperative day when haemoglobin levels raised up to 10.5 g/dL. At 1-month follow-up, the patient was well-being and haemoglobin levels established at pre-operative values of 14.5 g/dL.

Conclusion: Robot-assisted laparoscopic varicocelectomy is becoming a valid alternative to laparoscopic approach in the pediatric population. Although it's a safe and routine procedure, with low complication rate, there are some cautions to be followed, such as port removal under vision, careful haemostasis after port removal if signs of bleeding and timely diagnosis.

Categories

My Worst Complication

P53

ROBOTIC-ASSISTED VERSUS CONVENTIONAL LAPAROSCOPIC ICG-FLUORESCENCE LYMPHATIC SPARING PALOMO VARICOCELECTOMY: A COMPARATIVE RETROSPECTIVE STUDY OF TECHNIQUES AND OUTCOMES.

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Purpose: No evidence regarding the technique of choice to treat pediatric varicocele is currently available. This study aimed to compare techniques and outcomes of robotic-assisted varicocelectomy (RAV) and laparoscopic varicocelectomy (LV).

Methods: The medical records of 40 patients, who received RAV and LV over a 2-year period, were retrospectively analyzed. Palomo lymphatic sparing varicocelectomy using ICG fluorescence was adopted in all cases. Three 5-mm trocars were placed in LV, whereas four ports, three 8-mm and one 5-mm, were placed in RAV. The spermatic vessels were ligated using metallic clips in LV and ligatures in RAV. The two groups were compared regarding patient baseline and operative outcomes.

Results: All patients, with median age of 14 years (range 11-17), had left high-grade varicocele according to Dubin-Amelar classification. All were symptomatic and 33/40 (82.5%) presented left testicular hypotrophy. All procedures were completed without conversion. The average operative time was significantly shorter in LV [20 min (range 11-30)] than in RAV [34.5 min (range 30-46)] (p=0.001). The median analgesic requirement was 14.2 hours (range 8-18) and the median hospitalization was 20.6 hours (range 10-26), without significant differences between the 2 groups (p=0.55). At long term follow-up (30 months), no complications occurred in both groups. The cosmetic outcome was significantly better in G2 than G1 at 6-month and 12-months follow-up (p=0.001).

Conclusion: Robotic-assisted varicocelectomy can be safely and effectively performed in pediatric patients, with the same excellent outcomes as conventional laparoscopic procedure. Robotics provides additional technical benefits such hand tremor filtering, 3D-vision, and increased ergonomics. Laparoscopy has the advantages of faster surgery, smaller instruments, better cosmesis than robotics. To date, laparoscopy seems to be still preferable to robotics to treat pediatric varicocele. Probably soon, along with miniaturization of robotic instruments and decrease of costs, RAV will become the technique of choice to treat pediatric varicocele.

Categories

Robotics and Innovations

SO54

CARDIORESPIRATORY PERFORMANCE CAPACITY AND PULMONARY MICROBIOME IN PATIENTS FOLLOWING SURGICAL REPAIR OF ESOPHAGEAL ATRESIA.

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Background: Patients following repair of an esophageal atresia (EA) or tracheoesophageal fistula (TEF) carry an increased risk of long-term cardiopulmonary malaise. The role of the airway microbiome in EA/TEF patients remains unclear.

Methods: All EA/TEF patients treated between 1980 and 2010 were invited to a prospective clinical examination, spirometry, and spiroergometry. The airway microbiome was determined from deep induced sputum by 16 S rRNA gene sequencing. The results were compared to a healthy age- and sex-matched control group.

Results: Nineteen EA/TEF patients with a mean age of 24.7 ± 7 years and 19 age- and sex-matched controls were included. EA/TEF patients showed a significantly lower muscle mass, lower maximum vital capacity (VCmax), and higher rates of restrictive ventilation disorders. Spiroergometry revealed a significantly lower relative performance capacity and lower peak VO2 in EA/TEF patients. Alpha- and beta-diversity of the airway microbiome did not differ significantly between the two groups. Linear discriminant effect size analysis revealed significantly enriched species of Prevotella_uncultured, Streptococcus_anginosus, Prevotella_7_Prevotella_enoeca, and Mogibacterium_timidum.

Conclusion: EA/TEF patients frequently suffer from restrictive ventilation disorders and impaired cardiopulmonary function associated with minor alterations of the airway microbiome. Long-term examinations of EA/TEF patients seem to be necessary in order to detect impaired cardiopulmonary function.

Categories

Gastrointestinal

SO55

VOLATILE ORGANIC COMPOUNDS, BACTERIAL AIRWAY MICROBIOME, SPIROMETRY AND EXERCISE PERFORMANCE OF PATIENTS AFTER SURGICAL REPAIR OF CONGENITAL DIAPHRAGMATIC HERNIA.

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The aim of this study was to analyze the exhaled volatile organic compounds (VOCs) profile, airway microbiome, lung function and exercise performance in congenital diaphragmatic hernia (CDH) patients compared to healthy age and sex-matched controls. A total of nine patients (median age 9 years, range 6-13 years) treated for CDH were included. Exhaled VOCs were measured by GC-MS. Airway microbiome was determined from deep induced sputum by 16S Rrna gene sequencing. Patients underwent conventional spirometry and exhausting bicycle spiroergometry. The exhaled VOC profile showed significantly higher levels of cyclohexane and significantly lower levels of acetone and 2-methylbutane in CDH patients. Microbiome analysis revealed no significant differences for alpha-diversity, beta-diversity and LefSe analysis. CDH patients had significantly lower relative abundances of *Pasteurellales* and *Pasteurellaceae*. CDH patients exhibited a significantly reduced Tiffeneau Index. Spiroergometry showed no significant differences. This is the first study to report the VOCs profile and airway microbiome in patients with CDH. Elevations of cyclohexane observed in the CDH group have also been reported in cases of lung cancer and pneumonia. CDH patients had no signs of impaired physical performance capacity, fueling controversial reports in the literature.

Categories

Thorax

P56

ACUTE APPENDICITIS MANIFESTS AS TWO MICROBIOME STATE TYPES WITH ORAL PATHOGENS INFLUENCING SEVERITY

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Mounting evidence suggests that acute appendicitis (AA) is not one but two diseases: complicated appendicitis, which is associated with necrosis leading to perforation or periappendicular abscess, and uncomplicated appendicitis, which does not necessarily result in perforation. Even though AA is the most frequent cause of surgery from abdominal pain, little is known about the origins and etiopathogenesis of this disease, much less regarding the different disease types. In this study, we investigated the microbiome (inter-domain amplicon and metagenome sequencing) of samples from the appendix, rectum and peritoneum of 60 children and adolescents with AA to assess the composition and potential function of bacteria, archaea and fungi. The analysis of the appendix microbial community revealed a shift depending on the severity of the AA. This shift was reflected by two major community state types that represented the complicated and uncomplicated cases. We could demonstrate that complicated, but not uncomplicated, appendicitis is associated with a significant local expansion of oral, bacterial pathogens in the appendix, most strongly influenced by necrotizing *Fusobacterium* spp., *Porphyromonas* and *Parvimonas*. Uncomplicated appendicitis, however, was characterized by gut-associated microbiomes. Our findings support the hypothesis that two disease types exist in AA, which cannot be distinguished beyond doubt using standard clinical characterization methods or by analysis of the patient's rectal microbiome. An advanced microbiome diagnosis, however, could improve non-surgical treatment of uncomplicated AA.

Categories

Gastrointestinal

P57

MESENTERIC CYSTS – AN UNCOMMON CHALLENGING DIAGNOSIS.

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Introduction: Mesenteric cysts are uncommon benign intra-abdominal masses which present during childhood with multiple clinical manifestations. High index of suspicion is required to clinically diagnose this pathology. They are frequently located in the ileal mesentery but can be also found anywhere along the mesentery of the gastrointestinal tract, occasionally also extending into retroperitoneum. Complete surgical excision is the treatment of choice and will vary according to the type of lesion present.

Case Description: 6 year old female was referred to our hospital in view of worsening constipation despite being on laxatives. Ultrasonography (US) noted a massive intra-abdominal cyst, displacing all intestine and abdominal organs, later confirmed by computerized tomography scanning (CTS). CTS noted a giant space occupying cystic lesion causing a mass effect with posterior displacement of bowel loops in keeping with a mesenteric cyst. In view of the size of lesion, she initially underwent US guided aspiration of the cyst, and fluid was sent for cytology and culture. This was all negative. Following that she was prepared for operation, where she underwent a laparoscopic excision of cyst. The cyst was found to be coming out from the transverse colon, with a long torted pedicle. Approximately 750mls were aspirated, followed by complete excision of lesion. This was sent for histopathological diagnosis which confirmed the diagnosis.

Conclusion: Mesenteric cysts are rare lesions in the paediatric population and should be considered as a differential diagnosis in patients presenting with acute or subacute intestinal obstruction or a palpable abdominal mass. All these lesions should ideally be excised whilst preserving the vascular supply and intestinal integrity. The diversity of clinical pictures and the rarity of this pathology leads to specific challenges in the diagnosis and surgical management of this anomaly.

Categories

Gastrointestinal

LO58

PNEUMOVESICOSCOPIC DIVERTICULECTOMY WITH URETERAL REIMPLANTATION: INSIGHTS FROM A FIVE-PATIENT CASE SERIES.

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Aim: To present our experience and clinical outcomes related to pneumovesicoscopic diverticulectomy combined with ureteral reimplantation.

Methods: We conducted a retrospective review of 30 cases (52 ureters) involving pneumovesicoscopic ureteral reimplantation between January 2018 and February 2022. Five male children underwent simultaneous ureteral reimplantation and diverticulectomy using a 5-mm trocar, 30-degree scope, two bladder anchor sutures under cystoscopy, followed by two 3mm trocars under pneumovesicoscopy. Carbon dioxide insufflation was applied at 10–12mmHg pressure. After, stenting the ureter, diverticula with the ureter were mobilized into the bladder. The defect was sutured using 4/0 vicryl, and ureters were implanted employing cross trigonal or modified Glenns-Anderson technique, followed by Foley catheter insertion.

Results: Three left side and two right ureteric reimplantations associated with diverticulectomy. Three left and two right ureteric reimplantations associated with diverticulectomy were performed. indications of reimplantation with diverticulectomy were three cases with ureterovesical junction obstruction involved in the diverticulum and two cases with grade IV and V vesicoureteric reflux. The mean operative time was 190 minutes with no cases converted to open surgery and no intraoperative complications. Post-operative complications were retention of urine in one patient managed by reinsertion of foley catheter for two days more, bladder hematoma, and clot retention in another patient, managed by percutaneous evacuation of the hematoma. The average bladder catheter time is 3.8+/-0.45 and hospital stays are 4.8+/-1.3 days. Follow-up ultrasound and a voiding cystourethrogram showed improved hydronephrosis and disappearance of the diverticulum.

Conclusions: Pneumovesicoscopic Diverticulectomy combined with Ureteral Reimplantation proves to be a feasible, safe procedure with excellent outcomes. This approach offers the advantages of a low complication rate, rapid recovery, and favorable cosmetic results.

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Urology

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PNEUMOVESICOSCOPIC SUBCAPSULAR BLADDER DIVERTICULECTOMY: A VIDEO PRESENTATION.

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Introduction: Bladder diverticulum is a protrusion of the bladder mucosa through the bladder's muscular wall usually presented by recurrent urinary tract infection (UTI) voiding problem, and urine retention. the treatment of choice before was open surgery nowadays minimally invasive therapy is a good alternative.

Aim: Herein, we present a video for a case of pneumovesicoscopic subcapsular bladder diverticulectomy.

Case presentation: A four years old male boy not known to have any medical problems, presented with recurrent UTI, difficulty of voiding, weak stream, and feeling of incomplete emptying. He was investigated by abdominal ultrasound showed a normal upper tract, and bladder diverticulum then voiding cystourethrogram showed a large bladder diverticulum. He underwent pneumovesicoscopic subcapsular bladder diverticulectomy with a smooth postoperative course catheter was removed after 3 days. Follow-up ultrasound after 2 months normal both kidneys and normal bladder no diverticulum.

Conclusion: Pneumovesicoscopic subcapsular bladder diverticulectomy is a feasible option for the management of pediatric bladder diverticulum with an excellent outcome.

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Urology

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INGUINAL HERNIA MAY HIDE THE DIAGNOSIS OF A SIMULTANEOUS RARE TYPE OF FEMORAL HERNIA: LAPAROSCOPIC REPAIR OF LAUGIER HERNI.

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Femoral hernia is rare in children and is difficult to diagnose because it is often confused with indirect inguinal hernia. Its frequency ranges between 1-2% among all hernias in children. Laparoscopy has an important role in the diagnosis and treatment of atypical hernias such as femoral hernia.

Case: A 6-year-old girl was operated for bilateral inguinal hernia by bilateral inguinal open surgical approach in another hospital. Preoperative ultrasound reported as bilateral inguinal hernia. A month later, she admitted to the emergency department with complaints of irreducible swelling, pain and restlessness in the right groin. The swelling was observed below the inguinal canal and inguinal herni incision. Ultrasound showed unreduced omentum entering from the medial aspect of the inferior epigastic artery. Laparoscopy was performed. The right and left inguinal canal internal ring were closed due to previous opertion. It was observed that the omentum entered through the laguiner hernia (femoral hernia variant) arising from the side of the lacunar ligament medial to the inferior epigastic artery on the right side. Omentectomy was performed. 3/0 etibond suture was used for hernia repair. She did well postopertively.

Conclusion: Femoral hernia is a rare pathology in childhood and its diagnosis is difficult. Laparoscopic approach provides better visualization of the inguinal region and increases the diagnostic accuracy. It also makes it possible to correct any defect in the inguinal region. Pediatric surgeons should always consider the possibility of femoral hernia in the differential diagnosis of hernia, especially hernia or incarcerated tissue is palpated in a lower atypical position close to the inguinal ligament.

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DIAGNOSTIC AND TREATMENT DILEMMA IN A CASE OF A WANDERING SPLEEN WITH A LARGE CYST AND PORTAL HYPERTENSION

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Wandering spleen represents ectopic location of the spleen due to laxity or absence of its ligaments. It is a rare cause of abdominal pain in children and can be complicated with splenic torsion, infarction and portal hypertension.

Herein, we present a 16-year-old girl who was referred to our Institution due to a large cystic formation in the pelvis detected by the juvenile gynecologist. A child suffered from intermittent lower abdominal pain followed by nausea for the last three weeks. Physical exam revealed palpable suprapubic mass. Abdominal computed tomography showed ectopic, rotated, enlarged spleen with a large unilocular cyst (113 x 111 x 140 mm). Multiple, tortoise gastric blood vessels, enlarged diameter of the portal (13 mm) and lienal (10 mm) vein were identified (portal hypertension). Serological test for echinococcosis and tumor markers were negative. Laparoscopic untwisting of the splenic pedicle was performed. There were no signs of splenic infarction. Laparoscopic operation: splenic cyst in the upper pole was opened, drained and resected. Wall of the cyst was sent to ex-tempore histopathologic evaluation (benign). Laparoscopic splenopexy via peritoneal pocket technique in the left lateral peritoneal wall was performed. Definitive shaping of the spleen was completed through mini laparotomy. Subsequently, fixation to the parietal peritoneum with endostitches covered with omentum was achieved. Operative and postoperative period was uneventful. Final histopathologic finding proved the diagnosis of the splenic cyst. During the 2-year follow-up period signs of portal hypertension almost completely withdrew.

Wandering spleen should be considered in the diagnosis of abdominal mass in children. Laparoscopic splenopexy for wandering spleen in children is feasible and reliable option. Portal hypertension caused by wandering spleen rotation after laparoscopic splenopexy does not always require surgery.

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Miscellaneous

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Minimally invasive surgery (MIS) for adrenal tumours in children: A single institutional experience

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Purpose: Adrenal tumours in children can vary from the common malignant lesions like neuroblastoma to much rarer benign ones like adrenal adenoma, ganglioneuroma, phaeochromocytoma, etc. Minimal invasive surgery (MIS) for adrenal tumours is a challenge because of the rarity of lesions amenable for the same and the anatomical constraints of surgery, particularly in the younger age group. Our aim is to review our institutional experience with MIS for adrenal tumours in children.

Methods: We had retrospectively reviewed electronic medical records of all children under 18 years of age who underwent MIS for adrenal tumours between 2020 and 2023. Demographic data of the patients was collected along with history and physical examination, hormonal workup, imaging, duration of surgery, conversion rate, reasons for conversion, duration of postoperative stay, complications, histopathology and follow-up.

Results: Minimally invasive adrenalectomy was performed in a total of 7 children (4 boys and 3 girls) with a mean age of 12 years (4-16). Four (57.2%) tumours originated from the right adrenal, and 3 (42.8%) from the left. The mean tumour weight and size (largest dimension) were 27.13g (4.2- 34 g) and 3.94cm (1.2-8) cm, respectively. Histopathology revealed phaeochromocytoma (5), adrenocortical neoplasm (1) and neuroblastoma (1). Two cases were converted to open surgery (both phaeochromocytoma), while rest of them were completed by laparoscopy. Clavien-Dindo grade II complications were seen in 4/7 cases. The median hospital stay was 5 (2-11) days. Median follow-up is 7 months (1-35 months). One patient had persistent hypertension who on evaluation was found to have a residual lesion and is due for a redo-procedure.

Conclusion: In pediatric adrenal tumours, minimal invasive surgery is an effective, feasible, and safe with all advantages of MIS despite the small challenges faced in the early years with initial cases. Proper selection of cases is vital for achieving good outcomes.

Categories

Oncology

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RETROSPECTIVE ANALYSIS OF PATIENTS OF ANORECTAL MALFORMATIONS (ARMS) WHO UNDERWENT LAPAROSCOPIC-ASSISTED ANORECTOPLASTY (LAARP).

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Introduction: Anorectal anomalies consist of a complex group of birth defects with a broad variety of expressions. ARM management has moved from classical procedures to PSARP to minimally invasive procedures. In 2000, Georgeson *et al.* introduced laparoscopic anorectoplasty which has gained much popularity.

Methods and methodology: Retrospective analysis of Patients of ARM who underwent LAARP, between the years 2017-2022, in our institution. Data collected included demographic details, distal loopogram findings, intraoperative findings, method of fistula ligation, postoperative complications and management, and functional outcome.

Results: 21 patients of anorectal malformations underwent Laparoscopic assisted anorectoplasty between 2017 to 2022. There were 21 male patients and 1 female patient. Rectovesical fistula(5), rectoprostatic fistula(4), rectobulbar urethral fistula(2), congenital pouch colon(6), imperforate anus without fistula(2), rectal atresia(1), and common cloaca(1). Patients with divided stomas had a high-pressure distal loopogram before surgery. Total urogenital mobilisation and laparoscopic-assisted anorectoplasty were performed in the case of the common cloaca. Different techniques were used to treat rectal fistulas, including clips, sutures ligation, stapler and simple division. In the postoperative period - Two patients experienced wound dehiscence of Neoanus – and underwent redo anoplasty, two patients developed Adhesive intestinal obstruction and underwent adhesiolysis and one patient developed port site incisional hernia for which laparoscopic repair was done. The follow-up period was between 2 months and 4.5 years. Out of 13 patients who underwent stoma closure, 10 patients developed faecal incontinence and 4 patients developed mucosal prolapse. None of the patients developed urethral diverticulum during the follow-up period

Conclusion: LAARP can be considered in a wide spectrum of ARM. Long-term follow-up is required to evaluate the functional outcomes of LAARP in ARM patients.

Categories

Gastrointestinal

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LAPAROSCOPIC FUNDOPLICATION IN SMALL INFANTS WITH HIGH-GRADE GASTROESOPHAGEAL REFLUX (GER).

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Introduction: Modern paediatric surgical practice frequently involves the surgical treatment of gastroesophageal reflux disease (GERD). The gold standard for the management of high-grade or non-responsive GER is laparoscopic Nissen's fundoplication. We talk about our experience doing a grade 3 GER patient's laparoscopic fundoplication.

Case details: A male 7-month-old weighing 2.1 kg, complaining of recurrent lower respiratory tract infections since day 15 of life, made several hospital visits in his past. Another patient was a 6-month-old male, 2.4 Kg infant with recurrent pneumonia and laryngeotracheobronchomalacia. Both patients were diagnosed with grade 3 GER in a milk scan. The patients were taken for surgery. A five-trocar technique was used with trocars being placed in the umbilicus (camera port), the right and left lumbar region (the working ports), the epigastric (liver retractor), and the left upper quadrant (stomach retractor). The gastrohepatic ligament was incised and opened. The right and left diaphragmatic crus were identified and cleared. An adequate length of the intraabdominal oesophagus was then mobilized to allow for an adequate wrap. The crural repair was performed. Short gastric vessels were divided while the stomach was retracted using bowel grasper, as it was more feasible in limited working space. The gastric fundus was brought posterior to the oesophagus. Nissen fundoplication was completed with three interrupted sutures over a 10 Fr Ryle's tube. Closure done. Both patients started accepting feeds from POD1 without any regurgitation. Case 1 developed VAP requiring prolonged ventilation support following which parents took the child home against medical advice. Case 2 Underwent epiglottoplasty followed by aortopexy for severe tracheomalacia. He has been Tolerating feeds from FG and gaining adequate weight (2.5 kg in 3 months)

Conclusion: Laparoscopic fundoplication is feasible and can be performed safely and effectively in small infants. Extensive mobilization can be avoided to perform fundoplication.

Categories

Gastrointestinal

SO70

ANALYSIS OF SWL TREATMENT OF RENAL CALCULI IN CHILDREN UNDER 3 YEARS OF AGE.

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Introduction: The incidence of urolithiasis is constantly rising. Predisposing factors for developing renal calculi are metabolic disorders, anatomical defects of the urinary tract, urinary tract infections, inadequate lifestyle, and others. SWL (shock wave lithotripsy) is one of the methods for the treatment of upper urinary tract calculi. The study aimed o asses the effectiveness of SWL in patients under 3 years of age.

Material and methods: This is a retrospective study. We have analyzed history charts of patients who underwent SWL for 4 years (2018-2022), focusing on the youngest group of patients under 3 years of age.

Results: Of 582 procedures, 42 were performed for 36 children from 6 months to 36 months of age (13 girls and 21 boys). All procedures were done under general anesthesia. The procedure time ranged from 22 to 75 min (mean 40 min, median 38 min). The size of the stone ranged from 4 mm to 30 mm (mean 9,45 mm, median 8 mm). The effect was good after 39 procedures. 3 children needed more than 1 procedure. 1 complication was observed – a stoneway after SWL of a large 3 cm stone. No hematomas were observed.

Conclusions: SWL is a small invasive procedure method of treatment for renal calculi. It is feasible even in the youngest group of patients. Complications are rare and the procedure may be repeated if needed.

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Urology

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ROBOT-ASSISTED LAPAROSCOPIC NEPHRECTOMY FOR AN INFANT WITH A GIANT HYDRONEPHROSIS OF A HORSESHOE KIDNEY.

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Horseshoe kidney is the most common renal fusion anomaly. Robotic surgery has revolutionized many aspects of urological surgery. However, robotic surgery is limited in children under 2 years of age with large abdominal masses. We report our experience of robot-assisted laparoscopic nephrectomy on an infant with a giant hydronephrosis of a horseshoe kidney.

A 14 months-old girl presented with a postnatal history of abdominal mass. Diagnostic tests revealed a giant left hydronephrosis of a horseshoe kidney. The left moiety of the horseshoe kidney was non-functional. The diameter of the renal pelvis increased during follow-up and it was of 11 cm.

We performed robotic-assisted laparoscopic nephrectomy for the non-functioning moiety of a horseshoe kidney secondary to uretero–pelvic junction obstruction. The patient was placed in the lateral decubitus position and four trocars were positioned: three 8-mm robotic ports and a 3-mm assistant port. Nephrectomy was performed and functioning moiety was repaired with non-absorbable suture. Total operative time including docking was of 180 min. Patient was discharged 24 hours postsurgery without complications.

Robotic-assisted laparoscopic nephrectomy is a feasible and safe method with good indications especially for children with a horseshoe kidney disease.

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Urology

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TRANSURETHRAL NEO-ORIFICE (TUNO) FOR ECTOPIC OBSTRUCTIVE MEGAURETER WITH PRESERVED FUNCTION IN INFANTS.

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Aim: To present the creation of a transurethral neo-orifice (TUNO) near the trigone as an initial approach in duplicated ectopic megaureters with preserved moiety function to avoid external urinary diversion.

Methods: We have treated with these technique 4 infants. They presented unilateral duplicated system and ectopic obstructive upper ureter. All patients were symptomatic with at least two urinary infections despite nocturnal antibiotic prophylaxis. Scintigraphy showed a 29±11% moiety partial function. In all cases the urethrocystoscopy failed to show the meatus of the ectopic ureter. Under ultrasound scan and direct cystoscopic vision the retrovesical ectopic ureter was punctured transvesically. The puncture was done with a 4Fr needle and contrast was instilled in the ectopic ureter to confirm retrograde pyelogram. Through the puncture needle a 0,014´´guidewire was inserted into the upper moiety. The punctured site was then dilated with a high-pressure balloon and the neo-meatus edge was coagulated with monopolar electrocautery to achieve cohesion.

Results: Mean operative time was 62 ± 10 minutes. The mean age at treatment was 6.8 ± 2.9 months. There were not perioperative or postoperative complications. Urinary tract infections disappeared in all cases. The assessment done 3 months postoperatively demonstrated a significant decrease in the grade of the hydronephrosis and retrovesical ureter diameter (4 mm vs 20 mm). Moiety function improved in 2 cases.

Conclusion: Creation of TUNO is a minimally invasive technique successful as the initial management of ectopic ureter. In our experience, it could avoid urinary tract infections, decreases ureteral dilatation and preserves parenchyma function.

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Urology

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A NEW ENDOSCOPIC DEVICE TO MANAGE ACUTE GASTROINTESTINAL BLEEDING IN CHILDREN.

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Introduction: Acute gastrointestinal bleeding in children may take advantage of endoscopic treatments. Nevertheless, hemostasis may be technically difficult to achieve in cases of diffuse mucosal injury. In literature there few reports of a new endoscopic hemostatic agent recently adopted in pediatrics: the Hemospray. It is a mineral powder that can be administered endoscopically and promotes hemostasis. The powder, inorganic and inert, forms an adhesive layer when it encounters fluid. We present a case of massive rectosigmoid bleeding successfully treated with Hemospray.

Methods: We retrospectively reviewed case treated with this device in our center. Clinical data, duration of procedure, need for blood transfusion were recorded.

Results: We treated an 8 years-old patient who underwent subtotal sigmoid colectomy, stoma opening and rectosigmoid stump closure for toxic megacolon resulted in sigmoid necrosis. From 10^{th} postoperative day (POD) the patient presented rectorrhagia with severe anemia requiring several blood transfusions. On 13^{th}POD we performed a proctosigmoidoscopy that showed a diffuse ischemic proctitis. We then endoscopically applied the Hemospray on the walls of the rectosigmoid stump. The procedure lasted about 30 minutes. The patient did not present rectorrhagia anymore and hemoglobin values stabilized. Seven days after the procedure a new episode of rectorrhagia was recorded, we performed another proctosigmoidoscopy but the bleeding self-limited and we observed a partial rectal healing.

Conclusions: The Hemospray proved to be effective to treat even a massive bleeding and easy to apply. Though, more experience is needed to define the best field of application of Hemospray in pediatrics.

Categories

Gastrointestinal

LO74

RETROPERITONEAL VERSUS TRANSPERITONEAL ROBOTIC-ASSISTED LAPAROSCOPIC NEPHRON SPARING SURGERY FOR RENAL TUMOR IN CHILDREN. A MULTICENTER STUDY.

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Background: Robot-assisted laparoscopic partial nephrectomy (RALPN) combines the advantages of minimally invasive surgery and nephron sparing surgery (NSS). RALPN in children remains poorly studied. The aim of this study was to compare retroperitoneal and transperitoneal RALPN in the management of renal tumors in children.

Methods: A prospective institutional analysis of children presenting with renal tumors treated with RALPN was undertaken between November 2017 and March 2023. For each child, clinical parameters were collected relating to diagnosis, surgery and outcomes.

Results: Fourteen RALPN were performed; 7 with a retroperitoneal approach and 7 with a transperitoneal approach. The youngest was 2 years old, the smallest weighing 13.5 kg. No per or post operative complication occurred. One child required non-emergent conversion to visualize the tumor with ultrasound. Median hospital stay was shorter after R-RALPN (2 days) than after T-RALPN (5 days) (p=0.003). Resection margins were clear in all cases (R0). Histology examination reported 4 Wilms tumors, 3 papillary carcinomas, 2 metanephric adenomas, 2 nephrogenic rests, 2 cystic nephromas and one lesion of nephroblastomatosis. No recurrence occurred. After a median follow-up of 21 months [IQR13-55], two children had an iterative partial nephrectomy for a second lesion in the context of WT and nephroblastomatosis.

Conclusions: The study confirms the safety and effectiveness of RALPN in selected children with renal tumors with excellent outcomes with both approaches. This represents the largest reported experience to date in children. Ideally, surgeons should master both techniques to tailor the procedure to the tumor and/or patient characteristics.

Categories

Oncology

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ENDOSCOPIC CLOSURE OF PERSISTENT GASTROCUTANEOUS FISTULA.

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Introduction: The over-the-scope-clip (OTSC) system is a newly designed method for the mechanical compression of large areas in the gastrointestinal tract. So far, indications for OTSC application are hemostasis of primary or postinterventional bleeding, closure of iatrogenic full-thickness or covered perforations. Recently in adult population closure of gastrointestinal tract fistulas using this device has been described. Aim of the study is to present our experience in pediatrics with this new minimally invasive technique applied to persistent gastrocutaneous fistulas after gastrostomy tube removal.

Methods: We retrospectively reviewed cases treated with OTSC device in our center. Patients with at least 3 months follow up were enrolled. Clinical data, duration of procedure, and postoperative outpatient visits were recorded.

Results: We enrolled a 10 years-old patient affected by citrullinemia who was subjected to percutaneous endoscopic gastrostomy at the age of 3 for growth impairment in chronic liver transplant rejection. The patient, at the age of 6, did not required gastrostomy feeding anymore; hence, gastrostomy tube was removed, and the gastrostomy left closing spontaneously. The latter failed resulting in a persistent gastrocutaneous fistula. The patient was therefore subjected to endoscopic gastrocutaneous fistula closure using the OTSC device. The procedure lasted 15 minutes. The postoperative course was uneventful, and the patient discharged the day after. At a 6 months follow-up no evidence of recurrence was recorded.

Conclusions: The endoscopic closure of gastrocutaneous fistula proved to be safe and effective. Though, more experience is needed to promote its application in pediatric patients.

Categories

Gastrointestinal

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MININVASIVE (LAPAROSCOPIC-ENDOSCOPIC) RESECTION OF GIANT CONGENITAL BLADDER DIVERTICULUM WITH URETERAL REIMPLANTATION.

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Purpose: We presented our combined (laparoscopic and endoscopic) mininvasive approach to treat Giant Primary Congenital Bladder Diverticula(PCBD), considering size, clinical and diagnostics findings.

Methods: We retrospectively evaluated age, sex, UTI, diverticula size, clinical and uroflowmetry findings, and management of 4 consecutive patients diagnosed with giant-PCBD in our Department. Uroflowmetry studies were performed in all cases. Diagnostic examinations included ultrasound, voiding cystography and diagnostic cystoscopy for all patients. Resected diverticula were sent for pathological evaluation.

Results: 3 boys and 1 girl, ranging age from 4 to 8 years (mean, 6,2years) were included in this study. All diverticula were single, occurred in posterolateral locations and presented size >5cm (mean 5,5cm). All patients developed at least three UTIs before admission to the hospital, two present voiding disfunctions (incontinence, urge incontinence after urination, urinary retention, straining to urinate). At uroflow all patients presented high Post-Micturition Residue(PMR) and lower Maximum Bladder Capacity(MBC). All underwent to combined laparoscopic-endoscopic diverticulum resection with ureteral reimplantation. In the 1st patient, resection was performed with stapler. In the other 3, tightness of bladder suture was checked with indocyanine green (ICG). Ureteral stent was positioned and removed 4 weeks later. In the first case was reported stones formation at late follow-up. All children reported improvement after in control uroflowmetry study over follow-up periods.

Conclusion: PCBD of >5cm is characterized by UTI development, functional lower urinary tract symptoms, and disorders of bladder storage or emptying. Surgical repair is associated with improvement of voiding dysfunction and elimination of UTIs. Laparoscopic approach represents a valid and effective alternative to Open treatment. Minimally invasive surgery allows excellent visualization of bladder anatomy and vesical-ureteral junction with ureter control during the procedure. Simultaneous endoscopic assistance is fundamental in guiding the surgical steps as well as ICG intravesical administration to confirm the success of the operation.

Categories

Urology

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MININVASIVE MANAGEMENT OF LATE PRESENTING DUODENAL WEB.

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Purpose: Late presenting duodenal webs (Type I atresia) are even rarer and characterized usually by proximal duodenomegaly. Conventional management involves web resection and duodenoduodenostomy with or without duodenoplasty. We describes our endoscopic/laparoscopic surgical strategy and management detailing the technical aspects of techniques.

Methods: We retrospectively evaluated 4 consecutive patients diagnosed with late duodenal web in our Department. All patients underwent previous surgery for esophageal atresia type A with gastrostomy first and subsequent delayed primary anastomosis. Diagnostic examinations included ultrasound and Upper-Gastrointestinal-Study(UGI) with contrast meal and follow through showing a classic windsock duodenal web confirmed by a diagnostic endoscopy.

Results: 3 boys and 1 girl, ranging age from 4 to 11 months, were included in this study. Enteral feeding via gastrostomy was poorly tolerated causing several episodes of nonbilious vomiting and upper abdominal distension associated to difficulties to increase patient's nutrition. All presented the obstruction in the second duodenal portion (pre-ampulla web). Two presented duodenomegaly of proximal duodenal portion. Older patient underwent to endoscopic resection of duodenal web. In other three duodenal web was accurately identified and removed laparoscopically without duodenoplasty. A duodenal longitudinal anterior incision at the variation of caliper was performed and resected the web, it was sutured in transversal way. Intraduodenum indocyanine green (ICG) visualization under near-infrared light was used in the last two case. The procedure were completed successfully and patients showed good postoperative outcomes. A contrast study performed at 4weeks demonstrated an improved proximal duodenal profile; patients tolerated full diet remaining symptom-free.

Conclusions: According our experience minimal invasive techniques (Laparoscopy and Endoscopy), are effective and safe supporting web resection as management of duodenal web without tapering of proximal duodenum. They require advanced technical skills. Intraduodenum-ICG injection during laparoscopic surgery is a feasible adjuvant for duodenal web localization, confirmation of canalization and tightness of suture.

Categories

Gastrointestinal

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NON-KERATINIZING SQUAMOUS METAPLASIA OF THE URINARY BLADDER IN CHILDREN – OWN EXPERIENCE

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Aim: The authors present methods of diagnosis and treatment of non-keratinizing squamous metaplasia of the bladder in children. Squamous metaplasia is an abnormal replacement of the urothelial epithelium with multilayered, squamous, non-keratinizing epithelium. There are few publications in the world literature describing the occurrence of metaplasia in children.

Material And Methods: Our department treated 289 patients with metaplastic changes in the bladder. We have been conducting research on metaplasia since 2005. There were 283 girls and 6 boys in this group. The age of patients was between 1.5 and 17 years. Patients underwent a number of tests: general urinalysis and urine culture, ultrasound, cystoscopy, immunohistochemical, endocrine and urodynamic tests. We performed 3 clinical trials.

Results: Immunohistochemistry confirmed the existence of non-keratinizing stratified squamous epithelium with no tendency to tumorigenesis in the future. Endocrine tests have shown low levels of progesterone. Urodynamic examination revealed detrusor muscle insufficiency. In the conducted clinical study, the presence of both estrogen and progesterone receptor receptors was confirmed in the examined tissues.

Conclusions: Squamous metaplasia can occur in both children and adolescents. Symptomatic treatment aims to improve the quality of life of patients. A clinical study confirmed the expression of steroid hormone receptors typical of the urinary tract in bladder triangle squamous metaplasia. The formation of metaplastic lesions requires further research in terms of: urine composition, hormonal profile of patients, abnormalities in the structure and function of the epithelium itself, and the relationship between the occurrence of lesions and environmental pollution.

Categories

Urology

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ROBOTIC BRONCHIAL SLEEVE LOBECTOMY IN CHILDREN: AN ALTERNATIVE TO THORACOTOMY FOR THE TREATMENT OF PROXIMAL TUMORS.

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Purpose: The use of surgical robot for complex pediatric oncologic thoracic surgery is barely described. We report two cases of robotic bronchial sleeve lobectomies in children as an alternative to thoracotomy for proximal tumors.

Patients and Methods: We describe the indication, surgical planning, strategy and post-operative course of two four-arm robot-assisted bronchial sleeve lobectomies (right and left upper lobes) performed for proximal tumors in children performed using the Da Vinci Surgical Xi System (Intuitive Surgical, California, USA).

Results: From November 2022 to October 2023, an 11-year-old girl presenting with a right main bronchus localized carcinoid tumor and a 10-year-old boy presenting with left main bronchus localized mucoepidermoid tumor were treated in two pediatric centers. They underwent a 4-arm robot-assisted bronchial sleeve lobectomy with node harvest (video). In both cases, bronchial section margin was secured during frozen section analysis and end to end anastomosis was sewed. Length of procedures were 229 and 233 minutes. No per or post-operative complication were reported. Length of hospital stay were 6 and 4 days. Chest tubes were removed after 3 and 1 days. Final pathological analysis was pT2b N0 M0 R0 for the carcinoid tumor and pT1b N0 M0 R0 for the mucoepidermoid tumor. Follow-up at 1 year for the first patient showed no evidence of recurrence.

Conclusion: These two cases demonstrate safety and feasibility of robot-assisted bronchial sleeve lobectomy in children. To perform mini-invasive surgery in these rare and complex pediatric situations, close collaboration between thoracic robotic adult and pediatric surgeons is highly valued.

Categories

Robotics and Innovations

SO84

RAT ANIMAL MODEL FOR TRAINING LAPAROSCOPIC SKILLS USEFUL IN NEONATAL GASTROINTESTINAL PERFORATION.

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Purpose: Although necrotizing enterocolitis (NEC) remains the classic etiological factor for pneumoperitoneum in a neonate, several other conditions, such as Spontaneous Intestinal Perforation (SIP), gastric and duodenal perforations may also be implicated. The use of laparoscopy in NEC management has been reported previously. However, no studies focused on the exclusive diagnostic and therapeutic role of laparoscopy in neonatal gastrointestinal perforations. Our study aim was to define a small animal model simulating neonatal conditions to (1) Evaluate the efficacy of laparoscopy in localizing gastrointestinal perforations; and (2) Assess the feasibility of delicate intracorporeal suture under laparoscopic limited space conditions.

Methods: Thirty Sprague Dawley rats underwent surgery. Each intervention was divided in two parts: In Part I, trocar placement and a random gastrointestinal perforation were performed. Not creating any perforation was also an option, to simulate idiopathic pneumoperitoneum. During Part II, the perforation, if present, was identified and sutured. Surgeon of Part II was blinded during Part I. Post-euthanasia, an exploratory laparotomy was performed to assess the suture line for leaks or strictures.

Results: During Part I, 29 perforations were created: 22 were located in the ileum, 3 in the colon, 2 in the jejunum, 1 in the stomach, and 1 in the duodenum. In one case, no perforation was created. During Part II, all 29 perforations were successfully identified and sutured. Average duration of Part II was 53 ± 16 minutes. Suture evaluation showed suture leakage in two cases (6.9%) and strictures in other two rats (6.9%).

Conclusion: Laparoscopy has been shown to be technically feasible and highly sensitive in detecting isolated gastrointestinal perforation in a rat animal model. This model could be especially valuable for enhancing skills and confidence in approaching neonatal pneumoperitoneum in humans.

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Gastrointestinal

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ENDOSCOPIC BALLOON DILATION OF PRIMARY OBSTRUCTIVE MEGAURETER WITH ASSOCIATED PARAURETERAL DIVERTICULUM.

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Aim: to present the technical features and outcomes of endoscopic balloon dilatation (EBD) of primary obstructive megaureter (POM) with associated ipsilateral paraureteral diverticulum.

Patients and methods: Sixteen POM cases with associated paraureteral diverticulum were treated by EBD between 2004 and 2021. In cases of large diverticulum, a careful endoscopic inspection with a ureteral catheter and a hydrophilic guidewire is essential to identify the ureteral meatus. Then the guidewire is introduced into the tortuous ureter and the dilation of the vesicoureteral junction is performed using high-pressure balloon catheters (3F) with a minimum balloon diameter of 5 mm followed by temporary Double-J stent placement. Complications and outcomes were analyzed with a mean follow-up of 7.2 ± 4.4 years.

Results: Median age at treatment was 5 months (2-44) with a median operating time of 15 minutes (10-30) and hospital stay of 1 day. No perioperative complications occurred. Initial renal function was preserved in all cases and 13 ureters showed a non-obstructive pattern on the MAG-3 renogram after the EBD. Three cases presented persistent postoperative hydroureteronephrosis with obstructive pattern and needed another EBD months later. Secondary VUR was identified in 7 cases and treated by endoscopic subureteral injection. Ureteral reimplantation was required in 3 ureters (1 re-stenosis recurrence, 1 persistent VUR, and 1 non-symptomatic persistent hydroureteronephrosis whose parents demanded surgical treatment). The endoscopic approach of POM with associated diverticula had a long-term success rate of 81.25% (13/16).

Conclusion: The presence of paraureteral diverticulum seems to be a poorer prognostic factor for the success of endoscopic treatment of POM, leading to a higher rate of secondary reflux. Nevertheless, it was a safe and feasible technique with acceptable long-term results.

Categories

Urology

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MANAGEMENT OF PRIMARY SPONTANEOUS PNEUMOTORAX IN ADOLESCENTS.

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Purpose: To analyze alternative treatment approaches and their recurrence rates for primary spontaneous pneumothorax (PSP) in adolescents.

Methods: A retrospective single institution study of patients with PSP treated from 2018 to 2023. A comparative analysis of three treatment modalities was performed: conservative approach (observation), drainage and VATS resection (video-assisted thoracoscopic surgery). Criteria for drainage were lung collapse, tension pneumothorax or pneumothorax larger than 3cm. Criteria for VATS were persistent air leak or recurrence of PSP with blebs or bullae found on CT (computed tomography).

Results: 24 patients were included, 71% were male (n=17) and 29% female (n=7). Median age at manifestation was 15.9 years (12.1-17.5). Primary treatment in all patients was either conservative approach or drainage. One patient was treated for PSP on both sides (25 cases of PSP). 32% of cases (n=8) were treated conservatively, 63% (n=5) of them had recurrence, of which 40% (n=2) was indicated for VATS. Thoracic drainage was the primary treatment in 68% of cases (n=17), of which 41% (n=7) was indicated for VATS due to persistent air leak, 18% (n=3) for recurrence of PSP and 1 patient for co-finding of mediastinal mass. In 35% (n=6) drainage was a successful final treatment. In 52% of cases (n=13) VATS procedure was performed, with one post-operative complication (staple line dehiscence requiring thoracotomy). Recurrence rate after VATS was 15% (n=2). Median LOS (length of stay) in conservative approach was 6 days, in chest tube insertion 8 days, and in patients with VATS 11 days. Median time to discharge postoperatively was 7 days for thoracic drainage and 6 days for VATS.

Conclusion: In pediatric patients with PSP, conservative management and thoracic drainage were successful approaches in 48% of cases. In 52% VATS was performed, which offered the lowest recurrence rate with discharge time after operation comparable with drainage alone.

Categories

Thorax

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LAPAROSCOPIC REPAIR OF A SPIGELIAN-LIKE HERNIA IN A CHILD WITH MULTIPLE MUSCULO-SKELETAL MALFORMATIONS: A CASE REPORT.

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Introduction: Lateral abdominal wall hernias represent a rare heterogenous group of hernias and are often associated with gonadal anomalies. The purpose of this case report is to present a minimally invasive surgical approach and to point out its advantages over open technique.

Case description: A female patient presented at the age of 12 months with a history of a soft reducible mass in the left lateral abdominal wall present from birth. At clinical examination multiple musculo-skeletal malformations were noticeable. The mass was localised in an atypical position most resembling a Spigelian-like hernia. Ultrasound scan confirmed a fascial defect of 22x18 mm with bowel loops protruding. Skeletal X-ray showed multiple malformations of the spine and ribs. The patient was indicated for MRI imaging which apart from the lateral wall hernia also revealed hypoplasia of the left abdominal wall musculature. At the age of 21 months the patient underwent surgical repair of the hernia via laparoscopic approach. The fascial defect with protruding sigmoid colon was identified and closed with interrupted Ethibond 3-0 sliding sutures. The hypoplastic abdominal wall was treated with plication also using Ethibond 3-0 sutures. Laparoscopic approach helped identify a higher position of the left ovary fixed to the lateral abdominal wall which made possible avoidance of its injury. The post-operative course was uneventful and follow-up at 1 and 2 months post-operatively showed no recurrence and good cosmetic results.

Conclusions: To our knowledge, this is the first reported case of laparoscopic treatment of Spigelian-like hernia in a child. Laparoscopic treatment of rare types of abdominal wall hernias is feasible and safe. Given the superior visualisation, a more accurate evaluation of the state of the abdominal wall musculature is possible. Further, gonadal position, which is often anomalous in such hernia entities, becomes easier to assess.

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Miscellaneous

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PEDIATRIC ENDOSCOPIC PILONIDAL SINUS TREATMENT (PEPSIT) IS THE NEW STANDARD OF CARE OF PILONIDAL SINUS DISEASE (PSD) IN CHILDREN AND ADOLESCENTS. A RETROSPECTIVE STUDY OF LONG-TERM SURGICAL OUTCOMES ON 556 PATIENTS.

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Purpose: This study aimed to investigate the status and long-term outcomes of pediatric endoscopic pilonidal sinus treatment (PEPSIT).

Methods: The medical records of 556 patients (384 boys), with median age of 14.3 years (range 11-18), who underwent PEPSIT in 2 pediatric surgical centers in the period 2018-2023, were retrospectively analyzed. Study data including patient demographics, disease severity, complications, and follow-up information, were retrieved from the electronical database of both centers. Forty-one/556 (7.3%) had recurrent PSD after previous open surgery. The equipment used for PEPSiT included fistuloscope, endoscopic forceps, brusher, and monopolar electrode to remove hair and heal the fistula.

Results: The median operative time was 25.5 minutes (range 15-45). No intra-operative complications occurred. The median pain score, assessed using Visual Analogue Scale (VAS) during the first 48 postoperative hours, was 2.8 (range 2-5). The median time of analgesic intake (ibuprofen or paracetamol) was 22 hours (range 16-28). The median hospital stay was 7.5 hours (range 5-27). Postoperative ozonide oil-based dressing was adopted in 355/556 (63.8%). Pre- and postoperative laser epilation therapy was done in only 294/556 patients (52.8%). The median healing time was 5.8 weeks (range 3.5-12.2). Postoperative wound infections (Clavien 2) occurred in 22/556 (3.9%). At long-term follow up (5 years), 43/556 (7.7%) recurrences were observed, of which 37/556 (6.6.%) were re-operated using PEPSIT. Thirty-three out of 43 (76.7%) recurrences didn't perform pre- and postoperative laser epilation.

Conclusion: PEPSiT is the new standard of care for surgical treatment of PSD in children and adolescents. It is technically easy, time saving, with fast and painless postoperative course. Recurrence rate was just 7.7% in our series. Our data showed that the recurrence rate was significantly higher in patients not performing laser epilation. Standardization of technique, laser epilation and appropriate wound care are the key factors for the long-term success of PEPSiT.

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Miscellaneous

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ROLE OF ROBOTIC SIMULATION IN PEDIATRIC SURGERY: A FRENCH NATIONAL SURVEY AND SCOPING REVIEW.

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Purpose: Multiplicity of indications, often involving rare diseases, and variable exposure to robotic surgery make simulation essential for mastering pediatric robotic surgery. This study provides an overview of the current state of robotic simulation in pediatrics by reporting a French national survey and review of literature.

Methods: All French pediatric robotic surgery teams took part in an online survey on their activity, training and simulation in robotic surgery. A scope review based on the PRISMA-ScR procedure was carried out. Search terms used: robotic surgery, pediatric, simulation, training, surgical education, cognitive, metacognition, robotic set up, virtual reality; Boolean operators AND/OR. Peer-reviewed articles in English, Italian and French published between 2000-2023 were included. A qualitative analysis was performed.

Results: The national survey recruited 13 centers, two had exclusive access to a robotic device while the others shared access with adult teams. The robot was available 4.2 days/month on average, with a mean of interventions of 37.5 per year/center. Overall, 80% of participants trained by the industrial brand would prefer a dedicated pediatric simulation. 72% of surgeons followed other simulation programs apart: 94% concluded for simulation's essential role in daily practice; 86% felt confident to perform robotic interventions; 79% found helpful in managing adverse events. Assessment after each simulation was planned in 50% of cases, only 3 participants held evaluation specific tools. Five articles out of 221 were selected, showing the role of simulation in shortening the learning curve, trocar placement, team training, or providing useful key features to promote simulation program. No published article concerning the non-procedural pediatric robotic surgery simulation was found.

Conclusions: This study reports the first nationwide survey with literature review, highlighting the need for specific procedural and non-procedural simulation in pediatric robotic surgery. The development of these simulations should include evaluations at high Kirkpatrick levels.

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Robotics and Innovations

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RISK FACTORS FOR RECURRENT URETEROPELVIC JUNCTION OBSTRUCTION AFTER PEDIATRIC LAPAROSCOPIC PYELOPLASTY: A SYSTEMATIC REVIEW AND META-ANALYSIS.

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Introduction: Recurrent ureteropelvic junction obstruction after pediatric laparoscopic pyeloplasty is a serious complication for which treatment remains challenging. To avoid this unfortunate evolution, some authors have attempted to determine the predictors of failure after laparoscopic pyeloplasty. The aim of this study was to systematically review the literature to summarize and assess the potential risk factors for ureteropelvic junction obstruction recurrence after surgery.

Materials and Methods: A systematic literature searches of the EMBASE, MEDLINE and COCHRANE libraries was conducted to find studies on laparoscopic pyeloplasty in children, published between 2012 and 2023. Studies that are interested in the predictors of surgical treatment failure were included, and the various risk factors were noted. These factors were divided into pre-, per and post-operative factors. Statistical analysis was performed with SPSS 20.0 and p-value was fixed to 0,05.

Results: We identified 11 publications, that strictly met our eligibility criteria. The total number of patients having had laparoscopic pyeloplasty was 3992, in whome 227 patients (5,7%) had a failed one. Mean age at operation and the mean follow-up time after pyeloplasty was 31.2 (+/- 28.5) and 42 (+/- 37.7) months. Pre-operative predictors of failure were: age <6 months (p<0,01), presence of preoperative diversion (p=0,02), preoperative pyelography (p=0,044) and decreased cortex/pelvis ratio in renal ultrasound (p=0,034). Per-operative predictors of failure were: decreased parenchymal thickness (p=0,02) and the lack of stenting (p<0,01). Among the post-operative factors studied, presence of early and late complications (p < 0.001 and p=0,005 respectively) after pyeloplasty was significantly related to recurrence.

Conclusion: Studies on predictors of failure in pediatric laparoscopic pyeloplasty are lacking. The need for multi-center studies is required to determine all the risk factors for recurrent ureteropelvic junction obstruction.

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Urology

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SHOULD WE PERFORM INGUINAL OR LAPAROSCOPIC EXPLORATION FOR NONPALPABLE TESTES ? CLINICAL RESULTS AND LITERATURE REVIEW.

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Introduction: Nonpalpable testes presents 20% of undescended testes. Its management remains controversial since the best surgical approach has not been determined yet. The aim of this study was to evaluate the outcomes of laparoscopic and inguinal explorations to determine the optimal surgical approach for impalpable testis.

Materials and Methods: To meet our goal, literature review was performed, analyzing treatment modalities for nonpalpable testes. Additionally, we reviewed all the patients operated for nonpalpable testes in our department between January 2015 and December 2022 and evaluated the outcomes of operative interventions. Statistical analysis was performed with SPSS 20.

Results: Ninety-five patients were included with a total of 102 nonpalpable testes. High and low abdominal testes were detected in 19 (18.6%) and 32 (31.3%) cases and treated by two-stage and one-stage Fowler Stephens respectively. Eight testes were vanishing. For the remaining 43 testes(42.2%), 31 had both vas deferens and spermatic vessels entering a closed internal ring and 12 were peeping. Inguinal exploration was performed in all of them. Orchidopexy in dartos was performed in the 12 peeping testes and in 13 ectopic testes. Testicular nubbin was found in inguinal position in 13 patients and in scrotal position in 5 and orchidectomy was performed in all cases. Literature suggests a primary exploration by inguinal approach with possibility of trans-inguinal laparoscopic exploration if the testis is not extra-abdominal.

Conclusions: Regarding our results and those of the literature we recommend an inguinal incision, possibly completed by laparoscopy which appears an effective method of treatment of nonpalpable testes.

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Urology

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PEDIATRIC MECKEL'S DIVERTICULUM: WHAT IS THE BEST SURGICAL APPROACH ?

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Introduction: Meckel's diverticulum is one of the most common congenital malformation of gastrointestinal tract in children, occuring in 2% of general population. Symptomatic Meckel's diverticulum requires surgery, however, there is no consensus as to the ideal management and the best approach. The aim of our study was to determine the best surgical approach to treat this malformation.

Patients and Methods: A retrospective study of all patients operated for Meckel's diverticulum between January 2017 and July 2023 was conducted. Clinical data including demographic criteria, clinical manifestations, surgical methods, histopathological characteristics and postoperative outcomes were analyzed and the surgical approach was evaluated.

Results: Twenty-seven patients, including 22 males and 5 females, were operated on for Meckel's diverticulum. Mean age was 4,7 years [4 months to 13 years]. The Meckel's diverticulum was an incidental finding at laparotomy for acute appendicitis in 8 cases (30 %). The remaining patients (70%) were symptomatic and presented with various clinical features :12 patients (44%) presented with bleeding per rectum,4 patients (15%) with intussusception requiring surgical reduction,2 patients (7.5%) demonstrated symptoms of peritonitis and 1 patient diagnosed as intestinal obstruction. One patient had laparoscopic wedge resection of the diverticulum and all other patients had segmental resection-anastomosis. Among those latter,10 (37%) had laparoscopy assisted mini-laparotomy with extra-corporeal anastomosis and 16 patients (55.5%) had laparotomy. Four patients had macroscopically-visible diseased mucosa. The aftermath of the surgery was simple if all case. Histology showed heterotopic gastric tissues with diverticulitis in one case. Four patients (15%) had heterotopic gastric tissues and 6 (22.2%) had heterotopic pancreatic tissues.

Conclusion: Ideal management of Meckel's diverticulum remains controversial. We think that segmental resection-anastomosis with laparoscopy assisted mini-laparotomy and extra-corporeal anastomosis is a good management plan, minimally invasive yet safe, since it gives the possibility of palpation to make sure that all thickened tissues had been removed.

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Gastrointestinal

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THORACOSPIC RESECTION OF A FORGUT DUPLICATION ASSOCIATED TO ESOPHAGEAL ATRESIA.

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Introduction: Foregut duplications might occur anywhere along the embryological foregut-derived structures. Most lesions are cystic and found in the thorax or intraabdominal. Their association with esophageal atresia is extremely rare. We present a case of esophageal duplication associated to an esophageal atresia and treated via thoracoscopy while explaining the surgical steps.

Case report: We present the case of a 2-year-old male patient initially treated at birth for a type I esophageal atresia. He had gastrostomy and esophagostomy. The chest x-ray showed right apical mediastinal opacity. The patient underwent a CT scan at the age of seven days showing on the right side a paratracheal well-circumscribed mediastinal cystic mass straddling the anterior and middle mediastinum measuring 34 x 20 mm. The complete removal of the cyst was made through thoracoscopy which was videotaped step by step. Histopathological findings eventually pointed to a foregut duplication cyst.

Conclusion: The association of esophageal atresia and Foregut duplication is rare. It is preferable to treat both anomalies in a one stage neonatal surgery whenever possible. Thoracoscopy is a safe and effective method to treat foregut duplications with good cosmetic results.

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Thorax

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ROBOT-ASSISTED PEDIATRIC UROLOGY: THE UNIQUE EXPERIENCE OF ONE CENTER IN UKRAINE.

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The use of robotic technologies in pediatric urology has become quite widespread in the world since the early 2000s. However, the rather high cost of equipment and consumables stood in the way of the spread of robotic technology among developing countries (especially in the public health care sector).

The only robotic system (DaVinci S) that exists in a public medical institution appeared with the help of philanthropists and a group of enthusiasts in the First Medical Union of Lviv (the largest medical institution in the western part of Ukraine) in 2021. Since then, a total of 80 surgical interventions have been performed, of which 23 were performed on children with urological diseases. The age of the smallest patient is 9 months, weight - 8 kg. Among the diseases qualified for operations were: hydronephrosis (pyeloplasty and nephrectomy), obstructive and refluxing megaureter (heminephrectomy, ureter reimplantation), kidney cysts, etc. No intra- and postoperative complications were noted, excellent cosmetic results. Conclusion: robot-assisted pediatric urology can be actively developed in the public sector of developing countries, even in the face of an ongoing war.

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Robotics and Innovations

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A VALUABLE AID IN MINIMALLY INVASIVE REPAIR OF PECTUS EXCAVATUM: CRANE TECHNIQUE.

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Introduction: the gold standard for the treatment of pectus excavatum is the Nuss procedure (MIRPE). The most hazardous step during surgery is the passage of the bar through the thorax, under the sternum and above the pericardium. During this step major complications can occur. We modified MIRPE technique adopting sternal elevation with the crane technique to improve vision during the passage of the bar, therefore decreasing the chances of complications. The aim of the study is to present our preliminary results with this adjunct.

Methods: we place two stainless-steel sutures in the point of maximum depression of the sternum, together with Thompson^{R} retractor, set as a crane system. After introducing the trocar and the scope in the right thorax, the sternum is elevated slowly under vision to widen the space between sternum and pericardium. The stainless-steel sutures are removed at the end of the procedure.

Results: 19 patients underwent modified MIRPE. Mean Haller Index was 3.9 (SD ± 1.0). Every patient positioned 1 bar; mean operation time was 118.0 minutes (SD ± 28.0 minutes). There was only 2 reported complication, a small pericardial tear, with only minimum bleeding not requiring further intervention, and a transient bradycardia, with self-resolution. At post-operative follow-up no evident scaring was recorded.

Conclusions: elevation of the sternum is a useful assistance to the MIRPE technique, increasing the visibility, therefore the safety, in the passage of bar. We believe that this technique is particularly useful in cases of severe sternal depression.

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PEDIATRIC ROBOTIC SURGERY: A MULTICENTRIC STUDY ON THE IMPACT OF PROCEDURE-RELATED STRESS.

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Introduction: Pediatric robotic surgery is today a reality. The ergonomy of the surgeon is among the frequently cited benefits of this approach. The purpose of this study is to evaluate the impact of the procedure-related stress on the different characters involved in robotics.

Materials And Methods: We conducted a prospective study from March to August 2023, involving 3 different Pediatric Surgery Centers, where a pediatric robotic program was already established and well underway. A validated questionnaire (State and Trait Anxiety Inventory) was administered to surgeons, anesthesiologists and nurses before and after major surgery performed during the study period using traditional mini-invasive approach (MIS) and robotic approach (RA). In addition, the continuous heart rate of the main surgeon was measured using disposable devices.

Results: Our population consisted of 29 surgeons, 3 anesthesiologists and 4 nurses. We obtained 156 questionnaires, 35% before and after MIS and 65% before and after RA. We calculated a mean state anxiety before and after the MIS of respectively 37 (standard deviation 9) and 35 (standard deviation 6). Before and after RA the mean state anxiety was 36 (st dev 8) and 35 (st dev 10) respectively. We highlighted a statistical difference between before and after MIS, which wasn't between before and after RA. The continuous heart rate showed a mean heart rate superior for MIS versus RA procedures in 3 out of 4 surgeons (A: 92 vs 79, B: 93 vs 72, C: 91 vs 87, D: 63 vs 65).

Conclusions: It can be concluded that traditional mini-invasive surgery produces a higher psychophysical stress and influences the anxiety level of the surgeon stronger than the robotic approach. Stress measurement seems to be an adequate method to highlight benefits of the robotic approach. These are preliminary data and must be consolidated and extended to a larger scale.

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Robotics and Innovations

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IS THE LAPAROSCOPY CONTRIBUTING TO THE DIAGNOSIS OF PERITONEAL TUBERCULOSIS?

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Aim of the study: Peritoneal tuberculosis is one of the most challenging forms of extrapulmonary tuberculosis to diagnose. The lack of specificity of symptomatology, and biological and radiological exams makes its diagnosis very difficult, especially in children. Our study aimed to evaluate the role of laparoscopy in the diagnosis of peritoneal tuberculosis.

Materials and Methods: A retrospective study of all patients who underwent surgery for peritoneal tuberculosis between January 2017 and July 2023 was conducted. Epidemiological Data, clinical symptoms, and physical examination findings were assessed.

Results: Eight patients were included. The mean age was 7 years and the sex ratio was 0,5. The main symptom was abdominal pain found in Seven cases. Fever was found in half of the patients. None of the patients had pulmonary tuberculosis. The mean duration from symptoms to diagnosis was 18,8 days. Radiological assessment showed ascites (5 cases), mesenteric lymph nodes (3 cases), and hepatomegaly (2 cases). In all cases, a laparoscopy was performed and allowed to establish the diagnosis. It showed that whitish peritoneal granulations were the most common finding (6 cases), followed by adhesions, seen in three cases. Peritoneal biopsy and histopathological exam confirmed the diagnosis in all cases. All patients had an antituberculous therapy with good evolution.

Conclusion: Peritoneal tuberculosis is rare in children. In case of suspicion, laparoscopy with peritoneal biopsy is the best means for the diagnosis of peritoneal tuberculosis.

Categories

Gastrointestinal

P100

LAPAROSCOPIC TREATMENT OF A HUGE CYSTIC LYMPHANGIOMA.

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Introduction: Lymphangiomas are more common in children. They mostly present as a sporadic single lesion and typically occur in the head and neck. The intra-abdominal location is extremely rare.

Case Report: A 5-year-old girl presented with paroxysmal abdominal pain, vomiting, and constipation. She had no previous surgical history or significant family history. The physical examination was normal. Ultrasound examination revealed an abdominal multiloculated septated cystic mass. A computed tomography scan showed a 125 *35 * 71mm abdominopelvic cystic mass. It was multilocular with polycyclic edges molding the intestinal loops. The patient underwent a laparoscopy-assisted procedure. Exploration showed a yellowish butterfly-shaped multilocular cystic mass that originated from the small bowel mesentery with small bowel dilatation. It was carefully externalized from the umbilical port. An en bloc resection with 2-cm security margins and an end-to-end anastomosis were performed. Histopathological examination of the resected mass concluded to be a cystic lymphangioma.

Conclusion: Laparoscopy is now the gold standard for the treatment of cystic intra-abdominal masses. It allows a thorough examination of the intestines and a secure extracorporeal anastomosis.

Categories

Gastrointestinal

P101

TWO TRACARS LAPAROSCOPIC MANAGEMENT OF OVARIAN SEROUS CYSTADENOMA OF THE OVARY IN A CHILD: TIPS AND TRICKS.

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Introduction: Ovarian serous cystadenoma is one of the most common histologic subtypes of childhood ovarian germ cell tumors. Their surgical approach and appropriate management in this age group are still controversial.We report a case of a 6-year-old girl operated for ovarian serous cystadenoma via a laparoscopic approach using a novel technique to highlight the technical particularities.

Case report: An otherwise healthy 6-year-old girl presented to our department for a pelvic mass discovered by the mother. The abdominal examination found a median pelvic mass, lateralized to the left of about 10 cm. This mass was mobile and painless on palpation. Abdominal ultrasound with a complementary scan was performed showing an 11-cm-in-diameter cystic mass of the left ovary, suggestive of serous cystadenoma of the ovary. Tumor markers were performed and were negative. The patient was operated laparoscopically using two trocars. Insertion of the optics visualized a cyst of the left ovary of 13 cm in diameter. A cyst aspiration was made transcutaneously, then the cyst was externalized through the umbilical orifice thus completing its excision, leaving in place a laminated ovary. Currently, the follow-up is 8 months, the patient is fine and the pathological examination confirmed the diagnosis of serous cystadenoma.

Conclusion: The management of benign cystic tumors of the ovary in girls is controversial. we propose a transcutaneous suction followed by an externalization and a resection by the orifice of the umbilical trocar.

Categories

Oncology

SO102

DIAGNOSIS OF PRIMARY SPONTANEOUS PNEUMOTHORAX IN ADOLESCENTS: IS CT SCAN BETTER THAN CHEST X-RAY?

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Introduction: Primary spontaneous pneumothorax (PSP) in 85% occurs in healthy adolescents and young adults. Adolescents are usually associated to adult patients, the best management strategy in pediatric population is still controversial. In this study we want to discuss the role of imaging in preoperative evaluation.

Material And Methods: During last 10 years, 24 patients (F:M=7:17) underwent 26 thoracoscopic lung apicectomies associated with mechanical pleurodesis (9 right sided; 17 left sided). Mean age at surgery: 16.5y. Mean BMI: 18.7.

Results: Surgical indications were recurrent PSP (58%), persistent air leak after conservative management or chest tube placement (25%), first contralateral PSP (17%). Preoperative imaging studies consisted in chest X-ray and thoracic CT-scan in 12/24 patients, chest X-ray alone in 12/24. Bullae had been detectable on chest X-ray in 14/24 cases (58%). CT-scan shows bilateral bullae in 4/12 cases (33%) and no bullae in 4/12 (33%). Dysplastic lung apex with blebs/bullae was intraoperatively found in all procedures (26/26) and histology confirmed a “subpleural bullous emphysema”. We had no intra nor postoperative complications, no conversions to open surgery. At a mean follow up of 4,6y: recurrence rate 15% (4/26 procedures) and no contralateral PSP.

Conclusions: Some considerations: even after a negative CT-scan, symptomatic patients underwent surgery andapical bullae were intraoperatively found; two patients with bilateral bullae at CT-scan, underwent surgery only on the symptomatic side and, to date, no contralateral PSP appeared; chest X-ray was able to detect bullae in most patients. So, we wonder: does CT-scan modify our surgical approach? Can we reduce the radiological exposition (and correlated potential long-term risks) to these patients reducing also healthcare costs? On our experience and opinion, the routine use of CT-scan is not justified and surgical paediatric guidelines are needed for PSP management to avoid the risk of associating adolescent patients to adult ones.

Categories

Thorax

LO103

MAGNETIC COMPRESSION ANASTOMOSIS IN LONG GAP ESOPHAGEAL ATRESIA: IS THAT A REAL ADVANTAGE? FIRST HISOLOGIC RESULTS IN SEVERE STENOSIS.

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Background: Magnetic compression anastomosis (MCA) aims to preserve native esophagus in patients presenting LGEA, making easier anastomosis. Nevertheless, it is known that almost all patients developed severe strictures.

Material And Methods: Two 2.5y old girls, undergone MCA in another institution, came at our attention because of severe anastomotic strictures. At birth they both presented type A EA undergone gastrostomy during 2nd day of life and MCA at 2 months. Severe strictures were unresponsive to multiple endoscopic dilations (average 30). Indwelling nasogastric tube and feeding supplementation by gastrostomy were needed. Re-do thoracoscopic anastomosis was scheduled.

Results: Thoracoscopy showed: wide area of tenacious adhesions involving thickened parietal pleura, great vessels, trachea, esophagus; upper and lower esophagus were not aligned; esophagus fibrosis extended superiorly and inferiorly the anastomosis, affecting a 5-6cm tract; thoracic duct was not detectable; vagus nerve had an anomalous course and was interrupted in previous anastomosis. Dissection was demanding, resection extended over the anastomotic tract because of fibrosis (histology: full thickness esophageal fibrosis), wide “pouches” mobilization was needed, re-do anastomosis was under tension. Intubation and curarization were maintained 7days. One patient developed a light anastomotic leak (conservative treatment). Within 6 months complete oral feeding was achieved, gastrostomies closed, successful endoscopic dilations performed.

Conclusions: MCA is an interesting idea for a minimally invasive correction of a severe congenital malformation but, according to our experience and literature, we highlight: pouches fusion is not under control (not aligned anastomosis); massive tissue compression (poor vascularization causing extended esophageal fibrosis); blind anastomosis (adjacent structures - nerves, thoracic duct- can be compromised); healing process create tissue necrosis and massive local inflammation involving surrounding tissue (tenacious adhesions). In conclusion, to avoid patient a complicated surgery in newborn period, we risk to postpone the problem, increasing future technical difficulties and prolonging patient’s discomfort, is that a real advantage?

Categories

Thorax

P104

SURGICAL TREATMENT OF SPONTANEOUS PNEUMOTHORAX IN CHILDREN AND ADOLESCENTS.

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Introduction: Spontaneous pneumothorax during pulmonary bullous emphysema in children is an urgent situation that requires emergency surgical intervention. The question of surgical treatment tactics of this pathology remains relevant.

Purpose: to analyse the clinic experience in the treatment of children with spontaneous pneumothorax

Materials and Methods: In the thoracic surgery department of Moscow Hospital for Children in the period from 2017 to 2022 82 children with spontaneous pneumothorax during pulmonary bullous emphysema were treated. The vast majority were male - 63 children (77%). The average age was 15 years. In case of tension pneumothorax, pleural cavity drainage was performed. In the absence of radiologic and clinical signs of intrathoracic tension syndrome, pleural cavity drainage was refrained. Computed tomography (CT) of lungs is a mandatory method of examination, which in 88 % (72 patients) allowed to diagnose bullous changes in lungs. It should be noted that in 19 % (15 patients) of cases CT signs of bilateral pulmonary bullous lesions were diagnosed.

Results: All surgical interventions were performed by thoracoscopic access. Bullae resection by endoscopic stapling device was performed in 89% (73 patients) of cases. Pleural drainage was removed in average on the 6-7th day after surgery. There were no intraoperative complications. The diagnosis was confirmed morphologically in all patients. Disease recurrence occurred in 6 (7.3%) cases. At repeated interventions, bullae resection supplemented with pleural cavity obliteration was performed. In 3 (50%) cases pleurodesis of the parietal pleura in the projection of the upper lobe of the lung was performed using argon-plasma coagulation, in 2 (33.3%) cases pleurectomy was applied and in 1 (16.7%) case the method of drug pleurodesis was used.

Conclusion: Bullae resection is an effective method of treating pulmonary bullous emphysema in children. Obliteration of the pleural cavity can be applied in case of disease recurrence.

Categories

Thorax

SO105

THORACOSCOPIC ACCESS IN THE TREATMENT OF SEVERE ARRHYTHMIAS IN CHILDREN.

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Introduction: Today surgical interventions performed using thoracoscopic access are a priority in pediatric surgery. Thoracoscopy provides shorter duration of surgical intervention, lower risk of blood loss, reduced severity of postoperative pain, and better cosmetic effect.

Purpose: To show the advantages of thoracoscopic access of performed surgical interventions in children, such as thoracoscopic Left Cardiac Sympathetic Denervation (LCSD) and Epicardial Lead Implantation (ELI).

Materials and Methods: In the period from 2016 to 2022, 55 patients were included in the study. All patients were divided into 2 groups depending on the type of performed surgical intervention for arrhythmias: thoracoscopic Left Cardiac Sympathetic Denervation (LCSD) and thoracoscopic Epicardial Lead Implantation (ELI). LCSD was performed in 49 patients (89.1%). Among them, patients with the diagnosis of Catecholaminergic Polymorphic Ventricular Tachycardia (CPVT) prevailed - 29 (52.7%), there were also patients with the diagnosis of Prolonged QT Interval Syndrome (LQTS) - 20 (36.4%), among them 8 (14.5%) patients suffered from Jervell and Lange Nielsen Syndrome (JLNS). The average age of patients in this group was 10.3 yr. (aged from 2 to 17 years). Male patients prevailed - 29 (52.7%). The second group included 6 patients who underwent thoracoscopic ELI. Monopolar screw-in leads was performed in 4 (66.7%) patients, bipolar hand-tied knots - in 2 (33.3%). Among the methods of electrode fixation the "screw-in" method prevailed - 4 (66.7%), electrode implantation by the "suturing" method was performed - 2 (33.3%).

Results: There were no complications in both groups. During 2 days, 2 (33.3%) patients had air discharge through pleural drainage associated with residual air after surgery and stopped on the 2nd postoperative day. There were no conversions to thoracotomy in both groups.

Conclusion: In conclusion, surgical interventions performed using thoracoscopic access are a safe, effective and minimally traumatic method of surgical correction of severe arrhythmias in children.

Categories

Thorax

SO106

ENHANCED RECOVERY AFTER SURGERY (ERAS) FOR LAPAROSCOPIC RESECTION OF GASTRO-INTESTINAL DUPLICATIONS: A MONOCENTRIC COMPARATIVE STUDY.

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Introduction: Although minimally-invasive techniques are widely used for gastro-intestinal duplications, no study has reported the implementation of an enhanced recovery after surgery (ERAS) protocol or outpatient surgery protocol. The aim of this study was to evaluate the effects of implementing an ERAS protocol for laparoscopic resection of gastro-intestinal duplications, in order to assess the feasibility of outpatient surgery.

Methods: We conducted a monocentric retrospective study of children that underwent laparoscopy for a gastrointestinal duplication (March 2005-March 2023). In 2018, we implemented an ERAS protocol, with the objective of performing outpatient procedures. Two periods were compared: before ERAS protocol (A, 2005-2017) and after (B, 2018-2023).

Results: A total of 53 patients (28 period A, 25 period B) underwent laparoscopy for a gastrointestinal duplication. Both groups were similar in terms of demographics or comorbidity. The proportion of laparoscopic enucleation increased during the second period (64% to 92%, p=0.02), whereas the proportion of intestinal resection and anastomosis decreased (36% vs 8%, p=0.02). Length of stay decreased after ERAS implementation (3 days vs 1 day, p=0.01), resulting in outpatient surgery in 32% in period B. After ERAS implementation, the use of opioids decreased (82% vs 44%, p=0.005), and post-operative feeds were introduced earlier (2 days vs 0 days, p=0.0001). In group B, no administration of morphine was recorded, whereas it was necessary in 11% in group A (p=0.24). There was no difference in postoperative complications (p=0.66), with only 1 patient requiring reintervention for intestinal obstruction on postoperative day 3. No readmission was necessary.

Conclusion: Surgery for laparoscopic resection of gastro-intestinal duplications seems safe and feasible as an outpatient basis after implementation of an ERAS protocol, without increasing the risk of complications or readmission. Moreover, the implementation of the ERAS protocol was associated with a significant decrease in the use of opioids.

Categories

Gastrointestinal

SO107

ENDOSCOPIC VACUUM THERAPY FOR ESOPHAGEAL PERFORATIONS – A NON-SURGICAL ALTERNATIVE FOR YOUR WORST NIGHTMARE.

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Introduction: Endoscopic Vacuum Therapy (EVAC) for pediatric esophageal perforations was first reported in 2018, but centers seldom consider this non-surgical treatment. The aim was to: 1)report our experience with EVAC; 2)assess the evidence regarding this innovative technique.

Methods: 1) We retrospectively included children who underwent EVAC for esophageal perforation in our center (May 2021-December 2023). EVAC consisted in endoscopic placement of a polyurethane sponge connected by a suction tube to a wound drainage system (Figure). Data regarding demographics, medical history, EVAC placement technique, and outcomes were reported. Success was defined as leakage resolution, avoiding surgical reintervention. 2) Using a defined search strategy, a systematic review was conducted to describe the technique and outcome of EVAC in children (2018-2024).

Results: 1) Four children underwent EVAC for esophageal perforation (median age:2.5 years). Causes of perforation included: post-operative leakage (n=2), endoscopic dilatation (n=1), foreign body ingestion (n=1). All patients had a history of previous esophageal surgery, with a median number of 2 surgeries (range:1-5). Two patients had a G-tube which was used to position the EVAC. The EVAC was placed with a delay of 10 days after perforation, and withdrawn after a median of 5 days. Endoscopic opacification showed complete healing in 75%. In one case, a small fistula persisted, spontaneously closing after 6 months. None of the patients required surgical reintervention for fistula closure. 2) Systematic review: In 6 articles, EVAC for esophageal perforation was reported in 29 cases, with a median age of 24 months (range:0.5-136). In 50%, the perforation was post-surgical. Overall success rate was 79% (range=0-100%).

Conclusion: EVAC is a promising treatment for esophageal perforation, avoiding surgical reintervention since its implementation. It seems efficient in healing most cases of perforations, regardless of the cause; and is particularly useful in children with a history of multiple surgeries.

Categories

Robotics and Innovations

SO108

SCARLESS SIMULTANEOUS LAPAROSCOPIC TREATMENT OF COMBINED HERNIAS OF THE ABDOMINAL WALL IN CHILDREN.

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Purpose: To investigate the effectiveness of laparoscopic management of combined defects of the abdominal wall in children.

Method: A retrospective study of laparoscopic repair of combined defects of the abdominal wall was performed in 13 children (10 males and 3 females), using a single-port technique in 10 cases and a two-port technique in 3 others, the second port was placed in the left lateral side. Inguinal hernias were closed by a double percutaneous internal ring suturing technique and epigastric hernias by the same percutaneous suturing approach. The average age of patients was 1.9 ± 0.4 years. Ten patients (76.92%) had a bilateral inguinal hernia and an umbilical hernia. Three children (23.08%) had four combined defects: epigastric hernia, umbilical hernia, and bilateral inguinal hernia. Three patients (23.08%) were intraoperatively diagnosed with a contralateral inguinal defect (metachronous inguinal hernia).

Results: The duration of the surgery varied from 20 min to 55 min in patients with an additional epigastric hernia, the mean operative duration was 30 ± 3.5 minutes. All patients received a multimodal anesthetic approach and were treated as day cases with no intra or post-operative complications. At follow up there were no recurrent hernias and the scar in the left lateral area is almost imperceptible, the umbilicus looks like a real embryonic scar.

Conclusion: The advantages of simultaneous laparoscopic management of combined defects of the abdominal wall in children are excellent visual control, valuation of the contralateral inguinal ring and eliminating its defect when detected, reducing the time of surgical intervention, and good economic results. The proposed laparoscopic technique can be the method of choice to diagnose and manage combined abdominal wall hernias in children as a day-case procedure producing an ideal cosmetic result without complications.

Categories

Gastrointestinal

LO109

ENHANCED RECOVERY AFTER CHOLEDOCHAL CYST EXCISION IN CHILDREN: A QUALITY IMPROVEMENT INITIATIVE.

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Laparoscopic cyst excision with Roux-en-Y hepaticojejunostomy (RYHJ) for choledochal cyst (CC) is a safe and effective technique in children. In our center, an enhanced recovery after surgery (ERAS) protocol was implemented for CC excision in 2021. This study aimed to compare the outcomes of children operated on before and after implementation of this ERAS protocol.

All patients that underwent laparoscopic CC excision with RYHJ between 2010-2023 in our center were included. Data regarding demographics, surgery, post-operative course was collected retrospectively and compared for 3 time periods (2010–2013 [Group 1], 2014-2020 [Group 2], 2021-2023 [Group 3 (ERAS)]) corresponding to modified management protocol incorporating ERAS principles.This included a 3 mm-laparoscopic approach, multimodal anesthesia, no drainage, and early post-operative feeding. Patients were discharged when tolerating feeds and simple analgesic requirements only. Data are expressed as median (interquartile range-IQR). Comparisons were performed using contingency tables and Kruskal-Wallis when appropriate.

Twenty-seven laparoscopic CC excision with RYHJ were performed (Group 1, n=10; Group 2, n=12; Group 3, n=5). There was no difference in demographics or surgical data between groups. Across the 3 time periods, median length of stay (LOS) decreased significantly (10.5, 6, 3 days respectively, p=0.0005). There was no significant difference in complication rate (p=0.953) and 30-day readmission rate (p=0.85). Both duration of gastric tube drainage (4, 1, 0 days respectively, p=0.0005) and peritoneal drainage (8, 5, 0 days successively, p=0,0002) decreased over time. Delay to return of bowel function progressively improved (4.5, 3, 2 days respectively, p=0.0038), as well as delay to first feeds (5, 2, 1 days respectively, successively, p=0.006). No patient required morphine in group 3 (p=0.01).

Implementing an ERAS protocol for laparoscopic CC excision with RYHJ in children is safe and feasible, and it results in enhanced recovery and reduced LOS, without increasing the rate of complications or readmission.

Categories

Gastrointestinal

SO110

SURGICAL TREATMENT OF CHILDREN WITH CROHN'S DISEASE: LAPAROTOMY VERSUS LAPAROSCOPY?

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Purpose: The objective of this study was to compare the effectiveness of laparotomy and laparoscopic approaches in children with Crohn's disease who require surgery.

Methods: A retrospective observational cohort study was conducted between 2011-and 2021; enrolling CD patients with planned surgery (e.g. ileocecal segment resection, small bowel resection, hemicolectomy, or total colectomy). Emergency surgeries and patients above 18 years were excluded. Laparoscopic (or assisted) (LA) and laparotomy (LT) groups were formed. In the LA group, laparoscopic sceletisation was performed and the bowel resection/anastomosis was made under mini-laparotomy. The follow-up period was at least 1 year. The study observed complications according to Clavien-Dindo classification (CDC), length of hospital (LOS) and intensive care unit stay (LICUS), and operative time (OT). For statistical analysis, the Shapiro-Wilk normality and Mann-Whitney U tests were used.

Results: During the study period, altogether 22 CDs were operated. LA group: in 8 patients (ileocecal segment resection 6, hemicolectomy 1, total colectomy 1), 2 major complications (CDC grade III) were observed. The median OT 165 minutes [146.25;187.5] and median LOS was 6.5 days [6;8]. LT group: in 14 patients (ileocecal segment resection 10, small bowel resection 1, hemicolectomy 3); also had 2 major complications (CDC grade III). The median OT 120 minutes [98.75;150] and the median LOS 13 was days [10.75;17.25]. The length of the OT was significantly shorter in LT group (p=0.016), however, the LOS was significantly shorter in the LA group (p=0.004). There was no difference between the two groups in terms of the LICUS (p=0.127).

Conclusions: Laparoscopic-assisted surgery for children with CD is a safe procedure, which results in a shorter hospital stay and has the same complication rate as open surgery.

Categories

Gastrointestinal

SO111

PEDIATRIC ENDOSCOPIC PILONIDAL SINUS TREATMENT: LOCAL VS GENERAL ANAESTHESIA?

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Purpose: Our aim was to investigate the feasibility of performing Pediatric Endoscopic Pilonidal Sinus Treatment (PEPSiT) under local anaesthesia (LA) and to determine which type of anaesthesia requires the shortest total operative room (OR) time.

Methods: An observational study was performed between 01.06.2019. and 30.11.2023, which included children with pilonidal disease treated via PEPSiT. Groups were formed based on the type of anaesthesia: LA, endotracheal narcosis (ETN) and spinal anaesthesia (SA). ETN and SA were considered as general anesthesia (GA). The study analyzed the duration of GA, surgery, and OR time. For statistical analysis, the Shapiro-Wilk normality and Mann-Whitney U tests were used.

Results: Altogether, 73 PEPSiT surgeries were analysed (ETN: 51, SA: 13, LA: 9). The duration of PEPSiT under LA was shorter (30 min [30;35]) than under GA (80 min [70;95]) ($p<0.0001$). There was no difference in OR time between ETN (85 min [70;100]) and SA (75 min [67.5;90]) ($p=0.284$). The duration of the surgery was longer in LA (30 min [30;35]) than in GA patients (20 min [15;30]) ($p=0.014$). There was no difference in the duration of surgery between ETN (25 min [15;35]) and SA (20 min [15;25]) ($p=0.159$).

Conclusions: PEPSiT can be performed under local anaesthesia with significantly shorter operative room time but a longer duration of surgery. If the patient is compliant, local anaesthesia may be the preferred option due to its cost-effectiveness and efficiency. Additionally, the potential complications associated with general anaesthesia can be avoided.

Categories

Robotics and Innovations

P112

RUPTURED PULMONARY HYDATID CYSTS TREATED BY THORACOSCOPY : TIPS AND TRICKS.

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Introduction: Pulmonary hydatid cyst is an endemic infection in our country. Despite its invasive nature, our standard surgical procedure is thoracotomy. Actually, we are using mini invasive surgery in some selected cases to reduce the risk of open technique.The aim was to determine the efficacy of thoracoscopy in this condition.

Patients and Methods: We retrospectively reviewed our new practice of thoracoscopy to treat ruptured hydatid cysts less than five cm. Five patients had minimally invasive surgery during this year.

Results: The average was 9.3 years. Pulmonary cyst was located at the lower lobes of the right lung (2) and the left lung (3). Diagnosis of pulmonary echinococcosis was established by chest X ray in all cases and the mean diameter of the cyst was 3.5 cm. Patients were operated by thoracoscopy using three 5 mm ports. The average duration of the procedure was 100 minutes. During surgery, we proceeded to the extraction of the hydatid membrane with closure of bronchial fistulas via a capitonnage. Postoperatively, one patient had experienced important subcutaneous emphysema. The pain control was ensured by a level one analgesic. The mean duration of the drainage was three days. The mean duration of stay was five days. All our patients had received a pre and post operative medical treatment based on Albendazole. Our patients had a follow-up of at least 5 months and no late complication was noted.

Conclusion: Thoracotomy is the routine technique in the treatment of hydatid pulmonary cysts whereas thoracoscopy can be used in selected patients with ruptured cyst. The risk of spillage doesn't exist and the treatment consists of the extraction of the hydatic membrane and closure of bronchial fistule.

Categories

Thorax

P113

WHAT IS THE BEST LAPAROSCOPIC TREATMENT MODALITY FOR NON-PALPABLE TESTES? A LITERATURE REVIEW AND CLINICAL RESULTS.

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Background: The undescended testis represents one of the most common disorders of childhood. Nearly 20% of the non-scrotal testis is not palpable and necessitate a laparoscopic management. However, the best operative intervention for non-palpable testes (NPT) has not been standardized as yet, making the ideal laparoscopic approach challenging and controversial. The aim of this study was to evaluate outcomes of laparoscopic approaches to determine the best surgical intervention.

Methods: Literature review was performed, analyzing laparoscopic treatment modalities for intra-abdominal testes (IAT) and its results. Additionally, we reviewed IAT cases treated in our Department between January 2016 and December 2022 and evaluated the outcomes of different operative interventions. Statistical analysis was performed with SPSS 20.0

Results: The literature supports the laparoscopic two-stage Fowler-Stephens technique in the management of IAT, especially when the child is over 2 years old and the testicles are high located. In our experience, we had better results with Shehata technique and one stage laparoscopic orchidopexy. In fact, in the twenty-three five-year-old middle aged patients operated for IAT, 8 patients (34,8%) had staged Fowler-Stephens orchidopexy, 9 (39,1%) had one stage laparoscopic orchidopexy, 4 (17,4%) had Shehata technique and 2 (4,9%) had laparoscopic orchiectomy because of testicular atrophy. After a mean follow-up period of 3,7 years [2-7 years], testicles treated with the Shehata technique and one stage laparoscopic orchidopexy were of good size and viable. The laparoscopically staged Fowler-Stephens orchidopexy group showed atrophy in one testis (12,5%).

Conclusion: The laparoscopic approach is still the first procedure to face a NPT, for diagnosis and therapeutic. The surgical technique for non-palpable testes is still controversial and depends on the location of the testicles.

Categories

Urology

LO114

DETERMINATION OF THE EFFECT OF REMOTE ISCHEMIC CONDITIONING ON INTESTINAL ISCHEMIC REPERFUSION INJURY: AN EXPERIMENTAL STUDY.

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All India Institute of Medical Sciences, Jodhpur, India

Purpose: Remote ischemic conditioning (RIC) is a phenomenon, which offers protection against ischemia – reperfusion (IR) injury to distant organs when an organ or limb is subjected to non lethal repeated episodes of ischemia. Does Remote Ischemic Conditioning have any protective effect on intestinal ischemic reperfusion injury in rats.

Methods: Male Wistar rats (n=24) weighing 150-200 g were randomly assigned to the following 4 groups. (i) Sham (n=6), (ii) Intestinal IR injury (n=6), (iii) Intestinal IR injury with RIC during ischemia (n=6), (iv) Intestinal IR injury with RIC upon reperfusion (n=6).
Laparotomy was performed under intraperitoneal Ketamine anaesthesia. Intestinal ischemia was induced by occlusion of individual arcade of vessels supplying a segment of bowel using a gloved artery forceps.
After 45 min of ischemia, the forceps were removed and reperfusion was confirmed by the change of colour of the intestine. The abdomen was then closed and rats resumed their routine activity. 24 hours later, rats were sacrificed and intestinal tissues were harvested for evaluation.
Tissues were then evaluated for Histopathological examination, gene expression of IL6, *TNFα*, STAT3 protein, BAX protein, HO1, *Ki-67 genes were measured using RT-PCR.*
Also, the motility of intestinal tissue was assessed through Dale's Apparatus.

Results: RIC reduced the histological signs of intestinal IR injury and also ameliorates it by decreasing levels of inflammatory cytokines, increasing proliferation and apoptosis of damaged cells and also attenuates the apoptosis. Also RIC improved motility.

Conclusion: We used a rat experimental model to analyze the cellular and molecular mechanisms of intestinal IR injury as well as the impact of RIC on these events. This will help in performing clinical study to look for drugs which act via these mechanisms on ischemic reperfusion injury of intestine.

Categories

Miscellaneous

P115

ATTENTION: MASS IN THE RIGHT UPPER QUADRANT.

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Aim: The excision of masses located in the right upper quadrant (RUQ) can be complicated. We present three cases of children with RUQ masses, each accompanied by surgical complications.

Patients and Methods: We examined the intraoperative complications of three children experiencing upper abdominal pain and RUQ masses, considering the etiology, complications, and demographic characteristics. All patients underwent diagnostic workup, including abdominal CT and/or MRI, and subsequently, laparoscopic total removal of the masses.

Results: Three children (2 females, 1 male) aged five, nine, and ten, respectively, underwent the removal of RUQ masses. One female had an echinococcus cyst on the liver, another had a RUQ bronchogenic cyst, and the third had a large lipoma at the hilus of the right kidney. Laparoscopy successfully removed all masses. Postoperatively, the girl with a liver echinococcus cyst developed a pneumothorax due to trocar malposition. The boy with a bronchogenic cyst experienced a diaphragmatic injury due to dense inflammation of the diaphagmatic site of the cyst. It was repaired laparoscopically. The girl with a lipoma had dense adhesions to the right kidney hilum and ureter, resulting in a post-surgical urinoma. A JJ catheter resolved the ureter leak in three weeks, with no further complications or recurrences during follow-up.

Conclusion: Laparoscopic removal of RUQ masses can be challenging, often accompanied by surgical complications. Pediatric surgeons must be vigilant about the risks involved in mass removal, and if complications arise, timely repairs should be performed without delay.

Categories

Gastrointestinal

SO116

COMPARISON OF ENDOSCOPIC AND FLAP METHODS IN CHILDREN WITH SACCOCOCCGIEAL PILONIDAL SINUS.

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Background: The treatment of sacrococcygeal pilonidal sinus (SPS) in pediatric patients presents a challenge due to the high recurrence rates associated with conventional methods. This study aims to compare the Limberg flap method and Pediatric Endoscopic Pilonidal Sinus Treatment (PEPSIT) for the treatment of SPS in children, in terms of efficacy, potential benefits, and safety.

Methods: Thirty-six children with SPS who had undergone either Limberg flap technique or PEPSiT method, from April 2017 until August 2022, were retrospectively evaluated. Data regarding patients' demographics, complications and postoperative courses were recorded, and the two groups were compared.

Results: The patients have a mean age of 14.69±1.69 years. Among them, 18 patients (13 males, 5 females) underwent Limberg flap method (Group LF), and 18 patients (15 males, 3 females) underwent PEPSIT (Group P). No significant difference is observed between the two groups in terms of age, gender, number of fistulas, operative time, duration of wound healing, presence of early complications, and mean recurrence rate ($p>0.05$). The postoperative analgesic duration of patients that belongs to Group P is found to be significantly shorter than that of Group LF patients (1.1±0.5 and 2.1±0.8 respectively). Patients with PEPSIT returned to their daily activities faster than those in Group LF (respectively 1.00±0.00 and 8.17±5.61 days with $p<0.005$).

Conclusion: Although PEPSiT and Limberg flap methods have similar complication rates, the need for analgesic use is less and the time for returning to daily activity was significantly lower in Group P when compared to Group LF.

Categories

Miscellaneous

P117

MIS APPROACH IN PRIMARY FALLOPIAN TUBAL TORSION: A SINGLE CENTER EXPERIENCE.

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Background: Isolated Fallopian tube torsion (IFTT) is a relatively rare condition affecting young female patients, presenting as a nonspecific abdominal pain (acute or chronic), often associated to vomiting. Diagnosis appears difficult to establish with standard diagnostic procedures and in most patients a definitive diagnosis is obtained only through a minimally invasive surgical exploration. Our purpose is to share our experience in managing these surgical cases, focusing on the difficulty of the diagnostic flowchart.

Methods: We performed a retrospective case review series of pediatric patients with IFTT from 2021 in our institution, analyzing days before the diagnosis, efficacy of ultrasound, usefulness of secondary imaging exams (CT and MRI) and type of surgical treatment.

Results: Four cases with isolated fallopian tube torsion were treated in our institution; two cases needed a laparoscopic radical treatment as hemisalpingectomy with ovarian preservation, while for the other two cases a laparoscopic derotation and fenestration of the cyst were performed. In all cases an MRI was performed to complete the diagnostic process.

Conclusion: IFFT is a difficult diagnosis to establish, since its low frequency and lack of clear guidelines. MRI seems to facilitate the diagnostic process. Laparoscopic approach is safe, feasible and a good option to treat this type of condition. For this reason, we propose our protocol including advanced imaging exams to try speeding the diagnosis in order to avoid massive surgical treatment.

Categories

Miscellaneous

P118

INDICATIONS AND LIMITS OF THE LAPAROSCOPIC APPROACH FOR HYDATID HEPATIC CYSTS.

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Introduction: Surgery represents the main treatment of hydatid hepatic cysts. The aims of the surgical intervention are complete evacuation of the cyst without spillage, followed by sterilization and obliteration of the cavity.

Material and method: A number of 22 hydatid hepatic cysts were treated in our clinic over a period of 5 years and only 4 cases needed conversion to open surgery due to the proximity to the diaphragm, dimensions and localization.

Results: Our retrospective study showed laparoscopic therapy and puncture, aspiration, injection and reaspiration (PAIR) intervention to be safe and effective alternative options to open surgery in patients with a suitable indication such as cyst type and location. There are still some concerns for the recurrence rate, spillage and anaphylactic shock. For the laparoscopic approach, it is believed that location is a very important factor to select the patients. The anteriorly, inferiorly and the left part located cysts are more appropriate for laparoscopic treatment. The major limitation to the laparoscopic approach of the hydatid hepatic cysts operated in our clinical hospital has been the localization of the cyst in the VII – VIII segments and the depth of the cysts.

Discussions: Laparoscopy provides a lesser invasive tool for achieving results same as with the established open surgical techniques. Simple cysts with easily accessible locations are easier to be managed by laparoscopy and the operation takes less time than the open one. Multiple localizations can make the approach difficult both in classic and laparoscopic surgery.

Conclusion: Laparoscopic approach of hydatid hepatic cysts is safe and feasible. There are important advantages including shorter operative time and hospital length of stay. Conversions occur mainly for the segment VII – VIII localization or depth of the cyst.

Categories

Miscellaneous

P119

EXPERIENCE WITH THE USE OF INDOCYANINE GREEN IN MINI-INVASIVE AND OPEN PEDIATRIC SURGERY AT THE DEPARTMENT OF PEDIATRIC SURGERY, TRAUMATOLOGY AND UROLOGY IN POZNAN.

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Background: Indocyanine green (ICG), a water-soluble tricarbocyanine fluorophore, is increasingly used for many types of procedures in pediatric surgery. The procedure is performed with specialized equipment. The use of indocyanine green can be a significant aid to the surgeon during the procedure, but requires knowledge of the appropriate procedures.

Methods: This retrospective study examined the feasibility and application techniques of ICG in pediatric mini-invasive and open surgery at the Department of Pediatric Surgery, Traumatology and Urology in Poznan.

Results: We reviewed the medical records of 25 pediatric patients operated with ICG. Our study included a variety of ICG applications during mini-invasive and open surgery, including: surgery for abdominal tumors, biliary tract, suspected breast metastases, renal agenesis, and melanoma-like lesions. We have determined the usefulness of using ICG during certain procedures.

Conclusions: Near-infrared (NIR) fluorescence imaging with indocyanine green (ICG) is a very useful tool in pediatric minimally invasive surgery. Real-time image-guided surgery allows for easier identification of anatomical structures and facilitates surgery, especially in difficult cases. The most common current applications in pediatric surgery include: difficult cholecystectomy, partial nephrectomy, tumor removal, and more are being added. This technique is easy to use and safe for the patient. The main limitation is the specialized equipment, which is not available in every center, and its cost.

Categories

Robotics and Innovations

P121

DISMEMBERED PYELOPLASTY FOR URETEROPELVIC JUNCTION OBSTRUCTION: EXPERIENCE WITH DIFFERENT APPROACH.

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Context: ureteropelvic junction obstruction (UPJO) is the most common cause of postnatal hydronephrosis. It is defined as a blockage or obstruction of urine flow from the kidney into the proximal upper ureter.

Pyeloplasty is the gold-standard treatment if surgery is indicated. This procedure can be open, laparoscopic, or robot-assisted.This treatment can be used in long strictures, in severe hydronephrosis, or in the presence of crossing vessels .

Since the first description of the dismembered pyeloplasty by Anderson and Hynes in 1949 for the management of retrocaval ureter, open reconstructive surgery has been considered to be the gold standard for the treatment of UPJO.

A retrospective cohort study was performed to evaluate operative characteristics and follow up of children undergoing dismembered pyeloplasty in our tertiary institution between Jan 2018 - Dec 2023. Outcomes included overall complications, re-stenosis, and revision pyeloplasty based on clinic-radiological parameters. A total of 75 procedures were performed (50 open, 20 laparoscopic and 5 robotic-assisted). The current status of three surgical approaches to the treatment of UPJO are reviewed: open surgery, laparoscopic pyeloplasty (LP) and robotic-assisted pyeloplasty.

Conclusion: in our exeperience we confirm that mininvasive surgery is a safe procedure for dismembered pyeloplasty in UPJO. Learning curve to perform robotic-assisted procedure seems also to be shorter than for laparoscopic one.

Categories

Urology

SO123

CURRENT STATUS OF INITIAL SURGICAL TREATMENT OF PRIMARY OBSTRUCTIVE MEGAURETER (POM): RESULTS OF A MULTICENTER NATIONWIDE SURVEY ON 171 PATIENTS.

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Initial treatment of POM is controversial. Aim of present study was to review practice and results of different treatment modalities in major national centers.

Material And Methods: An online questionnaire-based survey regarding patients undergoing treatment for unilateral POM between 01/2015 and 12/2020 was performed, with participation of 7 national institutions.

Results: 171 patients were reported. Of these, 83 (48.5%,72 treated at a single center) underwent endoscopic balloon dilatation (EBD);77 (45%,) open reimplantation (OR), of which 8 (10%) after a previous cutaneous ureterostomy; 9 robotic-assisted laparoscopic ureteral reimplantation (RALUR); and 2 laparoscopic reimplantation (LUR). OR equally performed with similar number of cases in all centers, but the one offering mainly EBD. The 9 RALUR cases were treated in 5 of the 7 centers. LUR was performed only at a single center and abandoned after 2018. Median(IQR) age at treatment was 11.5(11-21) months for EBD, 24(19.5-45) months for OR, and 72(47-81) months for RALUR/LUR. In OR, Cohen and Politano technique were used equally, whereas an extravesical reimplantation was performed in all RALUR/LUR. Ureteral tailoring was performed in 59/77(77%) patients undergoing OR vs. 4/11(36%) undergoing RALUR, p=0.002. Median(IQR) length of stay (LoS) was 3.5(2.5-5.5) days for EBD, 6(3-6.6) days for RALUR/LUR, and 7.6(7-9) days for OR. The primary treatment failed in 6/77 (7.8%) patients undergoing OR, 1/9 (11%) undergoing RALUR, 20/83 (24.1%) undergoing EBD, and 2/2 (100%) undergoing LUR, p=0.014.

Conclusions: OR was the most common initial treatment of POM and the one fraught with the lowest failure rate. LUR has been abandoned, whereas RALUR was performed selectively in older patients, in many centers. Ureteral tapering was performed significantly less commonly during RALUR/LUR compared to OR. EBD was generally performed in younger patients and had the shortest LoS.

Categories

Urology

LO124

TRANSVESICOSCOPIC URETERIC REIMPLANTATION FOR VESICOURETERIC REFLUX IN CHILDREN- LESSONS LEARNT FROM 500 URETERS.

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Purpose: Transvesicoscopic ureteric reimplantation (TVUR) is a technically demanding operation. We describe our experience with TVUR for Vesicoureteric reflux (VUR) in children.

Methods: We performed TVUR for VUR in 302 children (509 ureters) between February 2012- December 2023. The mean age was 3.2y (0.3-14). Only 4 were Infants. 29% were females. Most (82%) ureters had grade 3-5 VUR, 35 had paraureteric diverticulae (12 giant diverticulae), 27 had prior failed Dx/HA injection, and 9 were duplex ureters. Tapering was done in 19 ureters. All ureters were reimplanted using Cohen cross-trigonal technique. Follow-up consisted of clinical evaluation, ultrasound, and MCUG/DRCG.

Results: TVUR was successfully completed in all cases. Mean duration of surgery (vesicoscopy only) was 37.8 (+/- 6.1) minutes per ureter. Approximate time for port insertion & closure was 40 minutes. Double J stents(DJS) were used in 76% ureters and removed after 3-4 weeks. Median post-operative bladder catheterization and hospital stay was 2 days. There were 23 (7.6%) postoperative complications (20 DJS-induced UTI, 1 large bladder clot requiring cystoscopic evacuation, 1 intestinal perforation requiring laparotomy, and 1 ureteric obstruction requiring re-operation). Follow-up MCUG/DRCG was available in 184 children (326 ureters, 64% of total ureters) with 96.1% success; 13 (4%) ureters (all initial grade 4-5 VUR) had residual low-grade (grade 1-2) VUR, but none required further antireflux surgery.

Conclusions: To our knowledge, this is the largest experience of TVUR reported till date. TVUR seems to be a safe and successful technique in children to correct VUR. Special care should be taken in children with prior lower abdominal surgery to avoid bowel injury during port placement. In selective cases, the use of post-operative DJS may be avoided.

Categories

Urology

SO125

LIFE-SAVING POTENTIAL OF ENDOSCOPIC SURGERY IN CHILDREN WITH PULMONARY ASPERGILLOMA.

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Purpose: Pulmonary aspergillosis (PA) is a major cause of morbidity and even mortality in immunocompromised children after stem-cell transplantation (SCT). Antifungal agents alone are often ineffective in the treatment of an aspergilloma mass. We aimed at describing the role and timing of endoscopic surgery in the challenging management of children with PA.

Methods: We retrospectively reviewed charts of children that underwent SCT from May 2013 to December 2023. We included children with PA with or without aspergilloma. We compared the outcome of those treated conservatively to those who underwent surgery.

Results: Ten children (6 boys and 4 girls) met the inclusion criterion of PA. Post-SCT PA was diagnosed by positive serum testing for aspergilloma antigen (8 patients), by detection of aspergillus in tracheal fluid, or by radiologic findings (1 patient each). They all received antifungal therapy. In four of the ten children CT scan showed a pulmonary aspergilloma. One patient with conservative management only died from acute pulmonary hemorrhage three months after SCT; another patient who had open surgery (partial resection of the right lower lobe, re-thoracotomy for hematothorax) 9 months after SCT died two month after surgery from acute pulmonary, gastrointestinal, and intracranial hemorrhage. Two patients with pulmonary aspergilloma underwent elective thoracoscopic lobectomy at one month after SCT to remove the aspergilloma. Postoperatively, they both were self-ventilating on room air on day zero or two, respectively. Also, they did not show radiologic signs of recurrent PA at our 3 or 5 months follow-up, respectively. Another three patients with PA treated conservatively died due to acute cardiorespiratory failure (1 patient) or acute pulmonary and gastrointestinal bleeding (2 patients).

Conclusion: Early endoscopic treatment of pulmonary aspergilloma in immunocompromised children after SCT appears to prevent fatal pulmonary hemorrhage. Especially following a demanding SCT, minimal invasive surgery should be the preferred approach.

Categories

Thorax

P127

MINIMALLY INVASIVE APPROACH OPTIONS FOR PEDIATRIC CHEST WALL MALIGNANT TUMOR EXCISION AND RECONSTRUCTION CHILDREN.

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Aim: Complications of thoracotomy include but are not limited to bleeding, infection, pneumothorax, pleural effusion, shoulder dysfunction, pain, and post-thoracotomy pain syndrome. What's more, chest wall deformities and scoliosis may develop in the long-term in children. Therefore, every effort has to be made to prevent or at least to minimize the extent of this incision to preserve the chest wall integrity. We aimed to present our experience and discuss the options for chest wall tumors and reconstruction in children.

Methods: Medical records of three consecutive patients who necessitated thoracoscopic partial rib(s) excision are reviewed. Demographics, indications, surgical techniques and complications were evaluated.

Results: Demographics, indications, and surgical details are presented in figure. Thoracoscopy was utilized to determine the tumor margins for patient 1 whereas the tumor was totally excised along with invaded two ribs (partial) thoracoscopically in patient 2. Robotic instruments and laser utilization enabled thoracoscopic excision of three ribs (½ posterior) and chest wall reconstruction with PTFE mesh in patient 3. There was no intraoperative complication.The median time for chest drainage and hospital stay were 8 and 9 days.

Conclusion: Thoracoscopy can be preferred for either to minimize or to prevent the burden of posterolateral thoracotomy incision(s) in selected pediatric patients with chest wall malignant tumors.

Categories

Robotics and Innovations

P129

FLUORESCENCE-AUGMENTED ROBOTIC SURGERY WITH INDOCYANINE GREEN (ICG) IN 45X0/46XY DISORDER OF SEX DEVELOPMENT (DSD): A CASE REPORT.

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Purpose: To discuss the utility of indocyanine green (ICG) in robotic-assisted surgery in patients with disorders of sexual differentiation (DSD) that require ablative surgery.

Patients and Methods: We present the case of a patient with a masculinized phenotype, left undescended testis and scrotal hypospadias. He was diagnosed by gonadal biopsy with mixed gonadal dysgenesis (MGD) after orchiectomy for undescended left testicle. Karyotype than confirmed a mosaic of 45,X0/46,XY. Cystoscopy revealed urogenital sinus communicating with vaginal remnant. Uterine cervix was also visualized at the bottom of the remnant. At 7 years old he first underwent laparoscopy for removal of the Mullerian remnants (left hemi-uterus and vagina). For persistence of the vaginal remnant causing severe dysuria and recurrent urinary tract infections, at 11 years old robotic-assisted abdominal surgery was performed. Before surgery ICG was injected through a 6 Ch Foley catheter placed in the Mullerian remnant under cystoscopic guidance. Next, through dissection of the plane between rectum and bladder, the fluorescent Mullerian remnant was identified and isolated. The remnant was than etched and opened to identify the correct location of the base, that has been closed with transfixed stitch prior to the removal of the remnant.

Results: ICG facilitated robotic pelvic dissection in the presence of tenacious scar adhesions between organs. The ICG also allowed optimal visualization of the vaginal remnant. At least, thanks to ICG, the Mullerian remnant has been dissected just before its outlet into the urogenital sinus.

Conclusion: Fluorescence-augmented surgery with ICG can facilitate ablative surgery in DSD. Although it is not necessary to utilize fluorescence-enhanced surgery in all cases, we find the utilization of ICG in complex surgeries useful.

Categories

Robotics and Innovations

LO130

LAPAROSCOPIC MANAGEMENT OF OMPHALOMESENTERIC CANAL PATHOLOGY IN CHILDREN.

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The pathology of the omphalo-mesenteric canal is a congenital anomaly resulting from a failure of involution of the vitelline duct. Over the last decade, the spectrum of pathologies diagnosed and treated through laparoscopy has significantly increased. The objective of our work was to demonstrate the role of laparoscopy as an effective and reliable diagnostic and therapeutic means in the management of omphalo-mesenteric anomalies.

We conducted a retrospective study over a four-year period in our department. Nine children were admitted with suspected omphalo-mesenteric malformations, and both the definitive diagnosis and treatment were performed through laparoscopy.

Seven boys and two girls, aged six months to thirteen years, presented with either abdominal pain or umbilical anomalies. Seven children underwent upfront laparoscopic exploration. Findings included enteromesenteric fistula in two cases, fibrous adhesion in two cases, umbilical cyst in one case, Meckel's diverticulum associated with an enteroid cyst and mesenteric adhesion in one case. Laparoscopic exploration was normal in three cases. We simultaneously performed the treatment of identified anomalies through laparoscopy. Postoperative courses were uneventful, with no reported complications.

Laparoscopic surgery is a preferred tool, enabling both the diagnosis and treatment of omphalo-mesenteric canal malformations, providing children with the benefits of minimally invasive surgery.

Categories

Gastrointestinal

LO131

LAPAROSCOPIC TREATMENT OF RECTAL PROLAPSE IN CHILDREN : CHALLENGES IN A DEVELOPING COUNTRY HOSPITAL.

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Rectal prolapse in children, characterized by the continuous or intermittent protrusion of the rectal wall through the anus, is a common and benign pathology often attributed, in the majority of cases, to constipation, and occasionally to the passage of soft stools with forceful straining. The management of this condition remains a subject of considerable controversy. Laparoscopic treatment is indicated for total rectal prolapse resistant to medical intervention. The aim of our study is to demonstrate the feasibility and effectiveness of laparoscopic treatment for rectal prolapse in children in our hospital.

Our retrospective study focused on 11 cases of rectal prolapse in children managed in our department. Our surgical technique involves the introduction of three trocars, allowing for lateral fixation of the rectum to the aponeurosis of the psoas muscle outside the internal iliac pedicle. Postoperative outcomes were marked by zero mortality and no postoperative complications. The hospital stay duration was 24 hours.

Laparoscopic treatment of rectal prolapse in children appears to be a straightforward, effective technique, yielding excellent results.

Categories

Gastrointestinal

LO134

INTRODUCTION OF 3D MODELING AND PERIPHERAL NERVE TRACTOGRAPHY IN THE MANAGEMENT OF PELVIC TUMORS.

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Purpose: We developed a program to achieve 3D modeling of the patient's anatomy based on MRI images combined with tractography of the peripheral nervous system and explore the usefulness of this tool for the management of patients with pelvic tumors.

Methods: 24 patients underwent 3T MRI for preoperative evaluation after Institutional Review Board (IRB) approval (n° 2015-A01705-44) from 2015 to 2019. They were presacral (n=3), sacrococcygeal (n=4) and pararectal teratomas (n=1), lumbar or pelvic neuroblastoma (NB) (n=6), rhabdomyosarcomas (n=8) and two neurofibromas. Specific sequences for 3D modeling was performed in all cases and for tractography in seven cases. Native images and 3D models were shown to the surgical team (senior and resident) before and during surgery (on screens or integrated in the operating field of the console in case of robotic surgery (n= 5).

Results: 3D models clearly helps to anticipate surgical strategy for neurogenic tumors and bladder-prostate rhabdomyosarcomas and allowed sparing of the L5 and S1 roots in two cases. It appears less useful for teratomas. The integration of the 3D model in the operative field of the surgical robot was judged highly contributive in all cases, especially for the dissection of iliac vessels and in one case of recurrent pelvic RMS. The 3D model was evaluated positively by all resident surgeons before and during surgery.

Conclusion: To our knowledge, this is the first report where peripheral nervous tractography has been integrated in a 3D model in patients with pelvic tumors. This preliminary work encouraged us to develop this concept routinely to better anticipate surgery (cognitive simulation) and during the surgery, to guide dissection and preservation of nervous structures. It is also of great interest for education of residents and to enhance communication with families and non-surgeon colleagues.

Categories

Oncology

P135

RESULTS OF KIDNEY DRAINAGE DURING LAPAROSCOPIC PYELOPLASTY IN CHILDREN USING PUNCTURE PYELOSTOMY.

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Relevance: Today, the “gold standard” for surgical treatment of grade 3-4 hydronephrosis in children, along with the retroperitoneoscopic approach, is laparoscopic pyeloplasty. But there is no consensus on the choice of kidney drainage method.

Goal and tasks: To evaluate the effectiveness and safety of kidney drainage using puncture pyelostomy during laparoscopic pyeloplasty in children.

Materials and methods: The study included 35 children from 2 months to 18 years with grade 3-4 hydronephrosis. He underwent laparoscopic pyeloplasty with puncture pyelostomy. We used a 5CH ureteral J-stent. On days 7-14 after surgery, a “color test” was performed. An indigo carmine solution was injected into the pelvis through the pyelostomy, and the pyelostomy was clamped. The presence of indigo carmine-stained urine was considered a positive result.

Results: Of the 35 operated children, 29 had a positive test on days 7-10. In 3 infants (due to the presence of postoperative edema of the anastomosis), the test was repeated on the 14th postoperative day with a positive result. In 2 children, an internal ureteral stent was still installed due to negative results of the “color test”. . Repeated pyeloplasty was performed in one child due to severe scarring in the anastomotic area.

Conclusion: The use of puncture pyelostomy in children during laparoscopic pyeloplasty allows one to control the course of the early postoperative period due to permanent access to drainage. It is possible to conduct a “color test” to confirm the patency of the anastomosis; re-hospitalization and general anesthesia are not required as when using urine diversion using a JJ stent.

Categories

Urology

P136

PERITONEAL DIALYSIS CATHETER COMPLICATIONS AFTER LAPAROSCOPIC INSERTION IN CHILDREN: OUR EXPERIENCE.

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Introduction: For children with end-stage kidney failure, the ultimate goal is successful kidney transplantation. Meanwhile, peritoneal dialysis (PD) serves as a beneficial home modality, enhancing quality of life and autonomy, making it the preferred method due to minimal disruption of daily life. Therefore, several infectious or non-infectious complications may occur. And because achieving a durable and infection-resistant peritoneal access is staple to therapy we sought to identify complications after laparoscopic PD catheter insertion that lead to significant adverse events and there potential surgical management afterwards.

Patients and Methods: A retrospective study was conducted covering all the cases that have had laparoscopic insertion of PD catheter in the period from January 2021 to December 2023. Complications and their surgical management were precisely outlined.

Results: Nineteen patients who have undergone laparoscopic PD catheter insertion were identified. The mean age of our patients was 8.5 years old (4-15 years). There were 8 girls and 11 boys. The complications rate after laparoscopic insertion was 52.6% (n=10). It was essentially clogging of the catheter in 5.2 % (n=1), exit-site leak in 15.7% (n=3), and infection in 21% (n=4). Other complications included migration of the catheter tip in 10.5% of the cases(n=2).Patients experiencing these complications underwent various invasive procedures. These included simple laparoscopic repositioning of the catheter in 26.3% (n=5), laparoscopic repositioning combined with omentectomy in 10.5% (n=2), removal and laparoscopic reinsertion of a new PD catheter in 5.2% (n=1), laparoscopic unclogging in 5.2% (n=1) and complete removal of PD with a transition to hemodialysis in 5.2% (n=1).

Conclusion: PD catheters are prone to develop complications that can be related either to the variations in procedural technique or to the patient. This subject is an important area of focus for future research and quality improvement efforts.

Categories

Miscellaneous

SO137

LAPAROSCOPIC OVARY-SPARING SURGERY USING A TISSUE SEALER IN PEDIATRIC PATIENTS.

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Background: According to the IPSO 2022 guidelines, ovary sparing surgery (OSS) is the recommended treatment for pediatric ovarian pathology. Our objective is to appraise our experience in laparoscopic OSS for ovarian mass lesions (OML) using an electrothermal tissue sealer (ETS).

Methods: A retrospective multi-centre review was conducted analysing the data of patients having undergone laparoscopic OSS resections of OML with the use of ETS, 2012-2023.

Results: Altogether, there were 42 female patients aged between 2 months and 17 years with the following pathology: large cysts (8.0-25.0 cm in diameter) with/or without adnexal torsion, n= 12/9 and heterogeneous tumours (5.0-12.0 cm in diameter) with/or without torsion, bilateral in two patients, n=17/6. The SIPES approach was utilised in 5 patients and conventional 3 port access in others. In all cases the lesions dissection/excision using ETS was performed at the precise, bloodless plane between the lesion and remaining ovarian tissue. In large cysts, ETS was also used for sealing the needle puncture site following the fluid aspiration. All procedures were successfully completed with zero conversion rate. Operative time ranged between 40 and 120 minutes. A capsular rupture was encountered in three instances (6.8%), with no spillage occurred. Postoperative recovery was uneventful in all patients. In three patients with immature teratomas confirmed histologically, a secondary laparoscopic procedure with adnexectomy and omentectomy was subsequently completed.

Conclusion: In our experience, the use of ETS in laparoscopic OSS resections is advantageous in facilitating accurate dissection/excision of OML whilst aiming to potentially preserve the healthy ovarian tissue.

Categories

Oncology

P138

LAPAROSCOPIC SPLENECTOMY IN RECURRENT NON PARASITIC SPLENIC CYST.

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Purpose: Splenic cysts are rare. They are usually asymptomatic and are incidentally diagnosed. Symptomatic patients usually present with abdominal pain or, rarely an abdominal lump. Splenectomy used to be the preferred treatment for these cysts. Currently, splenic conservation approaches are the focus of surgery. We highlight our experience in management of a recurrent nonparasitic splenic cyst.

Methods: 8 years female presented with intermittent left upper abdominal pain for 3 months. Physical examination was unremarkable. Radiological evaluation revealed cyst of size 6.7 x 7.3 x 7.7 cm at the upper pole of the spleen, likely a splenic epidermoid cyst. Initially patient underwent laparoscopic cyst deroofing and omental packing, however as symptoms recurred after an asymptomatic period of 3.5 months post surgery, patient had to undergo laparoscopic splenectomy 9 months later as evaluation revealed a recurrent splenic cyst.

Results: The postoperative period (post splenectomy) was uneventful. Patient had a very brief postoperative stay of 48 hours. Biopsy was reported as splenic epithelial cyst. Patient is currently asymptomatic at 3 months follow up.

Conclusion: Due to the nonspecific symptoms, the diagnosis of a splenic cyst can be prolonged. Symptomatic cysts require surgery. Choosing the adequate surgical technique to avoid complications is crucial. By deepening the understanding of the condition and surgical approaches, we can improve the therapeutic management for affected patients. Spleen-preserving procedures are preferred whenever feasible. In the present case, recurrence of the splenic cyst appeared, which left the patient with a total splenectomy as the final treatment choice.

Categories

Gastrointestinal

SO141

A RARE ANATOMICAL VARIATION AND ITS SURGICAL IMPLICATIONS: COMPLETE TRANSVERSE FISSURE IN A LEFT LUNG (TRILOBAR LEFT LUNG WITH RIGHT ISOMERISM).

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Introduction: Knowledge of the numerous anatomical variations of the vascular and bronchial anatomy is the key for a safe thoracoscopic pulmonary resection for Congenital Pulmonary and Airways Malformations (CPAM). Some can have both useful and dangerous consequences.

Methods: We present the case of a 8 months old infant with a prenatal diagnosis of CPAM, occupying the Culmen, S1-2-3, of the left upper lobe. We planned a parenchymal saving procedure (Culmenectomy, i.e resection of S1-3.

Results: At thoracoscopy, a complete transverse (horizontal) fissure was encountered, in addition to the usual oblique fissure. Thus, there were three separate lobes and the preservation of S4-5 (middle lobe) easy. The oblique fissure had to be completed with the tissue sealer, before the arterial branches to the upper lobe then the superior pulmonary vein could be dealt with. The only remaining structure to the specimen was a second branch from the inferior pulmonary vein and not the expected upper pole bronchus. The upper lobe bronchus was discovered lateral and posterior to the pulmonary artery, severed during the completion of the fissure and was closed with sutures. The post-operative course was uneventful and the patient discharged on post-op day 3.

Conclusion: Anatomical Variations are the main trap of pulmonary surgery. The one described here seems rare, three lobes on the left representing 1% in a series of autopsies, and the abnormal relation between artery and superior lobar artery found in only one case report, as the “Epiarterial bronchus” In this observation, the left lobe was in fact a mirror image of a normal right lung. Two lobes on the right have been coined "left nisomerism", thus this represent a "right isomerism". It allowed us an easy luing sparing surgery, but the missed bronchus could have been devastating post-operatively.

Categories

Thorax

LO142

LAPAROSCOPIC EXPERIENCE IN PEDIATRIC CHOLEDOCHAL CYST MANAGEMENT: ROUX-EN-Y JEJUNOJEJUNOSTOMY OUTCOMES - 5 YEARS' EXPERIENCE FROM NATIONAL CHILDREN'S SPECIALIZED HOSPITAL OKHMATDYT IN KYIV, UKRAINE.

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Objective: This abstract presents a comprehensive overview of a five-year laparoscopic experience in the management of pediatric choledochal cysts, with a specific focus on outcomes associated with Roux-en-Y jejunojejunostomy. The study was conducted at the National Children's Specialized Hospital OKHMATDYT in Kyiv, aiming to contribute valuable insights into the feasibility, safety, and long-term efficacy of laparoscopic interventions in treating choledochal cysts in the pediatric population.

Methods: A retrospective analysis was conducted on pediatric patients who underwent laparoscopic treatment for choledochal cysts with Roux-en-Y jejunojejunostomy between 2018 and 2023 at the National Children's Specialized Hospital OKHMATDYT in Kyiv. The study evaluated patient demographics, preoperative assessments, surgical techniques, intraoperative findings, immediate postoperative outcomes, and long-term follow-up. The abstract synthesizes these findings to offer a comprehensive perspective on laparoscopic management in pediatric choledochal cyst cases.

Results: The study included 15 pediatric patients who underwent laparoscopic choledochal cyst excision and reconstruction with Roux-en-Y jejunojejunostomy. Intraoperative exploration revealed successful laparoscopic visualization of biliary anatomy, allowing for meticulous dissection and reconstruction. Short-term outcomes demonstrated minimal postoperative pain, reduced hospital stays, and low complication rates. The abstract highlights the benefits of the laparoscopic approach, emphasizing its applicability and safety in the pediatric population.

Conclusion: This study conducted at the National Children's Specialized Hospital OKHMATDYT in Kyiv over a five-year period underscores the viability, safety, and efficacy of laparoscopic management for pediatric choledochal cysts, particularly with the implementation of Roux-en-Y jejunojejunostomy. The findings support laparoscopy as a preferred approach in children, offering distinct advantages such as enhanced cosmesis, reduced morbidity, and favorable long-term outcomes. Ongoing research and prospective studies will further solidify the role of laparoscopy with Roux-en-Y jejunojejunostomy as a standard and effective treatment strategy for pediatric choledochal cysts at our institution.

Categories

Gastrointestinal

P145

INTERCOSTAL PERCUTANEOUS ENDOSCOPIC GASTROSTOMY PLACEMENT: A VIABLE OPTION FOR PAEDIATRIC PATIENTS WITH GASTRIC DISPLACEMENT.

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Introduction: The percutaneous endoscopic gastrostomy (PEG) is a device widely used for enteral feeding in patients who are unable to take oral feeds. The placement of the PEG may be done endoscopically or laparoscopically - assisted through the abdominal wall into the stomach. However, in patients with severe anatomical deformities the stomach can be displaced cranially under the ribcage which makes placement of the device through the abdominal wall difficult or impossible. We investigated the possibility of intercostal PEG placement in these patients.

Methods: We used the intercostal approach for PEG placement in two patients. Both patients were 11-year-old girls with cerebral palsy and severe spinal deformity (kyphoscoliosis). Cranial displacement of the stomach was suspected based on plain x-ray and confirmed with endoscopic transillumination. The PEG was placed in the left anterior axillary line in the seventh intercostal space using the endoscopic “pull” method under general anaesthesia.

Results: There were no complications during the procedure. Enteral feeding was started six hours after placement of the PEG. On discharge and on follow up controls, the devices functioned properly. In both cases granulation tissue formed around the stoma which is a minor complication.

Conclusion: The intercostal PEG placement appears to be a safe method for paediatric patients in whom the device cannot be placed through the abdominal wall because of gastric displacement. In the literature, there is only one case report of a paediatric patient in whom this variant of PEG insertion was used, therefore more patients are needed in order to make a definitive conclusion.

Categories

Gastrointestinal

P147

LAPAROSCOPIC-ASSISTED SIGMOID RESECTION IN CHILDREN WITH INTRACTABLE IDIOPATHIC CONSTIPATION AND DOLICHOCOLON.

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Purpose: The purpose of this study is to present the results of laparoscopic-assisted sigmoid resections performed on children with intractable idiopathic constipation and dolichocolon. We also compared the outcomes of laparoscopic-assisted and open surgery.

Methods: Colon X-rays were taken of those with constipation who had been treated for at least one year and were resistant to diet, biofeedback, toilet training, enema, and laxative treatment. Sigmoid resection was performed in cases of dolichocolon, where the sigmoid colon appeared elongated on colon radiography. The patients were retrospectively evaluated based on their demographic data, surgery, length of hospital stay, postoperative complications, and long-term results.

Results: A total of six patients (4 boys/2 girls) underwent sigmoid resection, while eight patients (4 boys/4 girls) underwent laparoscopic-assisted sigmoid resection at our clinic between 2019 and 2024. The preoperative follow-up period was 14.2±10.7 (12-24) months. The mean age of the patients was 10.5±5.41 years in the open surgery group and 12.7±9.5 years in the laparoscopic-assisted group. The length of hospital stay was 8.6 (6-14) days in the laparoscopic-assisted group and 12.7 (7-23) days in the open surgery group. One patient in the open surgery group developed a stricture in the anastomosis line after surgery, but there were no postoperative complications in the laparoscopic-assisted group. Constipation was completely resolved in eleven patients. One patient in the laparoscopic-assisted group continued to use a lower dose than before the operation, and two patients in the open surgery group continued to use laxatives. The weekly number of defecations and the Bristol stool scale increased significantly after surgery in both groups ($p<0.05$).

Conclusion: Laparoscopic resection of the sigmoid colon is a safe procedure with excellent functional results for patients with dolichosigmoid, severe chronic constipation, This procedure offers the advantage of faster postoperative recovery and a shorter hospital stay.

Categories

Gastrointestinal

P148

THREE-PORT ROBOTIC MORGAGNI HERNIA REPAIR IN AN 8 MONTH OLD INFANT: THE FIRST CASE REPORT.

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Introduction: Morgagni hernia, also known as anterior diaphragmatic hernia, is the lesser common type of diaphragmatic hernia and is of very rare occurrence in children. Historically, such hernias required a thoracotomy or laparotomy for their repair. Currently, the da Vinci® surgical system has been used extensively in the field of pediatric surgery and there have only been isolated case reports describing its use for Morgagni hernia in even small children, the youngest being 18 months of age. To our present knowledge our case is the first case report of an infant operated for this condition by the robotic approach.

Case summary: An 8 month old boy was referred to our centre with history of recurrent lower respiratory tract infection for the past 4 months, who on evaluation with a CT Thorax was found to have an anterior diaphragmatic hernia, with herniation of a dilated loop of transverse colon in the anterior mediastinum displacing the heart posteriorly. After optimisation, he underwent a three-port robot-assisted laparoscopic Morgagni hernia repair with three 8mm ports were placed for instrumentation. Procedure was uneventful and child did well in the post operative period. Child was discharged on postoperative day 2 and currently doing well on follow up.

Conclusion: We report the first case of robot-assisted primary laparoscopic repair of a Morgagni hernia in an infant using the da Vinci® Surgical System.

Categories

Robotics and Innovations

LO149

ROBOT-ASSISTED LAPAROSCOPIC AUGMENTATION ILEOCYSTOPLASTY IN CHILDREN: PRELIMINARY RESULTS.

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Aim: Pediatric robot-assisted bladder augmentation (BA) is uncommonly used in Europe. We analyzed the preliminary results of our experience in robot-assisted laparoscopic ileocystoplasty (RALI) in children.

Method: Prospective monocentric study including all patients who underwent RALI since 2020. The procedures were performed using 4 DaVinci Xi© robot's arms , 5mm AirSeal© accessory trocar, and 12mm trocar for Endo-GIA©. BA used a detubularized ileal segment reconfigured in a W shape, combined, if necessary, with an extramural Mitrofanoff channel according to Abol-Enein and Ghoneim technique.

Results: Eight patients were included with a median follow-up 14,2 months (range 3-41). Median age at surgery and weight was 11,1 years (5-15) and 29 kg (20-99) respectively. Etiologies were: neuropathic bladder (5), bladder exstrophy (2), bladder dysfunction after surgical and radiotherapy treatment of rhabdomyosarcoma (1). Five children had already multiple surgeries including Mitrofanoff (N=2). The associated procedures were Mitrofanoff (5), bladder neck reconstruction (2), bladder neck closure (1), and bilateral vesicourereric reimplantation (1). All were done endocorporeal without conversion. Median operative time and length of hospital stay were 592,5 min (450-905) and 9,5 days (6-30) respectively. Two patients had a complication before 30 days: urinary anastomotic leak needing prolonged drainage (N=2, IIIB). Four patients had at least one complication after 30 days: stomal leak (N=1, IIIB), bladder stone (N=1, IIIB), false passage (N=2, IIIB), febrile urinary tract infection (N=1,II), ileocystoplasty perforation at 3 months (N=1,IIIB).

Conclusion: RALI is feasible even after several surgeries in children. This approach might be beneficial for multi-operated children with fragile abdominal wall. Technique needs more improvements to reduce operative time and early postoperative complications.

Categories

Urology

LO150

RETROPERITONEAL ROBOT-ASSISTED LAPAROSCOPIC PYELOPLASTY (RALP) IN CHILDREN <10 KG: PRELIMINARY RESULTS.

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Aim: Retroperitoneal laparoscopy is routinely performed for any pyeloplasty in our department. When our robotic surgery program started in 2020, we initially performed surgical procedures in children over 10kg. Then, with experience, children under 10kg were included. We aim to analyze our preliminary experience on feasibility of this approach in this specific group.

Method: Prospective study including all patients <10 kg who underwent RALP since 2021. Data collected were age, preoperative anteroposterior diameter (APD), renal function on MRI, perioperative data, 30-day complications according to Clavien-Dindo classification, and follow-up. Results expressed as median (range).

Results: Fifty children who had any pyeloplasty were included (2021-2022): Retroperitoneoscopy (12), RARP>10kg (31), RARP<10kg (7). Median followup for the specific group (RALP<10kg) was 2.8 months (1.1-6.1). Median age and weight at surgery were 10 months (6-20)and 8.5kg (7.8-9.8) respectively . All patients had a prenatal diagnosis and 4 had pyelonephritis. 5 had renal impairment. Preoperative APD was 35mm (26-40). PUJO was on the left side (N=5). Operative, docking and console times were 174 (117-195), 10 (5-16), and 105min (76-140) respectively, without conversion. A JJ and a transanastomotic external stents were used in 5 and 2 cases, repectively. All patients had a Foley catheter for 1 day (1-7). Length of hospital stay was 2 days (2-10). One patient had an associated primary obstructive megaureter. Two grade II complications have been reported: urinoma treated by prolonged drainage, pyelonephritis treated by IV antibiotics. All patients improved hydronephrosis: APD of 24mm (15-37).

Conclusion: RALP is feasible in children <10 kg without major complications. Further comparative studies to standard retroperitoneal laparoscopic approach with longer follow up are needed.

Categories

Urology

P151

SPLENOGONADAL FUSION: A RARE CASE OF INTRA-ABDOMINAL TESTIS.

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Introduction: Splenogonadal fusion is a rare congenital malformation characterized by an abnormal connection between the gonad and splenic tissue. Splenogonadal fusion can be be classified as continuous or discontinuous, the latter being more common, and frequently ending in orchidectomy. We present a case of a continuous splenogonadal fusion presenting as undescended testis that was submitted to laparoscopic-assisted orchidopexy.

Case Description: An eight-year-old boy with a left non-palpable testis was submitted to diagnostic laparoscopy. At exploration, a complete union between the left testis and the lower pole of the spleen was found. The vas deferens was macroscopically normal but the spermatic vessels were not apparent. The testis was separated from the spleen using a bipolar sealing device, and the peritoneal adherences were released. After ensuring that the deferens and accompanying vessels were long enough, a laparoscopic-assisted orchidopexy was performed**:** a transinguinal tunnel was created medial to the epigastric vessels and the testis delivered to the scrotum, where it was fixated with absorbable sutures.The patient presented with a moderate scrotal hematoma the next day and was discharged 2 days after surgery. At four weeks of follow-up, the scrotal hematoma had resolved, with both testis located in the scrotum with nearly equivalent size.

Conclusion: Splenogonadal fusion is usually discontinuous and presents as a painless mass or swelling in the male scrotum or along the inguinal canal, or even as an incidental finding during cryptorchidism correction. In the continuous type, the testis is frequently intra-abdominal and fused to the normal spleen, as in the presented case. It is often challenging to decide to either preserve or remove of the fused testis, with a tendency for orchiectomy reported in the literature. This case shows that preservation of the testis is a viable choice.

Categories

Urology

P152

PNEUMATIC DILATATION OF RENAL INFUNDIBUDIBULO-PELVIC STENOSIS: UNLOCKING NEW POSSIBILITIES.

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Introduction: Renal infundibulopelvic stenosis (IPS) in pediatric patients is a rare but potentially debilitating condition that can lead to a range of morbidities, including urinary tract infections, renal stone formation, hematuria, renal dysplasia, even renal failure if left untreated. This video presentation focuses on a unique case of a young girl with renal IPS and showcases the successful application of pneumatic dilation as a minimally invasive therapeutic approach.

Materials and Methods: This single-case study features a 8-year-old girl presenting pyonephrosis as a symptomatic renal IPS episode. The procedure was performed under meticulous fluoroscopic guidance using metallic hydrophilic guide and 7 mm pneumatic balloon. Our methodology included comprehensive pre-procedural assessment, precise balloon placement, and monitoring of hemodynamic parameters. Subsequent follow-up assessments evaluated clinical and ultrasound outcomes.

Results: The patient experienced symptom relief and a significant reduction in infundibular dilation, along with improved renal drainage, as demonstrated by a six-month ultrasound follow-up. No procedural complications or adverse events were observed during or after the intervention.

Conclusion: Pneumatic dilation emerged as a safe and effective and minimally invasive therapeutic option for the treatment of pediatric renal IPS and highlights its role in select cases. Further research and broader-scale studies are needed to validate these findings and expand the utility of pneumatic dilation as an effective tool in pediatric urology, potentially revolutionizing the approach to this rare condition.

Categories

Urology

LO155

SAFETY AND UTILITY OF ROBOTIC PYELOPLASTY IN SMALL CHILDREN (UNDER 15 KG).

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Purpose: Even though there is an exponential increase in the utilization of robotic assistance in surgery for children, many doubts still exist regarding its utility in smaller children, less than 15kgs, possibly due to 8mm ports, large instruments, and perceived need for larger working space. Hence we reviewed children who underwent Robotic Assisted Laparoscopic Pyeloplasty(RALP) to evaluate its safety and outcomes in children under 15kg.

Material And Methods: Children under 15 kgs who underwent RALP were reviewed with respect to, docking times, operative duration, complications, conversions, duration of catheter and dj stent and hospital stay. Success of the procedure was evaluated with USG and diuretic renogram after a minimum follow up of six months.

Results: Of the 132 children who underwent RALP over the past 3.5 years, Forty Eight were in children under 15kgs. The Median age/weight was 12 months(IQR 5.5-30m)/ 8.4kg. 87.5% were antenatally diagnosed. The duration of RALP was a median of 126 minutes(IQR 99-153). The average blood loss was 7ml. None needed conversion. The duration of catheter were 1.7 days and drain duration of 2 days(where used), median hospital stay of 2.8 days and dj stent of 6 weeks. My current practice is not to use any drains. Early complications included three patients with a prolonged urinary leak, treated conservatively. Five patients had UTI requiring antibiotics. On a follow-up of more than six months, Median Transverse Pelvic Diameter(TPD) reduced from 3.42 cms to 1.8cms. On diuretic renograpy, drainage improved in 47 of 48 patients with no drop in function. Only one had recurrent PUJO requiring redo.

Conclusions: RALP, with minimal modifications and attention to detail, can also be performed in small children safely with good outcomes. We describe modifications to make this procedure safe with good outcomes.

Categories

Robotics and Innovations

P156

LAPAROSCOPIC CHOLEDOCHAL CYST RESECTION - SINGLE SURGEON EXPERIENCE.

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Introduction: Laparoscopy is used increasingly for the resection of choledochal cyst and for hepatico-jejunostomy biliary reconstruction. In addition, there is an increased use of intraoperative Indocyanine Green fluoroscopy in the pediatric population.

Objectives: We present our experience with laparoscopic resection of choledochal cyst. Also, we present our initial experience with intraoperative ICG guidance.

Methods: From November 2020 to October 2023 we attempted choledochal cyst underwent laparoscopic excision of a choledochal cyst with Roux-En-Y anastomosis in four children. In the most recent case, we utilized intraoperative ICG imaging to define anatomy and pathology.

Results: All patients were operated by a single surgeon (DZ) for a Todani type I choledochal cyst. Age at operation was 4 years to 10 years. Three of 4 cases were completed laparoscopically. In 2 of the 3 cases that were completed laparoscopically, the Roux-En-Y anastomosis was done in an intracorporeal fashion. In the fourth case we utilized for the first time in our institution ICG guidance to delineate normal and pathologic biliary anatomy, which confirmed the diagnosis of Todani type Ic choledochal cyst originating proximal to the confluence of the main hepatic ducts. This case required conversion to open surgery due to technical challenge of performing hepatico-jejunostomy to each of the main hepatic ducts. Cyst diameter ranged 18-78 millimeters. Surgery duration was 191-388 minutes. There were no intraoperative complications and blood loss was negligible. Oral diet resumed on the 3rd or 4th postoperative day, and all patients were discharged 5-6 days after surgery. There were no long-term complications or signs of residual disease (follow up 1-16 months).

Conclusion: Laparoscopic choledochal cyst resection with intracorporeal Roux-En-Y heptico-jejunostomy is feasible and safe. Intraoperative ICG imaging may be an important adjunct to other pre and intraoperative imaging modalities to verify normal and pathologic biliary anatomy.

Categories

Gastrointestinal

P157

ROLE OF INDOCYANINE GREEN (ICG) IN THE MANAGEMENT OF CHOLEDOCHAL CYST IN PEDIATRIC PATIENTS: OUR INITIAL EXPERIENCE.

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Introduction: Near-infrared fluorescence (NIRF) is a common application of fluorescence image-guided surgery involving the usage of the indocyanine green dye (ICG). This study aims to highlight the benefits of using ICG in the laparoscopic excision of choledochal cysts. The use of ICG can serve as a tool for rapid, noninvasive, real-time mapping of the extrahepatic biliary system without exposure to any ionizing radiation.

Methodology: ICG-enhanced fluorescence-guided laparoscopic procedures were performed at the Department of Pediatric Surgery, AIIMS Jodhpur for children diagnosed with choledochal cysts. All the procedures were performed using ICG (0.5mg/kg) and injected 12 hours before the surgery. It was then visualized using a laparoscopic system (KARL STORZ GmbH and Co. KG, Tuttlingen, Germany).

Results: A total of 35 patients underwent choledochal cyst excision over 3 years. The median age of these patients was 6.1 years. Eight patients required conversion to open. and 4 patients underwent robotic surgery The median duration to start feeds and drain removal were 4 and 5 days respectively. The median length of hospital stay was 7 days. ICG was used in 9 patients and none of them had any postoperative complications.

Conclusion: ICG is excreted by the bile duct which enables the visualization and marking of the structures in the Calot's triangle. This aids in the complete excision of the cyst avoiding damage to surrounding vessels and accessory ducts. The key risk factors include inflammation and aberrant anatomy, which can thus be tackled better with the use of ICG-guided NIRF. It also provides the additional benefit of identifying any possible anastomotic leaks & makes the procedure more time-efficient.

Categories

Gastrointestinal

P158

ENDOSCOPIC VACUUM THERAPY FOR ESOPHAGEAL ANASTOMOTIC LEAK IN CHILDREN: PRESENTATION OF 2 PATIENTS.

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Introduction: Endoscopic vacuum therapy (EVAC) is becoming first line treatment in esophageal perforation in adult patients. However, literature reports regarding EVAC therapy in children are scarce. We would like to present our experience with EVAC for persistent esophageal anastomotic leak.

Methods: The following is a case presentation of two patients treated in our institution during 2023. The first patient was a newborn after primary repair of esopaheal atresia type C and congenital heart disease, with anastomotic dehiscence following emergency intubation. The second patient was a 2 years old boy with recurrent anastomotic stricture after esophageal atresia type A, with anastomotic leak after stricture resection. Endoscopic suction system was constructed with sterile sponge over a nasogastric tube and changed every 2-4 days. Both patients remained intubated in intensive care unit over the whole period of EVAC therapy.

Results: There were 3 suction system changes in the first, and 6 changes in the second patient. We observed no complications of EVAC therapy. Esophageal stents where placed following EVAC in both patients. In the first patient EVAC was applied as rescue treatment after ineffective prolonged pleural drainage. We observed healing progress but due to critical disease the stent was placed with the fistula still partially patent, with effective control of the leak. The patient died of hepatic and cardiac failure 10 days after stent placement. The second patient had complete closure of the fistula and tolerated oral diet. However, after stent removal he presented with recurrent stricture which requires continued stenting.

Conclusions: Our limited experience shows than EVAC therapy seems to be a safe and effective modality and can be considered for the treatment for esophageal anastomotic leak in children.

Categories

Thorax

LO159

THE EFFICACY AND EFFICIENCY OF THORACOSCOPIC STAGED REPAIR OF ESOPHAGEAL ATRESIA WITH INTERNAL TRACTION IN PRESENCE OF ANASTOMOTIC TENSION.

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Aim: Thoracoscopic staged repair with internal traction (TSRIT) is widely used to treat long-gap esophageal atresia patients. Based on clinical experience, there are also "classically non-long gap" patients with anastomotic tension who may benefit from TSRIT when it is not possible to overlap two ends of esophagus. This study aims to evaluate efficacy and the efficiency of TSRIT in EA patients.

Methods: Medical records of EA patients who were managed with TSRIT through 2020 to 2023 were reviewed. Demographics, pathologic types, operative characteristics and postoperative outcomes including postoperative oral feeding time, and functional oral intake scale (FOIS) results were evaluated. Early complications (< 6 months) were anastomotic leakage (AL) and stricture (AS) whereas late complications were AS, and gastroesophageal reflux (GER).

Results: Out of 16 patients (Type A:3, Type B:8, Type C: 5) with a median gestational age of 36 (34-40) weeks and median birth weight 2400 (1600-3470) gr were included. Cervical esophagostomy and conversion were required in 2 and 1 patients, respectively. The median gap length was 3 (2-7) vertebral bodies. The median ages at internal traction and primary anastomosis were 13 (1-180) and 26 (9-225) days, respectively. Oral feeding was initiated on the median of 12.5 (3-90) days, and the median time for total oral feeding was 17.5 (5-36) days. Early and late outcomes are summarized in Figure. There was no AS in type A and C patients whereas 6/7 patients with type B required dilatations. Only one patient required Nissen fundoplication due to GER. FOIS score was 4 in 2, and 5 in eleven patients. Median follow-up period was 17 (11-40) months.

Conclusion: TSIRT may be performed with a high success rate. Morbidity rates are comparable and even favorable compared to previous published results. Type B EA patients seem to have a high risk for AS.

Categories

Thorax

SO160

ENHANCING THORACOSCOPIC OESOPHAGEAL ATRESIA REPAIR SKILLS THROUGH 3D-PRINTED SIMULATION.

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Background: To describe the trainees' learning experience using a 3D-printed simulation model of thoracoscopic oesophageal atresia and tracheo-oesophageal fistula (OA TOF) repair.

Methods: During an international training day, a 3D-printed OA TOF model was used by paediatric surgical trainees to undertake a simulated OA TOF repair. Participant skill across five domains (quality of the knot ligating the TOF, spacing of oesophageal sutures, oesophageal suture tail lengths, oesophageal anastomosis tension, and knot structure) was assessed independently on three-point Likert scales by senior surgeons. Data is presented as mean (standard deviation).

Results: A total of 23 paediatric surgical trainees used the model. Mean total score was 12.5/15 (±2.3). The skill domains with the highest mean score were the oesophageal anastomosis knot structure (2.7/3, ±0.7) and anastomosis knot tail length (2.7/3, ±0.5). The lowest scores were for suture spacing at the oesophageal anastomosis (2.3/3, ± 0.5) and the tension in the anastomosis (2.3/3, ±0.7).

Conclusion: Thoracoscopic OA TOF repair poses a formidable challenge with a steep learning curve. Our 3D-printed model served as a valuable training tool, offering a safe environment for trainees to hone their skills. Identified areas for improvement, such as suture placement accuracy and achieving optimal tension in the anastomosis, can guide focused development strategies for enhanced surgical proficiency. This innovative approach demonstrates promise in advancing Paediatric surgical training methodologies.

Disclosure Statement:

The 3D-printed simulation models utilized in this study were acquired through a collaborative initiative between the European Paediatric Surgeons' Association (EUPSA) and Surgerylabs, a company founded by the authors(Jonathan J Neville, Reza Haghighi-Osgouei, Carmen Sofia Chacon) .

Categories

Thorax

SO161

STEPS TO DEVELOP A PAEDIATRIC THORACIC MINIMALLY INVASIVE SURGICAL PROGRAM IN CENTRAL EUROPEAN COUNTRY: WAY TO THE FIRST TWO LOBECTOMIES.

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Purpose: To summarise the evolution of paediatric thoracic minimally invasive surgical (MIS) procedures at the authors' institute. Also, to present the first two thoracoscopic lobectomies due to congenital pulmonary airway malformation (CPAM).

Patients: Paediatric thoracic MIS was implemented at the authors' institute in 2016. The first MIS procedures were lung wedge resections because of spontaneous pneumothorax and video-assisted thoracoscopic decortications in case of empyema. Later lung biopsies, congenital diaphragmatic hernia repairs, and tumour resections were done via thoracoscopy. Finally, two thoracoscopic lobectomies were accomplished in prenatally diagnosed patients with CPAM at the end of 2023. The patients were 16 and 9-month-old girls, the first with right lower lobe mixed lesion (intralobar sequestration&CPAM) and the second with right lower lobe CPAM. In both cases left main stem intubation was applied. A 5mm camera and two 3mm working ports were used. A 3mm energy device was applied for parenchymal dissection and lobar arterial vessel sealing. Staplers and clips were utilized for bronchial and venous closure. The resected lobes have been extracted in a piecemeal fashion through the enlarged place of the caudal working port. Procedures were finished with chest tube drainage. After an uneventful postop course, the patients were discharged on the 5th and 6th postoperative days. Follow-up of the two patients is ongoing.

Conclusion: Paediatric thoracic minimally invasive surgery has at least the same favourable cosmetical advantage in comparison to abdominal, laparoscopic procedures. Other pros for thoracoscopy over thoracotomy, are excellent view, due to the magnification, the enhanced recovery after the procedure and the absence of musculoskeletal deformities related to surgery. Despite these benefits, thoracoscopy is much less popular and used than laparoscopy. We plan to start with the congenital oesophageal atresia repair in cooperation with an expert surgeon and continue improving our instrumental resources, e.g. obtaining 5mm staplers.

Categories

Thorax

SO162

ROBOTIC ASSISTANCE FOR ENHANCED DEXTERITY IN DEEP PELVIC SURGICAL PROCEDURES: A SINGLE CENTER EXPERIENCE.

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Introduction: The surge in mini-invasive surgery over the past decade has facilitated the feasibility of various procedures through a robotic approach. While robotic surgery has traditionally been prevalent in urological procedures, there is a global expansion of robotic programs with increasing applications in gynecological and deep pelvic surgical procedures. This study aimed to elucidate the feasibility of pelvic procedures, using the Da-Vinci robotic-system within a tertiary referral center.

Methods: Medical records of patients undergoing robotic-assisted pelvic procedures between 2021 and 2023 in our center were retrospectively collected. Data on preoperative workup, surgical aspects, complications and follow-up evaluations were analyzed.

Results: To date, eight patients, with an average of 14 years, underwent robotic pelvic surgical procedures. Among them, four patients presented with colorectal diseases. The bowel resection with intracorporeal anastomosis was performed in three cases (two patients with history of sigmoid volvulus and one patient with inflammatory myofibroblastic tumor) while excision of a cyst in the ischiorectal space was carried out in the case of rectal duplication. The remaining four patients exhibited pelvic lesions, including a paramesonephric cyst, a Mullerian cyst, an ovarian teratoma, and a ganglioneuroblastoma intermixed. In these cases, complete robotic excision of the pelvic mass was successfully performed. Overall, the postoperative course was uneventful and the patients were discharged after a median of 6 days (1-17). No complications were identified during a median follow-up of 6 months (range 2-14 months).

Conclusion: Robotic assistance significantly contributed to achieving mini-invasiveness in narrow fields, such as the lower pelvis. The inherent magnification of the robotic camera and dexterity of robotic arms played a crucial role in mass excision within narrow spaces and intracorporeal suturing. Provided economic considerations are addressed, robotic surgery emerges as a viable alternative for pediatric pelvic surgery, offering potential benefits in terms of miniaturization and precision.

Categories

Robotics and Innovations

P163

LAPAROSCOPIC RESECTION OF CHOLEDOCHAL CYSTS AND HEPATICOJEJUNOSTOMY IN CHILDREN: OUR INITIAL EXPERIENCE.

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Introduction: Choledochal cysts (CCs) are congenital dilatations of the biliary tree that slow bile transit from the liver to the duodenum. The primary surgical treatment involves complete removal of the cyst followed by Roux-en-Y hepaticojejunostomy. Currently, laparoscopic excision is the preferred approach. The aim of this study is to report our initial experiences with laparoscopic choledochal cyst excision and Roux-en-Y hepaticojejunostomy in children.

Methods: Children admitted with a choledochal cyst between July 2022 and December 2023 were included in the study.

Results: There were a total of 10 patients, with a mean age of 5.4 years (ranging from 3 months to 10 years). All patients were female. The choledochal cysts were type 1c in five patients and type 4a in the remaining five. Laparoscopic resection of the cyst and hepaticojejunostomy were successful in nine patients. A Roux loop was fashioned extra-corporeally. One case was converted to open surgery due to bleeding. The median operative time was 280 minutes (range: 255-340). There was bile leakage in one patient. The median length of hospital stay was 6.2 days (range: 5-8). The mean follow-up period was 5.4 months (range: 1-15 months).

Conclusion: This report presents the initial experience of our institution with prior experience in laparoscopic surgery. This study demonstrates that Laparoscopic choledochal cyst resection with Roux-en-Y hepaticojejunostomy is a secure and practical alternative for experienced surgeons.

Categories

Gastrointestinal

SO164

LESS IS MORE: DEVIATING FROM THE STANDARD APPROACH AFTER MINIMALLY INVASIVE REPAIR OF AN UPSIDE-DOWN STOMACH IN A 6-YEAR-OLD CHILD - A CASE REPORT ON LAPAROSCOPIC REDO REPAIR.

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Background: An 'upside-down stomach' is the rarest type of hiatal hernia (< 5%). The standard repair technique involves repositioning the stomach, resecting the hernia sac, performing hiatoplasty, and completing Nissen fundoplication. However, in our specific situation, this approach did not prove to be the most optimal method.

Case presentation: A 6-year-old child presented to our clinic with a history of recurrent epigastric pain and failure to thrive (body weight percentile <2%). A fluoroscopic swallowing examination revealed a significant type I hiatal hernia, which intraoperatively turned out to be an upside- down stomach. The initial approach involved a standard repair, involving reposition, resection of the hernia sac, hiatoplasty and Nissen fundoplication. Three sutures dorsal of the esophagus for hiatoplasty and six sutures ventral to the esophagus for hiatoplasty as well as diaphragm reconstruction were necessary. Aberwards a floppy Nissen fundoplication was performed.
Post-surgery, the patient encountered difficulties in swallowing solids, accompanied by vomiting. A contrast study demonstrated delayed passage through the cuff and mild dilation of the distal esophagus above the cuff. Subsequent intervention through gastro-esophagoscopy and dilatation provided only temporary relief, necessitating further intervention. In the subsequent laparoscopic redo repair, the Nissen cuff sutures were removed, resulting in an opening of the ventral part of the fundoplication resembling a 'toupet'-like fundoplication afterwards, and ventral expansion of the hiatus was achieved through the removal of a suture. Under simultaneous gastroscopic control, a sufficient diameter for passage could be demonstrated. This procedure led to the complete resolution of the child's symptoms and to this point includes 6 months of follow-up without recurrent symptoms.

Conclusion: While the surgical repair principles for an upside-down stomach - repositioning the stomach into the abdominal cavity, resecting the hernia sac, hiatoplasty and Nissen fundoplication - are generally considered standard, a case could be made for primary Toupet-fundoplication.

Categories

Gastrointestinal

SO165

SINGLE-PORT COMPARED WITH CONVENTIONAL THREE-PORT LAPAROSCOPIC APPENDECTOMY FOR CHILDREN WITH ACUTE UNCOMPLICATED APPENDICITIS: A SINGLE-CENTER RETROSPECTIVE STUDY.

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Purpose: To compare the clinical outcomes between single-port laparoscopic appendectomy using a rigid endoscope straight working channel (SP-LA) or conventional three-port laparoscopic approach (C-LA) for children with acute uncomplicated appendicitis.

Methods: We retrospectively collected clinical data of patients with uncomplicated appendicitis who underwent SP-LA or C-LA from Jan 2017 to Dec 2020 in our center. The patients' characteristics, perioperative outcomes, and follow-up data were compared between the two groups.

Results: A total of 383 patients were enrolled (SP-LA group, n = 95; C-LA group, n = 288). Both groups had similar hospital stay durations (SP-LA: 1.33 ± 1.2 days, C-LA: 1.36 ± 1.1 days), postoperative fasting times, and frequency of antibiotic administration. The SP-LA group had a significantly shorter operative time compared to the C-LA group (34.76 ± 13.6minutes vs 48.53 ± 17.3 minutes, p>0.01). The average rates of reinterventions (SP-LA: 1.1%, C-LA: 1.7%) and complications (SP-LA: 7.4%, C-LA: 5.9%) were similar in both groups, with wall abscess being the most frequent complication (SP-LA: 4.2%, C-LA: 1.4%, p>0.05).

Conclusion: We conclude that compared with conventional laparoscopic approach, single-port laparoscopic appendectomy may offer a less invasive approach, leading to good postoperative recovery and better cosmesis for patients with uncomplicated appendicitis. Further research should be conducted to evaluate the long-term outcomes, which appear to be similar in both groups.

Categories

Gastrointestinal

P166

MINIMAL ACCESS TENKOFF CATHETER INSERTION IN CHILDREN FOR LONG TERM CONTINUOUS AMBULATORY PERITONEAL DIALYSIS.

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Purpose: An increasing number of children undergo CAPD even in Low/middle Income Countries. We describe the evolution of current laparoscopic catheter insertion technique in children at our centre.

Materials & Methods: A Retrospective study over 4 years was carried out including all children who underwent laparoscopic insertion. The evolution of the procedure was tracked, evaluated with regards to duration, complications and outcomes.

Results: Fourteen cases were operated with median age of seven and male to female ratio of 9:1. Three port laparoscopic PD catheter insertion was carried out with omentectomy. The PD catheter was fixed to the anterior abdominal wall from our fourth case. Median operating time was 117.5 Minutes (including on table catheter trial dialysis by the technician). CAPD was started at median of 14 days. Laparoscopic Herniotomy was combined in two children for patent processus vaginalis. Four developed complications, one had peri-catheter leak, the cause identified as an early large volume dialysate infusion(within 48 hours), one had cuff extrusion 2 years after insertion, which was managed by cuff shaving, wound infection in one, one had catheter migration with block following an episode of peritonitis several months after normal use, which required Laparoscopic CAPD repositioning after adhesiolysis. One expired on fourth postoperative day due to massive aspiration unrelated to surgery. Nine children are on regular follow up with a mean of 14.3months (range =3-36months) and are using catheter for CAPD comfortably at home.

Conclusion: Laparoscopic surgery has the advantage of flexible catheter placement according to intra-abdominal findings to prevent complications like leak, mechanical blockage, wound infection with less pain, better cosmesis, early recovery, less analgesics requirement. Co-morbidities associated with end stage renal disease make laparoscopy a superior option for minimizing complications.

Categories

Urology

P169

LAPAROSCOPIC DIAPHRAGMATIC PLICATION.

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Introduction: The treatment of phrenic paralysis is diaphragm plication. In our Center, this technique is usually performed thoracoscopically and very rarely by laparoscopy. We show the laparoscopic surgery technique and discuss when to use it.

Methods: this technique is shown in an 8-month-old patient, who presented left phrenic paralysis after a heart transplant. In the laparoscopic approach, 4 ports were used: one umbilical port of 5 mm for optics and the rest of 3 mm for instrumentation in the epigastrium, left hypochondrium and right paraumbilical. Initial pressures of 8 and then 6 mmHg CO2 were used, with a flow of 1 L/m and then 2 L/min. To achieve the plication, a barbed suture and Prolene reinforcement stitches were used. The plication was performed following the anteroposterior axis of the hemidiaphragm. We describe the technical details with the surgical video and radiological follow-up. We also comment on the indications for this type of approach.

Results: Using this technique, it is possible to lower the diaphragm to a lower plane and therefore stabilize the upward movement of the paralyzed diaphragm and avoid paradoxical movement of the thorax. Laparoscopic access to the left diaphragm was good, but the greatest difficulty observed was the strong upward tendency of the diaphragm with the use of pneumoperitoneum. The use of barbed suture allows this opposing force to be managed and the tension of the definitive suture to be reduced. From 2010 to 2023, we have performed minimally invasive surgery on 61 patients. Only two of them have had the need to perform it laparoscopically, with the rest been operated on by thoracoscopy.

Conclusions: we recommend using the laparoscopic route when the thoracoscopic approach is contraindicated. The use of a barbed suture associated with discontinuous non-absorbable monofilament suture allows the diaphragm to be plicated effectively.

Categories

Miscellaneous

SO170

LAPAROSCOPIC UPJ PSOAS HITCH: A SIMPLE AND EFFECTIVE SOLUTION IN RARE DIFFICULT CASES OF EXTRINSIC UPJ OBSTRUCTION; OUR EXPERIENCE.

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Introduction: description of the technique and results of the laparoscopic psoas-hitch in extrinsic ureteropelvic junction obstruction (UPJO) by crossing vessels with small/intrarenal pelvis.

Materials and methods: between 2015 and 2023 6 psoas-hitch procedures were performed. Our patients (4 females, 2 males, average age 11 years) presented with flank pain and recurrent vomiting, due to a moderate intermittent hydronephrosis. A full diagnostic work-up with diuretic enhanced ultrasound, MAG-3 scintigraphy and MR angiography was performed: UPJO by crossing vessels was demonstrated in all cases. Maximum pelvis diameter was 3-3,5 cm, with a predominant intrarenal extension in 3 cases. 2 patients showed a moderate loss of function. A transperitoneal laparoscopy was performed, identifying UPJO by crossing vessels and a small pelvis. Intrinsic UPJO obstruction was excluded. Diuretic test resulted positive, but, due to its anatomical features, pelvis wasn't amenable to vascular-hitch procedure in all cases. One patient showed even greater disproportion between very represented vessels and an intrarenal pelvis. The procedure consisted in the isolation of the crossing vessels and caudal and posterior mobilization of the UPJ, which is sutured to the psoas muscle with 2-3 stitches in an unobstructed position.

Results: Mean duration of procedure 60 minutes, mean length of hospital stay 2 days. No intra/post-operative complications were registered. In the mean follow-up period of 6 years (10 months – 8 years) resolution of symptoms and of the hydronephrosis was recorded, with pelvic diameter < 1 cm in 3 patients. One patient complained about transient flank pain, completed resolved 6 months after the procedure. Renal function was stable.

Conclusions: our experience in the treatment of extrinsic UPJO confirms that psoas-hitch procedure proves to be effective also in the long term. Cases of anatomical features that make the vascular hitch unfeasible can be treated with psoas-hitch, with good persistent result in our series.

Categories

Urology

P171

SCALING DOWN LAPAROSCOPIC APPENDICECTOMY IN CHILDREN.

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Introduction: Laparoscopy is the gold standard approach for appendicectomy and leads to improved outcomes without an increase in complications. In our centre we aim to complete all appendicectomies laparoscopically where possible. We describe our experience in laparoscopic appendicectomy in patients younger than 8 years of age.

Methods: A retrospective review of a prospectively collected database of all laparoscopic appendicectomies from March 2020- Dec 2023 in a single paediatric surgical centre was performed. Data were collected for demographics, intraoperative details, histology and complications. Data is presented as median and range. Categorical data were compared using Fisher's exact test and continuous variables with student's T-test with $P<0.05$ considered statistically significant.

Results: A total of 139/519 appendicectomies were performed in patients under 8 years during the time period. There were 91(65%) males and 48 (35%) females. The median age was 5 years (1-7) and median weight 21.6 Kg (12.25-43.8) There were 10 (7.2%) planned open appendicectomies (6 due to COVID restrictions). 129/139 (92.8%) were attempted laparoscopically. Of these, 3 required conversion to open operation giving a success rate of laparoscopy of 97.3%. 4/139 (2.8%) patients had normal histology. 78/139 (60.4%) patients had complex appendicitis (defined as intention to treat with prolonged antibiotics). Of those patients under 8 years undergoing laparoscopic appendicectomy, 11 patients (8.5%) had a 5mm optical port at the umbilicus with 3mm instruments, 78(60%) 3 5mm ports and 40(31%) a 12mm umbilical port with 5mm instruments. The only factor which was found to be significantly associated with conversion to open operation was presence of a mass ($p=0.006$). 2/129 (1.6%) of patients who had a laparoscopic procedure required a laparotomy after laparoscopy for adhesive small bowel obstruction.

Conclusions: Laparoscopy is safe and effective in all ages. Scaling down using 5 or even 3mm instruments is achievable with good outcomes.

Categories

Gastrointestinal

P172

MODIFIED LAPAROSCOPIC PERCUTANEOUS INTERNAL RING SUTURING TECHNIQUE: FASTER, EASIER, AND SAFER.

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Introduction: Our aim in this study is to introduce an easier, faster, and safer modification of the PIRS technique in inguinal ring (IR) closure.

Methods: This modified technique was first introduced to the abdominal cavity (AC) using an 18-gauge green angiocath with its sheath. The peritoneum was punctured. Then, needle was removed but the sheet was not. We pushed forward a hard but rather blunt-ended wire made of 20-gauge steel wire into the sheet until the just below the peritoneum. Subsequently, with this steel wire, the peritoneum was separated from the vascular structures and vas deferens by dissection slowly and gently. Meanwhile, the vas deferens and all vascular structures remain posterior. This steel wire is advanced further and the peritoneum is punctured. Angiocath sheet is advanced again until it enters beyond the point where the peritoneum was punctured. Wire was then removed. Loop suture was advanced through the sheet into AC. Thus, a loop was created in AC. Afterwards, the same procedures were performed a second time and the normal non-loop suture was passed through the angiocath sheet. This suture was advanced through the internal loop. Loop was then withdrawn. Thus, IR was closed percutaneously.

Results: A total of 115 patients (M/F=90/25) with 146 ring were operated through this method. There were no conversion to open. No recurrence was observed in early term follow-up. No major hematoma, vascular injury, or vas deferens injury were reported.

Conclusion: This technique diverges from traditional PIRS in its use of an entirely blunt wire, which minimizes the risk of vascular and vas deferens injury. Unlike classical PIRS, where the IR closure involves jumping the corners of the inguinal ring, our method encompasses a complete encircling of the inguinal canal. As a result, we achieve a thorough closure and more secure, efficient repair of IR.

Categories

Miscellaneous

P173

PERCUTANEOUS IMAGING AND INTERNAL RING SUTURING (PIIRS) TECHNIQUE FOR LAPAROSCOPIC INGUINAL HERNIA REPAIR.

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Introduction: The PIRS technique was first described by Patkowski et al. Our aim in this study is to describe the ultra-mini invasive (full-percutaneous) technique as an alternative to the inguinal ring closure method of Patkowski et al.

Methods: In this study, we adapted the percutaneous inguinal hernia repair procedure originally developed by Patkowski and colleagues, who utilized a 5 mm trocar and scope after entering the abdominal cavity using the open method by Hasson et al. However, our approach differed as we did not employ a 5 mm trocar. We first accessed the abdominal cavity via the subcostal area using a 22-gauge angiocath under ultrasound guidance. To ensure the angiocath tip was correctly positioned within the abdomen, we applied the water-droplet technique. We then established pneumoperitoneum by initially injecting CO2 using a syringe, followed by an insufflator. Subsequently, we entered the abdomen with a 16-gauge angiocath, again under ultrasound guidance, which was made safer by the existing pneumoperitoneum. After removing the needle of the 16-gauge angiocath, we introduced a 1 mm scope through the sheath for imaging. The inguinal hernia repair was conducted using this mm scope, following the PIRS technique. Upon completion of the repair, we evacuated the CO2 from the abdomen and removed the 16-gauge sheath. As the procedure did not involve any fascial or skin incision, it was concluded without the need for suturing.

Results: A total of 32 patients were operated. No recurrence was found. The mean operative time were 12 minutes for unilateral and 17 minutes for bilateral ing hernia. There were no conversion to open. The cosmetic results were excellent.

Conclusions: The value of this technique is highlighted by its entirely percutaneous approach, significantly reduced operating time, and its provision of superior cosmetic results.

Categories

Miscellaneous

LO174

COMPARISON OF TWO DIFFERENT ENDOSCOPIC TREATMENTS OF URETEROCELE: A SINGLE CENTER RETROSPECTIVE STUDY.

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Purpose/Introduction: Ureterocele is a congenital malformation characterized by cystic dilatation of the distal part of the ureter that affects 1:4000 children. Our aim is to investigate the best endoscopic technique that should be used to correct the ureterocele comparing transuretral incision (TUI), in which the opening of the ureterocele is done with cold or hot blade, and Watering-Can puncture (WCP), where a diode laser fiber is used to make multiple small holes in the ureterocele's wall.

Patients and Methods: We present a single-center retrospective and observational study among patients treated for ureterocele from 2013 to 2022 with a minimal one-year follow-up. Anamnestic data and all clinical, imaging, operative data and follow-up results were collected from medical records. We analyzed sex, age, laterality, presence of associated diseases and of vesicoureteral reflux (VRU). Patient were divided in 2 groups according to type of endoscopic procedure performed and year of implementation of the procedure; group I: TUI from 2013 to 2018, group II: WCP from 2019 to 2022. The efficacy of the procedures were evaluated in terms of disappearance of ureteral obstruction, occurrence of VRU with urinary tract infection (UTI) and need of reintervention.

Results: A total of 24 patients with 25 ureteroceles were treated: 12 patients had left ureterocele (50%), 11 right (45.83%) and 1 bilateral (4.17%). 11 patients were males (45.83%) and 13 females (54.17%). Median of age at the surgery was 2 months and 2 days (Range: 6d – 15y 5m). In 14 patients (58%) a duplex-system ureteroceles was found. Fourteen patients (58%; 15 ureteroceles) belong to group I (9 females) and e 10 patients to group II (4 Females).
Of the total ureteroceles Treated, 3 needed vescico-ureteral reimplantation surgery for post-operative VRU with UTI. All these patients belong to group I , all were females and affected by duplex system ureteroceles. Two more patients underwent to upper pole heminephrectomy for poorly functioning upper pole. Based on our experience, use of TUI, female sex and the presence of duplex system ureteroceles were associated, although not statistically significantly, with a higher incidence of post-treatment VRU.

Conclusion: Despite the comparable treatment efficacy of the two endoscopic techniques, we prefer WCP to TUI given its lower rate of post-operative VUR.

Categories

Urology

SO175

COMPARISION OF THE SURGICAL TECHNIQUES IN THORACOSCOPIC REPAIR OF CONGENITAL DIAPHRAGMATIC HERNIA.

Süleyman Arif Bostancı[1], İrem Akbaş[1], Selin Çayhan[1], Aslınur Abay[1], Elif Emel Erten[1], Can İhsan Öztorun[2], Ahmet Ertürk[2], Sabri Demir[1], Müjdem Nur Azılı[2], Emrah Şenel[2]

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Purpose: Various surgical techniques are used in thoracoscopic repair. We aimed to compare the differences in surgical techniques used in our clinic.

Methods: The records of the patients who underwent thoracoscopic CDH repair in our clinic between October 2019 and September 2023 were reviewed. Thoracoscopic repairs were divided into three groups: those who underwent intracorporeal suture (ICS) repair, those who underwent percutaneous suture (PIRS) repair, and those who underwent both techniques together. Operative time, postoperative intubation time, hospital stay, complications were compared between groups.

Results: Thirteen patients underwent PIRS, ten underwent ICS repair, and seventeen underwent both techniques together. The mean operative time was 84.62±13.13 minutes in the PIRS group, 106±24.12 minutes in the ICS group, and 87.06±17.77 minutes in the PIRS and ICS combined group. In the PIRS group, the mean postoperative intubation time was 4.54±3.86 days, the ICS group, it was 5.10 ± 2.72 days. In the PIRS and ICS combined group, it was 4.18±2.74 days. The mean hospitalization time was 13.92±3.88 days in the PIRS group, 20.1±5.99days in the ICS group, and 15.71±5.79days in the PIRS and ICS combined group. The study found a statistically significant difference between the groups in operation time (p=0.01) and hospitalization time (p=0.02). However, there was no significant difference in postoperative intubation time (p=0.76). Recurrence rates were 15.4% in the PIRS group, 10% in the ICS group, and 5.9% in the PIRS and ICS combined group. There was no statistical difference in recurrence rates between the groups.

Conclusions: The study suggests that the PIRS technique can be safely and effectively used in appropriate cases for thoracoscopic CDH repair. In cases of large defects where the PIRS technique is inadequate, the PIRS and ICS techniques can be used. These approaches result in shorter operative time, hospitalization.

Categories

Thorax

SO176

MINIMALLY INVASIVE SURGERY FOR CONGENITAL LUNG MALFORMATIONS: EARLY EXPERIENCES.

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Introduction: Despite their rarity, CLMs are being diagnosed with increasing frequency since perinatal diagnosis has become possible. The aim of our study was to examine our diagnosis, follow-up, and clinical outcomes for thoracoscopic resection of congenital lung malformations (CLM), which are complex abnormalities of lung development.

Methods: This retrospective review analysed patients with colorectal liver metastasis (CLM) who underwent minimally invasive resection at our institution between 2019 and 2023.The investigation included demographic characteristics, operative and postoperative follow-up, complications, and pathological examinations.

Results: Of the 41 patients with CLM, 83% underwent thoracoscopic resection. There were 26 male cases (63.4%) and 15 female cases (39.6%). Out of the total cases, clinical diagnosis was present in 24 cases (58.5%), pulmonary sequestration in eight cases (19.5%), congenital lobar emphysema in four cases (9.7%), bronchogenic cyst in two cases (4.9%), and hybrid lesion in three cases (7.3%). The rate of prenatal diagnosis was 63.4% (n=26). Thoracoscopic treatment was initiated and completed in 83% of patients. Ten patients underwent right upper lobectomy and ten patients underwent right lower lobectomy. When evaluating patients for postoperative complications, we found that five patients had a persistent air leak lasting more than five days, and three patients required re-thoracoscopy for air leak repair.

Conclusion: Minimally invasive surgery has demonstrated improved surgical dissection, better cosmetic outcomes, and a long-term reduction in postural disturbances associated with thoracotomy. Our clinical experience examines the safety and efficacy of the thoracoscopic approach to congenital pulmonary malformations. We believe that minimally invasive surgery is an effective treatment for children with CLM.

Categories

Thorax

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MACRO-CYSTIC CONGENITAL PULMONARY AIRWAY MALFORMATION AND PLEUROPULMONARY BLASTOMA: IS THE RISK OF MALIGNANCY HIGHER THEN WE THINK?

Federico Beati[1], Laura Valfrè[1], Gaia Paolella[2], Giulia Burini[2], Maja Velimirovic[1], Maria Debora De Pasquale[1], Paola Francalanci[1], Pietro Bagolan[1], Andrea Conforti[1]

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Introduction: Management of asymptomatic congenital pulmonary airway malformation (CPAM) is debated, with routine resection usually advocated to reduce the risk of recurrent infections. Diagnostic overlapping and/or association between CPAM and type I pleuropulmonary blastoma (PPBt1) has been reported (Stocker's types 1 and 4), nonetheless oncological prevention is not usually considered as an indicator for surgery. Aim of present study was to evaluate the association between CPAM and PPB in our series.

Methods: All patients diagnosed with CPAM underwent lobectomy from 2011 to 2023 were analyzed. Data collected were: demographics, prenatal diagnosis, age at surgery, surgical technique and histopathologic results of resected lung specimens. CPAM were classified according to Stocker's classification. In case of PPB suspicion, DICER-1 gene mutation was investigated. Incidence of PPB was calculated.

Results: 140 patients were included (69 female, 71 male). Prenatal diagnosis was present in 136/140 (97%). Nine fetuses had prenatal treatment: 2 thoraco-amniotic shunt and 7 maternal steroid therapy. Mean gestational age was 37.5 (range 25-41) weeks, mean birth weight 3.33 (range 2.32-4.44) kg. Mean age at surgery was 3.9 (range 0-12) months, 8 patients were operated on in emergency at birth. Twenty-two (16%) patients underwent thoracoscopic lobectomy, 118 (84%) open lobectomy. Overall incidence of macro-cystic CPAM was 29/140 (21%): among these CPAM type 1 was found in 25/140 (18%) patients, CPAM type 4/PPBt1 "regressed" in 4/140 (2.8%). Considering only macro-cystic CPAM, incidence of type 4/PPBt1 was 4/29 (14%). DICER- 1 mutation was negative in all patients.

Conclusions: Preoperative differential diagnosis between CPAM types 1, 4 and PPB can be challenging or not-possible. The high incidence of histologic CPAM type 4/PPBt1 in our population suggest the need for an operative approach and anatomical lobectomy, specifically in cases of macro-cystic lesions.

Categories

Thorax

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THORACOSCOPIC LOBECTOMIES IN SMALL INFANTS: A REPORT FROM A TERTIARY HIGH-VOLUME CENTER.

Federico Beati, Laura Valfrè, Chiara Iacusso, Barbara Daniela Iacobelli, Federico Scorletti, Stefania Sgro', Fabio Fusaro, Pietro Bagolan, Andrea Conforti

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Introduction: Thoracoscopic surgery for congenital pulmonary airway malformation (CPAM) is a well-known technique and has been increasingly utilized, although the high complexity of the procedure. Here we report our experience in anatomical thoracoscopic pulmonary resections for asymptomatic CPAM compared to thoracotomic lobectomies in infants under 4 months of age.

Methods: We performed a case control study (1:2) of all patients who underwent thoracoscopic lobectomy for CPAM/intra-lobar sequestration since June 2022. Patients who underwent thoracoscopy were compared with historic cohort operated by thoracotomy. Outcomes analyzed included: operative time, intra and post-operative complications (≥Clavien Dindo grade III), conversion rate, postoperative intensive care unit admission rate, length of stay (LOS), duration of chest tube drainage.

Results: Twenty-one infants underwent thoracoscopic lobectomies were compared with 42 controls. Median age at surgery was 3.5 months in both groups p=0.98. Weight at surgery was similar between two groups: 3.2 (2.4-3.7) vs. 3.1 (2.2- 3.6); p=0.82. There were no differences in intraoperative and post-operative complications: 1/21 vs. 1/42 p=0.2; 1/21 vs. 2/42 p=0.34 respectively. No differences were observed also considering operative time: 150 (126-182) vs. 149 (124-177) minutes; p=0.7. Four (20%) thoracoscopic procedures were converted to thoracotomy. NICU admission rate was similar between two groups: 2/21% vs. 6/21%; p=0-2 as well as LOS: 5 (4-7.2) days vs. 6 (4-8); p=0.9. Duration of chest tube drain was statistically shorter in thoracoscopic group: 3 (1-10) days vs. 5 (0-22) days, p=0.03.

Conclusions: Thoracoscopic lobectomies in small babies are usually challenging and biased by learning curve. Nonetheless, our initial experience reaffirms that thoracoscopy represent a valid alternative to open surgery in asymptomatic small infants. Although the high complexity of the procedure, thoracoscopy reduces the need and length of chest drain, with similar operative time, complication rate and hospital stay.

Categories

Thorax

SO179

OUTCOME OF RECURRENT TRACHEOESOPHAGEAL FISTULA TREATMENT AFTER ESOPHAGEAL ATRESIA REPAIR.

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Introduction*:* recurrent Tracheoesophageal Fistula (rTEF) is a complication of Esophageal Atresia (EA), leading to severe respiratory symptoms. RTEF can be treated via an endotracheal (ET) or surgical treatment (ST). The efficacy of the different techniques varies in literature. In this study, we present the outcomes of rTEF after EA correction.

Methods*:* From 2000 untill 2023, patients with EA (n=251) underwent thoracoscopic EA correction v at the Wilhelmina Children's Hospital in Utrecht. Of these patients, all EA patients with rTEF were evaluated. RTEF was corrected via ET, (n=10, endotracheal brushing with trichloroacetic acid, laser or fibrin glue) or ST (n=10, thoracoscopy, thoracotomy, or cervical approach. Success- and recurrence rates, and complications were extracted from the electronic patient files and collected in our EA database. Nonparametric variables were expressed as median with interquartile ranges (IQR).

Results*:* In total, 20/251 (8%) had developed an rTEF after EA correction. For 10/20 (50%) patients, primary ET was performed, with a mean number of 2.1 procedures (3/10 had 1 ET, 3/10 had 2 ETs, 4/10 had 3 ETs). In 8/10 patients, ET failed, so they underwent secondary ST. The mean number of secondary STs was 1.1 (all through thoracoscopy, except for 1 required a thoracotomy). For 10/20 (50%) patients, primary ST was performed, with a mean number of 1.3 procedures. Primary ST through thoracoscopy was performed in 9/10 patients and one patient underwent a cervical approach. The primary thoracoscopic repair had a success rate (absence of a recurrence after 1 procedure) of 78% (7/9), with no conversions. Secondary thoracoscopy and secondary thoracotomy were both performed in 1 patient respectively.

Conclusion*:* Thoracoscopic correction of rTEF after EA correction has a high success rate. Similar to other studies in literature, the Utrecht success rate of the endoscopic approach for rTEF treatment is poor.

Categories

Thorax

LO180

USE OF A VASCULAR CLAMP TO FACILITATE THORACOSCOPIC DIAPHRAGMATIC PLICATION IN CHILDREN.

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Purpose: Indications for diaphragmatic plication remain rare in children. A vascular clamp can be used to facilitate diaphragmatic suturing and to allow suturing with a well-distributed tension on the diaphragm. This surgical approach and its results are described in this study.

Methods: This single-centre retrospective study included children who underwent a diaphragmatic plication for diaphragmatic paralysis or diaphragmatic eventration using a curved vascular clamp between 2010 and 2022 after IRB approval. The vascular clamp was placed in a basithoracic and lateral position through an additional incision. The redundant diaphragm was introduced into the clamp and its suture was carried out with separate stitches of 2/0 non-absorbable suture along the clamp and reinforced by an overlapping suture of the diaphragmatic excess, which was not resected.

Results: Eleven children were included with a median age at surgery of 7.4 months [1 day; 32 months]: 3 congenital diaphragmatic eventrations (including 1 recurrence) and 7 diaphragmatic paralysis (iatrogenic after cardiac surgery in 5, cervical lymphatic malformation in 1, and idiopathic in 1). In 4 patients the diaphragmatic plication could be carried out completely by thoracoscopy: 2 congenital eventrations (1 and 3 days of life) and 2 diaphragmatic paralyses after cardiac surgery. The median operating time was 138 minutes [106-166]. The first patient operated with this technique presented an immediate postoperative recurrence due to the use of staples for diaphragmatic plication. The median follow-up was 4.5 years [0.4-10]. No other recurrences were noted, 8 are asymptomatic and 2 remain respiratory symptomatic due to their cardiac disease.

Conclusion: The use of a vascular clamp to facilitate diaphragmatic plication is a safe and effective approach, particularly beneficial in cases of thoracoscopy.

Categories

Thorax

SO181

SURGICAL OR ENDOTRACHEAL TREATMENT OF RECURRENT TRACHEOESOPHAGEAL FISTULA: A SYSTEMATIC REVIEW.

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Background: Recurrent tracheoesophageal fistula (rTEF) can be a therapeutic challenge. The ideal treatment option is still unclear. RTEF can be treated surgically through thoracotomy or thoracoscopy, or endoscopically via endotracheal de-epithelialization and/or sealants.

Aim*:* The aim of this study was to systematically review the success and complication rate of endoscopic (ET) and surgical treatment (ST) options for rTEF, in order to determine which treatment approach has the best outcome.

Methods: PRISMA guidelines were followed. PUBMED, EMBASE, and the Cochrane Library were searched from 2000 until June 2023. Studies were independently screened and analyzed by two reviewers.

Results: A total of 29 papers, describing a total of 791 patients with rTEF, were eligible for inclusion. Twenty four of the included studies were retrospective cohort studies, 4 were case series, and 1 was a prospective study. The median success rate was 84% [40-100 %] for ET, and 97% [67%-100%] for ST (thoracotomy and thoracoscopy). The mean number of procedures was 2,0 [1,0-3,8] for ET and 1,1 [1,0-1,2] for ST. The most common complications were anastomotic strictures and leakage for ST and re-recurrence and infection for ET. However, for ET complication rates were low.

Conclusion: Surgical correction of rTEF has the best outcome, with a lower mean number of procedures. Endoscopic rTEF correction, however, leads to fewer complications and average success rates. Therefore, it may be considered to start with ET first, and if ET fails, the option to perform ST is available.

Categories

Thorax

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LAPAROSCOPIC TRANSANAL ENDORECTAL PULL-THROUGH TECHNIQUE FOR RECTOSIGMOID HIRSCHSPRUNG'S DISEASE: SHORT-TERM RESULTS.

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Purpose: The purpose of this study is to evaluate short-term outcomes in patients with rectosigmoid Hirschsprung's disease (RHD) who were treated with laparoscopic-transanal endorectal pull-through (LA-TERPT).

Methods: The datas of patients with RHD admitted to our center between January 2020 and December 2023 were retrospectively evaluated. The study evaluated demographic, clinical, and operative datas. Follow-up assessments were conducted at two weeks, one month, and three months post-operation, and then every six months.

Results: The LA-TERPT technique was used in 10 patients with RHD. Of these patients, 80% were male, with a mean age of 16.6 months (range: 1-40). Two patients were admitted with stomas that were created at another medical center. During the operation, colostomy was not required for either patient, and the median length of bowel resection was 18 (10-28) cm. No conversions were necessary, and the median surgical time was 120 (90-160) minutes. There were no intraoperative complications. The mean length of hospital stay was 5.3 (4-7) days. In the postoperative daily defecation frequency ranged from 5 to 11 times, decreasing to 4 to 8 times within 6 months, and further decreasing to 2 to 3 times after 6 to 12 months. The mean follow-up period was 12 (range 4-42) months. Postoperative complications included anal stenosis in two cases, perianal dermatitis in three cases, enterocolitis in two cases, soiling in two cases, and constipation in three cases. Patients with constipation were treated with laxatives, while patients with soiling were treated with laxatives and rectal irrigations. One patient was diagnosed with hypoganglionosis based on a histopathological report. This patient underwent redo surgery using the Swenson technique due to persistent obstruction symptoms.

Conclusion: The LA-TERPT technique is a safe and effective surgical method for treating RHD. The short-term outcomes are good, and the rate of postoperative complications is low.

Categories

Gastrointestinal

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PRELIMINARY EVALUATION OF ROBOTIC PEDIATRIC UROLOGIC SURGERIES IN THE UNITED ARAB EMIRATES: A PRIVATE HOSPITAL STUDY.

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Robotic-assisted minimally invasive procedures are gaining traction globally, yet their implementation in pediatric surgery remains limited in the United Arab Emirates (UAE), an area where conventional laparoscopic methods have been more prevalent. This study addresses the gap in existing research, presenting the first evaluation of pediatric robotic urologic surgeries in a private hospital setting in the UAE.

The study aims to assess the feasibility and outcomes of robotic-assisted pediatric urologic surgeries in private healthcare settings, specifically focusing on both reconstructive and excision procedures. Unlike prior research primarily conducted in Europe and North America, this investigation concentrates on the unique challenges and potential benefits within the regional context.

Our study involves the cases of pediatric robotic laparoscopic surgeries in a private healthcare setting between 2019-2023. More specifically focusing on two separate cases involving robotic excision surgeries for the resection of Wilm's tumor via nephrectomy and right adrenal gland neuroblastoma via adrenalectomy.

Our study reveals multifaceted advantages associated with robotic-assisted laparoscopic pediatric procedures. Patient-related benefits align with existing literature, showcasing shortened inpatient stays and reduced operating times. Beyond patient-related advantages, our study also highlights benefits from the surgeon's perspective, including improved manual dexterity and enhanced vision, providing advanced tools to navigate the intricacies of robotic pediatric surgeries more effectively. Although limitations related to trocar sizes, positioning, and system design are persistent, outcomes are comparable to traditional approaches.

In conclusion, our findings aim to contribute to the limited English-language literature in the Middle East, shedding light on the potential and challenges of implementing robotic-assisted surgeries in pediatric cases, particularly in a private hospital setting. The findings not only underscore the feasibility of robotic technology in diverse pediatric urologic, or not, interventions but also emphasize the need for further exploration in this evolving field.

Categories

Robotics and Innovations

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COMPARISON OF ROBOT-ASSISTED AND LAPAROSCOPIC PYELOPLASTY IN THE TREATMENT OF PYELOURETHERAL JUNCTION OBSTRUCTION IN CHILDREN.

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Introduction: The purpose is to evaluate the perioperative and functional outcomes of robot-assisted and laparoscopic pyeloplasty using the new generation robot Versius.

Methods: A retrospective data on all patients with pyeloureteral junction obstruction who underwent Anderson-Hynes pyeloplasty using robot-assisted or laparoscopic technologies, performed in a specialized pediatric surgical center, 2020-2023. N= 34 patients met these criteria. Robotic operations were performed using the new Versius robotic platform from CMR (Cambridge Medical Robotics, UK). The study recorded patients perioperative parameters related to demographics, surgical details, and early and long-term outcomes.

Results: All surgical interventions were considered successful based on the decrease in the size of the pelvis after surgery. Robot-assisted procedures were performed in n= 10/34, and laparoscopic approach in n= 24/34. The mean age of patients was significantly lower in the laparoscopy group (4.0 [1.9;6.8] years vs. 11.0 [7.0;14.5]; p=0.001). The mean weight (17.0 [11.5; 26.8] vs. 54.6 [29.1; 63.0]; p = 0.003). The gender composition in both groups was comparable (p=0.252) with a prevalence of male patients. During the study, no statistical difference was found between the length of stay of patients in the intensive care unit (115.0 [95.0; 190.0] min. vs. 117.5 [95.0; 161.3] min. There was a significant reduction in hospitalization in favor of the robot-assisted surgery group (p<0.001), with a median of 7.0 [6.0;7.0] days vs. laparoscopy group were discharged after 14 [13.0; 14.0] days. Early or late postoperative complications in the comparison groups were not registered.

We conclude that robotic pyeloplasty is a safe and effective technique for the treatment of pyeloureteral junction obstruction. The robotic approach in the treatment of hydronephrosis in children is accompanied by the benefits of earlier recovery after surgery, which is confirmed by a reduction in the length of stay of patients in the intensive care unit and the duration of hospitalization.

Categories

Robotics and Innovations

LO188

PRELIMINARY EXPERIENCE WITH ROBOT-ASSISTED CONTINENT URINARY DIVERSION IN PAEDIATRIC PATIENTS.

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Introduction: Continent urinary diversion could take advantage of the benefits of robotic surgery. The aim of the study is to describe our experience about this surgical intervention performed by robot-assisted approach in paediatric patients.

Methods: The design is single-centred and retrospective. All the patients that underwent a robot-assisted continent urinary diversion at our Paediatric Department between January 2022 and December 2023 were included. Clinical variables were extracted from surgical reports. Adverse events more than grade II according to Clavien-Dindo classification were considered to be relevant.

Results: Seven patients (three males, four females) were included. The median age at intervention was 15 years (range 11-26 years). The intervention was performed by using DaVinci® Xi robotic platform. Three robotic 8-mm robotic trocars and one 5-mm conventional trocar were inserted in the umbilic, in both flanks and left hypochondrium respectively. In six patients an appendiceal conduit was fashioned according to Mitrofanoff's technique and in one patient an ileal conduit was fashioned according to a tapered Monti's technique. In three patients an augmentation enterocystoplasty was performed during the same intervention. After a median follow-up of 10,8 months (range 3,0-16,7 months), three patients (43%) suffered from suprafascial stenosis at the skin level of the external orifice. This complication was mostly due to poor adherence to the self-catheterization protocol and was managed by dilations under general anaesthesia. No subfascial or conduit-bladder anastomosis stenosis were reported. None of the patients reported a channel incontinence or required a surgical revision of the conduit.

Conclusions: Even though this intervention might require experienced skills in paediatric urology, robot-assisted approach could help the surgeon perform a continent urinary diversion. Moreover, a scheduled follow-up is crucial to reduce the complications due to self-catheterization.

Categories

Urology

P189

FLEXIBLE ENDOSCOPY GUIDED TRANSGASTRIC ABSCESS DRAINAGE: A CASE REPORT.

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Introduction: Living donor liver transplantation is a life-saving operation in patients with end-stage liver failure. Biloma or abscess formation due to bile leakage is a defined complication in end-to-end bile anastomosis transplantation. There are different techniques to drain the abscess. In this presentation, biloma and drainage technique developed in a 16-year-old male patient who developed liver failure secondary to HCV infection in the 1st month post-transplant is presented.

Patients and methods: The patient, aged 16 years and 45 days after transplantation, presented with abdominal pain and vomiting. In the computed tomography, a collection of 11x8 cm, located in the portal hilus, extending cranially to the medial vena cava inferior (BMI) and caudally to the mesentery root was observed. Drainage was planned with a flexible endoscope since sonographic drainage was not possible. It was observed that the abscess was identified from the posterior wall of the stomach when entered with a flexible endoscope. A sclerotherapy needle passed through the endoscope from the point where the identification was most evident, and 390 cc of abscess contents were evacuated by being monitored with USG at the same time with flexible endoscope.

Results: In the control ultrasonography performed at the postoperative 1st week of the patient, it was observed that the bilioma completely regressed. No recurrence was observed in the 6-month follow-up.

Conclusion: In cases where percutaneous drainage is not suitable for patients with bilioma, flexible endoscopy-guided transgastric abscess drainage may be considered among the options as a less invasive and safe method that can be preferred instead of laparoscopic drainage or laparotomy.

Categories

Gastrointestinal

P190

OPEN VERSUS LAPAROSCOPIC REPAIR OF INDIRECT INGUINAL HERNIA.

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Introduction: Inguinal hernia is one of the most common surgical conditions in infants and children. Traditionally, it is operated upon through an open inguinal incision. However, with the introduction of laparoscopic repair in 1990, opinion of scientific community became divided, concerning the best method of pediatric herniotomy. Minimal invasive surgery is being increasingly applied to pediatric inguinal hernia repair. In younger children, however, open repair remains preferred in many centers, due to concerns related to anesthesia and technical challenges.

Methods: We performed a retrospective study upon two groups of patients of different ages and gender; they were diagnosed with inguinal hernia which was operated in our hospital. One group had open surgery, the other the laparoscopic approach. We compared the two groups starting with demographic data, operative time, postoperative complications, hospitalization costs, aesthetic appearance, recurrence and technical challenges.

Results: Open repair showed some advantage, compared to laparoscopic herniorrhaphy in our hands, regarding a few aspects. The group of patients who benefited from open repair had less operative time due to less technical challenges, less hospitalization days with less hospitalization costs, and less postoperative complications. We didn't find any difference between the two groups in terms of aesthetic appearance.

Conclusions: Total postoperative complications were significantly reduced in open surgery, especially for major postoperative complications in male children, on short term follow-up. Laparoscopic **herniorrhaphy** is suitable for recurrent inguinal hernia and MIS is certainly an alternative worth considering in some situations, but only after the operator has achieved the learning curve. Long-term complications after MIS still remain to be investigated.

Categories

Miscellaneous

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LAPAROSCOPIC MANAGEMENT OF CHOLEDOCHOLITHIASIS COMPLICATED WITH CHOLANGITIS IN A SIX MONTH OLD PREMATURE INFANT.

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Introduction: Choledocholithiasis which is often symptomatic, is rarely encountered in infants and is documented in only a limited number of published reports. Choledocholithiasis can result in severe complications, such as cholangitis, or gallstone pancreatitis, which often necessitates intervention. Endoscopic retrograde cholangiopancreatography(ERCP) is the standard management technique of choledocholithiasis and cholangitis in adults. ERCP is technically challenging in infants because of their small size, and surgical management may be required.It was described the technical aspects of laparoscopic management of an infant with choledocholithiasis and developed cholangitis

Patients and methods: 6month-old, 6kg female patient was born at 28weeks with 580g. The patient presented with fever, restlessness, vomiting and acholic stools for a week. Ultrasonography revealed a 7mm stone in the common bile duct and dilated common bile duct, and intrahepatic bile ducts were observed. Laboratory studies showed elevated liver function tests. Consultation with gastroenterologists experienced in pediatric ERCP and interventional radiologists revealed that ERCP and percutaneous trans-hepatic(PTH) interventions were not options for treatment given the infant's size. Therefore, the decision to proceed with an emergency laparoscopy was made. Laparoscopic cholangiography via cystic duct showed dilated common bile duct and intrahepatic bile ducts and a filling defect in the distal common bile duct with a narrow passage to the duodenum. The 3F Fogarty catheter was advanced to the duodenum, and the ampulla was dilated by inflation of the balloon of the Fogarty catheter. After washing the biliary system with saline, cholangiography showed free passage to duodenum without a filling defect. The cholecystectomy was completed.

Results: The symptoms of cholangitis resolved immediately. The patient was discharged on the fifth postoperative day and doing well during the six-month follow-up.

Conclusion: Our case outlines a minimally invasive, laparoscopic technique to manage choledocholithiasis in small infants when size limitation prevents standard ERCP or PTH management.

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Gastrointestinal

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LAPAROSCOPIC KASAI PORTOENTEROSTOMY – OUR EXPERIENCE AT A TERTIARY CARE INSTITUTION.

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Introduction: The laparoscopic Kasai operation stands as one of the most intricate laparoscopic procedures, and its efficacy in treating biliary atresia remains a subject of controversy till date.

Methods – Our cases: We recently performed Laparoscopic Kasai portoenterostomy for four patients. The age of these patients ranged from 38 to 147 days (mean-101.25 days). Four ports were inserted: a 12mm infraumbilical port, two 3mm ports in lumbar regions, and another 3mm port in the epigastrium for liver retraction, for better visualisation of the porta. Intra-operative Indocyanin green fluorescence was used for one case, revealing patchy fluorescence in the liver and none in the biliary remnant. Laparoscopic Hilar dissection was performed. After biliary remnant excision, fluorescence was observed at the porta. Jejunal loop division and extra-corporeal jejuno-jejunal anastomosis were performed through the infraumbilical incision using endo staplers. Intracorporal End-to-side porto-enterostomy was then carried out. All patients had a smooth immediate postoperative period. Mean pre-operative bilirubin level was 15.15mg/dl (8.8mg/dl-24mg/dl). Two out of four patients have been followed up for more than 1 year. One patient is awaiting 3 month visit and one is lost to follow up. Although 2/4 patients experienced one episode of cholangitis, conservatively managed, they are currently anicteric and asymptomatic at 2.5 years and 1 year follow-up. Total bilirubin levels during the latest follow-up visits are 3.36 mg/dl and 2mg/dl respectively. Laparoscopic Kasai porto-enterostomy is recognised for minimizing blood loss, reducing the need for opioids and for . This contributes to a smoother post-operative recovery.

Conclusion: We conclude that although Laparoscopic Kasai porto-enterostomy is a technically challenging procedure, however, it can safely be performed by experienced laparoscopic pediatric surgeons yields positive outcomes even in cases of late presentation with Biliary atresia.

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LAPAROSCOPIC DISMEMBERED PYELOPLASTY IN INCOMPLETE DUPLEX SYSTEM WITH LOWER POLE PUJO: A CASE REPORT AND LITERATURE REVIEW.

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Duplication of the renal collecting system is the most common upper tract anomaly, with a incidence of 0.5–0.8% for patients in different series, with two times more common in female than their counterpart.(1) However, Duplex kidney system with lower pole pelvi-ureteric junction obstruction (PUJO) is very rare anomaly with exact incidence is not known but it has been reported to be 2–7%.2–4 in different case report and studies.(2,3,4) .Duplex system with PUJO are difficult to diagnose and treat because of anatomic variability, functional status, the degree of obstruction and clinical aspect(7) . Dismembered pyeloplasty is recommended for UPJO of the lower pole associated with a complete duplicated collecting system, but this procedure is difficult in incomplete ureteral duplication system due to short length between UPJ and confluence of both ureters (5).

We are reporting a case of laparoscopic dismembered pyeloplasty in UPJO of lower pole in incomplete ureteral duplication of the collecting system.Precise knowledge of Anatomy and function of duplex system are mandatory for planning for successful surgical reconstruction. Laparoscopic transabdominal dismembered pyeloplasty of the lower pole is feasible in incomplete duplication system if length between ureter and PUJO is adequate.

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Urology

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VALIDATION OF RAT ANIMAL MODEL SIMULATING NEONATAL GASTROINTESTINAL PERFORATION.

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Introduction: in this study, we aimed to validate an animal model for exclusive laparoscopic management of neonatal gastrointestinal perforation.

Methods: eleven pediatric surgeons and trainees, with different levels of training in minimal invasive surgery (MIS), performed the procedure in the rat model. Regular video-endoscopic equipment and, 3 mm instruments and 3 mm Karl Storz Rotalock trocars were used. A Likert-type scale was used to evaluate results. Previous experience in MIS, anatomical appearance of the model, physical challenge, and utility of the model as a training method were analyzed.

Results: All of the 11 surgeons performed one procedure each. Based on our questionnaire, six surgeons considered themselves experts in MIS, 2 intermediates and 3 beginners. All the participants judged the dimension of the model and the appearance of small intestine highly similar to neonatal patients. 64% described the model as highly similar to reality. 45% considered the working space small. 81% felt the exploration of the intestine easy, while 45% considered the suturing process moderately challenging, but feasible. Seven participants performed continuous suture, while the remaining did interrupted stiches, with a the average number of two (range 1-3). 91% judged the trocar positioning, the utilization of Rotalocks, suturing of intestine and delicate tissue handling very useful for personal training. All surgeons agreeded that the utilization of 3 mm instruments and the exploration of the whole intestine contribute greatly to the acquisition or improvement of technical skills.

Conclusions: laparoscopy recently has gained a placed in neonatal pathologies, but there is lack of training models in this field. The dimensions and anatomy of our rat model for gastrointestinal perforation, was judged very similar to a premature neonate and has been assessed greatly useful for the acquisition of technical skills. Therefore, our model can be a great resource for training gastrointestinal neonatal MIS skills.

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Robotics and Innovations

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RETROPERITONEAL MATURE TERATOMA WITH FULL GROWTH INTESTINAL LOOPS MIMICS INTESTINAL PERFORATION.

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Introduction: Gastrointestinal-type epithelium is found in 7–13% of mature teratomas, but fully grown gastrointestinal tract formation with complete intestinal loops is an even rarer condition. We present the case of a 2-years old girl referred to our Institution for a radiological finding of a complicated retroperitoneal teratoma.

Patient and methods: The patient was admitted at the Emergency room for abdominal pain and bilious vomiting. CT scan found a big retroperitoneal mature teratoma (8,6x7,2x8,5 cm) on the left-side and images compatible with dilated intestinal loops on the right-side. We suspected an intestinal occlusion caused by the teratoma. Subsequent radiological examinations, performed the day after for better understanding, were conflicting: MRI and CT scan suspected for intestinal perforation of the same intestinal loops previously detected, while GI series showed regular progression of contrast medium without any leakage. Therefore, we performed an emergency laparoscopic exploration.

Results: Laparoscopic exploration allowed us to examine the small bowel in its entirety: we found a normal bowel and excluded any intestinal perforation; we also found important left pelvic vein congestion. After a surgical and oncological evaluation (negative B-HCG and AFP), we performed an open surgical excision of the teratoma; we found a single solid retroperitoneal mass with two different lobes: solid on the left side and cystic on the right side, connected in the middle. The teratoma was capsulated, non infiltrating, compressing the left renal vein, strictly adherent to the superior mesenteric artery in the middle. Anatomopathological examination confirmed the presence of well differentiated intestinal loops in the cystic part of the teratoma, with intestinal perforation.

Conclusion: We present an unique case of a retroperitoneal mature teratoma in which the dilated intestinal loop of the tumor mimics an intestinal occlusion.

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Oncology

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EXTRALOBAR INFRADIAPHRAGMATIC PULMONARY SEQUESTRATION WITH A DIGESTIVE COMMUNICATION: FROM PRENATAL DIAGNOSIS TO PATHOLOGY

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Purpose: Extralobar infradiaphragmatic pulmonary sequestration with digestive communication is rare congenital malformation within the spectrum of bronchopulmonary foregut anomalies. The aim was to describe its preoperative imaging, intraoperative and histological findings.

Methods: Two patients with laparoscopic excision of extralobar infradiaphragmatic pulmonary sequestration with digestive communication were included. Prenatal and postnatal radiological presentation, intraoperative findings and histology were analyzed.

Results: These 2 patients had a prenatal diagnosis of left infradiaphragmatic cystic lesions leading to the diagnosis of extralobar sequestration and adrenal cystic mass. The first patient had a postnatal ultrasound and CT scan describing a tissular and cystic mass in contact with the left diaphragmatic crus with a systemic vessel coming from the left gastric artery. The second one had postnatal ultrasound and MRI describing a tissular and cystic left vertebral mass in contact with the left crus without systemic vessel leading to the diagnosis of cystic neuroblastoma (negative urinary cathecolamines and MIBG scintigraphy). Due to the persistence of the lesion, laparoscopic surgery was performed at 17 and 18 months. Intraoperative findings were respectively compatible with extralobar pulmonary sequestration with gastric duplication and gastric duplication alone. Both lesions were localized around the left diaphragmatic crus and both had a communication with the stomach. Histological analysis diagnosed a cystic pulmonary sequestration in both patients without gastric duplication.

Conclusion: Extralobar infradiaphragmatic pulmonary sequestration with digestive communication should be considered in the differential diagnosis of prenatal lesions located close to the diaphragmatic crus. Minimally invasive surgery should be the preferable approach and paediatric surgeons should be aware of this exceptional and unusual anatomical finding.

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Gastrointestinal

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OUR PRELIMINARY EXPERIENCE WITH ROBOT-ASSISTED TREATMENT OF PEDIATRIC ESOPHAGEAL ACHALASIA.

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Introduction: Esophageal achalasia is a rare condition characterized by loss of esophageal peristalsis and failure of the lower esophageal sphincter to relax in response to swallowing. The estimated incidence in children is about 0,1 per 100.000. The aim of this study is to report our experience with Robotic-assisted Heller-Dor procedure as minimally invasive treatment for achalasia in children.

Patients and Methods: We present a single center case series of patients treated for achalasia between 2021 and 2024. Anamnestic data and all demographics, clinical and laboratory data, imaging, operative and follow up results were collected from medical records and outpatient's clinic visits. Diagnosis of the condition was confirmed by using upper GI contrast study, manometry and upper endoscopy. Due to his state of malnutrition, one patient underwent enteral nutrition with nasogastric tube in preparation for surgery. In every patient was performed a Robotic-assisted Heller myotomy associated with Dor fundoplication and intraoperative endoscopic control of the esophageal mucosal integrity. Myotomy was performed starting from the gastric side toward the esophagus. We analyzed surgery time, length of hospitalization, intraoperative and postoperative complications, recurrence and outcome.

Results: Three male patients with a median age at the time of surgery of 6 years (range 4 - 12) were treated. No intraoperative complications occurred and no significant intraoperative blood loss. Postoperative course was uneventful with resumption of oral feeding on first postoperative day and discharge on the third one. During follow-up, no evidence of recurrence was detected, with optimal relief from dysphagia.

Conclusion: Achalasia is a rare pediatric condition that benefits from minimally invasive treatments. Based on our initial experience with robot-assisted treatment of achalasia, we can state that the three-dimensional vision and robotic freedom of movement allow for greater precision during the procedure, which is reflected positively in the patient outcome.

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Robotics and Innovations

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INNOVATIVE MINIMAL INVASIVE GASTRIC PULL-UP TECHNIQUES IN CHILDREN: SILS AND ROBOT-ASSISTED GASTRIC PULL-UP.

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Aim: Among esophageal replacement techniques, the gastric pull-up (GPU) stands as the only method feasible for minimally invasive surgery. Alternative to conventional laparoscopy, we have been performing SILS assisted (since 2016) and robot-assisted (since 2019) GPU in our department. This study aims to explore the rationality, feasibility, safety, and effectiveness SILS/robotic-assisted GPU methods.

Method: Hospital records of patients who underwent GT with either SILS-assisted or robotic-assisted surgery up to 2016 were retrospectively reviewed. Demographics, diagnosis, surgical techniques, and postoperative outcomes were evaluated.

Results: Out of a total of 12 patients (Male/Female:10/2) who underwent gastric pull-up (GPU) with the SILS-assisted (n:7/Mean age at operation: 74.3(34-166) months) and robotic-assisted (n:5/Mean age at operation: 64.3 (13-72) months). Among the patients, eight underwent GPU due to corrosive esophageal stricture (CES), while four had esophageal atresia(EA). The route for conduit was selected based on the primary pathology (CES or EA), and the presence of posterior mediastinal fibrosis or tracheomalacia. Retrosternal route was preferred in 7, and posterior mediastinum in 5 patients. Routine esophagectomy was performed after 2018 in four consecutive CES patients. For lower esophageal strictures, a transhiatal esophagectomy was preferred, whereas a transthoracic approach was used for upper esophageal strictures. SILS approach and robotic instruments enabled mediastinal dissection up to the sternal notch in all patients. Periumbilical SILS incision(2.5 cm) facilitated extracorporeal gastric preparation identifying tip of fundus for anastomosis. There were no intraoperative complications or mortality related to preferred technique. All but one patient with Down Syndrome and EA started to feed orally. Mean follow-up period was 72.7 (46-92) months, 19.5 (2.5-31) months for SILS and robotic GPU respectively whereas one patient loss the follow up.

Conclusion: This is the first pediatric SILS and robotic-assisted GPU series in the literature. SILS/Robot-assisted approaches may be performed safe and effectively.

Categories

Robotics and Innovations

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LAPAROSCOPIC TREATMENT OF HYDATID CYST OF THE LEVIR : CLINICAL AND THERAPEUTICAL CONSIDERATIONS.

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Introduction: Hydatid cyst of the liver remains a public health matter. It is a single cyst in 70% of cases. Once the diagnosis is confirmed, pre-therapeutic assessment is crucial to establish the best medical care strategy. Treatment, traditionally based on conventional surgery for a long time, has evolved recently with the introduction of new therapeutic methods, notably laparoscopic intervention.

Goal : The advantages of laparoscopic surgery compared to conventional surgery in the treatement of hydatid cyst of the liver.

Observations : We report the cases of two patients who underwent laparoscopic surgery involving aspiration, injection of hypertonic saline solution, and aspiration of the hydatid cyst in the pediatric surgery department at Habib Thameur Hospital in Tunis.

Patients : a girl aged 9 and a boy aged 4, were reported, both presenting with a single hepatic hydatid cyst in the left lobe of the liver.

Results : The postoperative course was favorable for both cases.

Conclusion : The laparoscopic treatment of liver hydatid disease is effective in children, but the current indication remains an object of discussion.

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Gastrointestinal

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HOW CAN SURGEON CHOOSE PREOPERATIVELY THE MOST APPROPRIATE ANTIBIOTIC PROPHYLAXIS VS THERAPY IN PEDIATRIC ACUTE APPENDICITIS?

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Introduction: The aim of this study was to find statistically valid criteria to preoperatively divide acute appendicitis into simple and complicated to enable surgeons to give the most appropriate antibiotic prophylaxis/therapy before surgery.

Materials and methods: We retrospectively reviewed a cohort of patients who underwent appendectomy from January 2022 to December 2023. Patients included were 0-14 years of age. Exclusion criteria included patient who underwent interval appendectomy or concurrent procedures at the same time of appendectomy. We divided patients into two groups: simple (group S) and complicated (group C) appendicitis according to intraoperative finding. Generalized Linear Model (GLM) with logit function was developed to identify the predictive variables of type of appendicitis (S vs C) in terms of CRP value, neutrophils percentage and WBC count adjusted for age and sex of patients. Finally Principal Component Analysis (PCA) was carried out in order to identify cut-off value of statistical significant variables found in the previous analysis.

Results: One hundred and twenty patients were eligible (N female=49, N male=71) for the study. 74 and 46 patients were included in group S and C respectively. In a preliminary analysis using univariate and multivariate GLM, only CRP (p-value=<0.001) and neutrophils percentage (p-value=0.02) were predictive variables for type of appendicitis. The GLM shows a statistical lower value of CRP (adjusted odds ratio [OR] per unit, 0.17 [95% CI, 0.08-0.39]) and neutrophils percentage (adjusted OR per unit, 0.37 [95% CI, 0.16-0.86]) in S group compared to C adjusted to age and sex. PCA analysis revels a P-ROC cut-off of 4.2 mg/dl and 80.1 of CRP value (AUC=84%) and neutrophils percentage (AUC=70%) respectively.

Conclusions: We will perform a prospective study giving preoperative prophylactic cefazolin to patients with a CRP value under 4.2 mg/dl and amoxicillin-clavulanate therapy to patient with CRP value over 4.2 mg/dl.

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Gastrointestinal

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POST-TRAUMATIC HEMATOMA OF THE CECUM AS A DIAGNOSIS ERROR.

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Introduction: Colonic hematoma is a very rare complication of abdominal trauma. Among traumatic digestive lesions, hematomas predominantly affect the duodenum or small intestine and much less frequently the colon. In this case report, we present a patient with a post-traumatic cecal hematoma discovered during surgery.

Case Report: A 12-year-old child with no previous medical history was admitted for the management of right iliac fossa (RIF) pain persisting for 24 hours without other associated symptoms. The examination revealed an afebrile patient with tenderness upon palpation of the RIF. Laboratory findings: WBC = 1120 cells/mm3, CRP = (-), urine analysis = (-). Abdominal ultrasound: The appendix was not visualized, and there was no intra-abdominal fluid collection. The diagnosis of acute appendicitis was initially considered. The patient underwent conventional surgery (due to the unavailability of laparoscopy), and exploration revealed a hematoma of the cecal wall extending from the cecal base upwards for 4 cm. The appendix was normal. The hematoma was preserved, and an appendectomy with peritoneal lavage was performed with uneventful postoperative recovery.

Conclusion: Post-traumatic cecal hematoma is a rare entity. Simple clinical and laboratory surveillance may be sufficient for its management. Surgeons should ask about recent abdominal traumas in their daily examination.

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Gastrointestinal

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THORACOSCOPIC TOTAL EXCISION OF A BRONCHIAL CARCINOID TUMOR.

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Aim: To present our first case of an endobronchial carcinoid tumor that has been excised via thoracoscopy.

Case presentation: An 8-year-old boy was referred for evaluation due to a persistent cough that had lasted for one year. A computed tomography (CT) scan revealed a 1 cm mass obstructing the right intermediate bronchus. Subsequently, a diagnostic bronchoscopy was conducted, during which a solid vascularized mass originating from the anteromedial wall of the intermediary bronchus was identified. Incisional biopsy revealed a carcinoid tumor. There was no other FDG uptake on PET CT scan. The patient underwent a mini thoracotomy assisted thoracoscopic sleeve middle lobectomy and resection of the intermediary bronchus with a wedge excision of the main bronchus. The intraoperative frozen section confirmed a clear surgical margin. Subsequently, a bronchoplasty was conducted on the main bronchus using thoracoscopic techniques, the proximal intermediate bronchus was then successfully anastomosed to the lower lobe bronchus. Intraoperative flexible bronchoscopy confirmed the patency of the anastomosis. He was discharged on POD5 after chest drain removal.

Conclusion: Minimally invasive sleeve lobectomy and bronchoplasty may be performed in children. Organ preserving surgery should be prioritized.

Categories

Oncology

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LAPAROSCOPIC REMOVAL OF ABDOMINAL LYMPHANGIOMAS IN CHILDREN: A 16 YEARS' EXPERIENCE.

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Introduction: Abdominal lymphangiomas are a rare occurrence in the pediatric population, and their laparoscopic resection has been reported in the literature, although mainly as case reports. The aim of this study is to present our experience of laparoscopic treatment for abdominal lymphangiomas in order to evaluate the feasibility and efficacy of this approach.

Methods: from 2007 to 2023 11 patients with abdominal lymphangioma were electively treated with the laparoscopic approach. Age at intervention ranged from 4 months to 14 years. Preoperative diagnosis was made by means of ultrasonography and magnetic resonance imaging. In all cases laparoscopy was performed using four trocars: a 10 mm transumbilical trocar for camera and tissue extraction and three 3–5 mm operative trocars.

Results: Lymphangiomas originated from the mesocolon in 5 cases, from the ileal mesentery in 4 and from the right adrenal gland in 2. Complete resection was achieved in all cases without intraoperative complications or need of conversion to open technique. Percutaneous puncture under laparoscopic control was needed to gain additional working space in three cases of giant lymphangioma. A minimal ileal resection by video-assisted procedure was carried out in 2 cases. Median length of hospital stay was 4 days; no recurrence of disease was recorder by means of serial ultrasound examinations with a median follow-up of 5.4 years.

Conclusion: In our experience, we conclude that elective laparoscopic resection was feasible and effective, and we recommend it as the standard surgical therapy.

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Oncology

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INCIDENTAL FINDING OF LARREY'S HERNIA DURING A LAPAROSCOPIC CHOLECYSTECTOMY.

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Introduction: Morgagni-Larrey hernia is the protrusion of intra-abdominal organs through a congenital defect in the diaphragm. It represents only 2 to 3% of diaphragmatic hernias. This case report describes the incidental discovery of a Morgagni hernia during surgery.

Case Report: The patient is a 16-year-old female, followed since the age of 10 for minor beta-thalassemia, who was referred for surgical management of symptomatic gallstone disease. She underwent laparoscopic surgery, and during exploration of the abdominal cavity, a protrusion of the greater omentum into the thorax through a left parasternal diaphragmatic defect corresponding to Larrey's cleft was discovered. After cholecystectomy, the defect was closed with non-resorbable suture. The postoperative course was uneventful.

Conclusion: Morgagni hernia is the rarest type of diaphragmatic hernia, often asymptomatic and frequently overlooked during clinical examination. Surgical treatment in the case of incidental discovery during surgery is feasible, as demonstrated in our case.

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PORT-A-CATH (PAC) AND CATHETER RUPTURE DURING ABLATION: EXPERIENCE IN MINIMALLY INVASIVE PERCUTANEOUS ENDOVASCULAR REMOVAL OF RESIDUAL CATHETERS.

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Purpose: Port-a-cath (PAC) is an essential device in the management of many chronic diseases in pediatrics. Their removal can be complicated by catheter rupture, the systematic extraction of which is not consensual. Latest evolution of endovascular techniques for extracting foreign bodies has prompted us to remove residual catheters percutaneously due to theirs risks of migration and thrombosis.

Methods: Single-center retrospective cohort study in a university hospital including any patient who experienced catheter rupture during PAC removal from 2006 to 2023. The procedures were performed jointly by an interventional pediatric cardiologist and a pediatric surgeon. The fragment was captured by a triple loop lasso and externalized via the femoral route.

Results: Twelve patients were included (9 boys; 3 girls), aged 4 to 19 years-old. For four patients, the procedure was performed within a month following the rupture, while the median time between catheter rupture and residue removal was 7.1 years (range 3 – 10.8 years) for the others. The residues were located in the jugular veins (6), brachiocephalic trunk (2) and/or superior vena cava (4). Two fragments that were too adherent to the vessel could not be retrieved. A surgical approach to the femoral vein was necessary for three patients because the calcified fragment could not be externalized through the desilet. A catheter fragmented during extraction but was nevertheless completely removed. All per-procedural complications occurred for removals performed long after the rupture. There were no post-procedural complications.

Conclusion: Percutaneous removal of catheter residue is a reliable surgical option which can nevertheless present difficulties, particularly when the rupture is old, requiring cooperation between interventional cardiologist and surgeon.

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Thorax

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LAPAROSCOPIC PERITONEAL DIALYSIS CATHETER PLACEMENT: A TWO-PORT SIMPLIFIED TECHNIQUE.

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Purpose: As mini-invasive surgery has a lot of advantages for the placement of a peritoneal dialysis catheter, the laparoscopic approach is preferred by most of surgeons but no gold standard surgical technique has been described. Our aim was to describe a two-port simplified technique and to report our preliminary results.

Methods: We reviewed all the records of the patients who had a placement of a peritoneal catheter by laparoscopy between the 1st of January 2021 and the 31st of December 2022

Results: This study presented a simplified technique for laparoscopic insertion of a peritoneal dialysis. The placement of the outer and the inner cuff were marked. Two 5 millimetres ports were placed respectively in the umbilicus and the right flank. The peritoneal dialysis catheter was introduced to the peritoneal cavity by a Kelly clamp through a subcutaneous tunnel then placed in the Douglas pouch. The omentum was removed systematically through the umbilical port. This technique was performed for 22 patients with a mean age of 11 years and 8 months. Three patients experienced catheter migration requiring repositioning. Only one patient developed peritonitis.

Conclusion: Our simplified technique is reproducible, safe, and gives good results in terms of catheter functionality and survival, without requiring special devices or too many port sites.

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Urology

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LAPAROSCOPIC TREATEMENT OF TWO GIANTS PARATUBAL CYSTS.

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Purpose: Paratubal cysts are rare and usually occur in adult women and represent only 5 to 20% of all adnexal tumors. They are usually small and asymptomatic however in rare cases they can reach large sizes. It should be included in all differential diagnosis of pelvic cysts as it is hardly distinguished via imaging. Here we represent a case of a giant paratubal cyst diagnosed peroperatively in an adolescent.

Case report: This report describes two cases of a 12 and 14 year-olds girl who underwent surgery in our department for a large paratubal cyst measuring respectively 200*180 millimetres and 210*180 millimeters . Using open laparoscopy, a primary trocar was placed. The cysts were giant measuring respectively 300*400milimeters , unilocular with a smooth surface and no solid growth and had no attachments to the abdominal wall, intestine or mesentery.A second 5 mm trocars was placed under direct vision in the left hypochondrias and the right flank. A primary aspiration was necessary and around 4 liters of serous clear fluid was drained without spillage. The cyst was afterward easily exteriorized via the extended incision of the supraumbilical port and Cystectomy was preceded. The stretched tube and the ovary were both preserved

Conclusion: Paratubal cysts are rare in children and adolescent with a lack of a standard protocol of imaging and surgical management. Diagnosis is usually incidental but it should be recalled in all cystic pelvic lesions. Laparoscopy is safe and feasible even in giant cysts but leakage should always be avoided.

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Urology

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3D RECONSTRUCTION IN PLANNING AND PERFORMING SURGICAL TREATMENT OF LUNG HYDATID CYST.

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Introduction: We present the results of using 3D technologies to improve visualization and planning of surgical treatment of lung hydatid cyst. This work demonstrates the advantages of using 3D reconstruction in thoracic surgery.

Methods: The operations and the preparation and visual processing of CT and MRI imaging was carried out on the basis of the specialized pediatric surgical centers in the Russia Federation and the technologies of the Cybermed. Two 11-year-old children with an echinococcal lung cyst were operated on. To create 3D models of lungs, high-resolution images obtained using a CT scanner. These images were processed by specialized software on the basis of DICOM files of MRI and CT scans. Reconstruction was carried out using the HoloDoctor AR.VR software package, Viewer module. The most reliable data were obtained from MRI and CT with the AIR and Fat filter.

Results: 3D reconstruction made it possible to study in detail the structure, to improve visualization and help with surgical planning and location of the cyst in the lung. Including its size and relationship with surrounding tissues, understanding of the structure of the cyst, its interaction with the vessels and the diaphragm. Multiport laparoscopic to removal of the hydatid cyst were performed. This minimized the trauma of the operation and shortened the recovery time after it.

Conclusion: The use of 3D reconstruction in planning and performing surgical treatment of hydatid cysts of the lung is an important tool for improving the precision of the operation, determination of optimal access to the cyst, and assessment of possible risks and complications and reducing the risk of the surgery. With the 3D technologies in the preoperative period in thoracic surgery improves the visualization of the parasitic cyst with adjacent bronchial structures and increases the safety of video-assisted thoracoscopic echinococctomy.

Categories

Thorax

P215

ROBOT-ASSISTED TRANSPOSITION OF ABERRANT LOWER POLE RENAL VESSELS IN VASORENAL HYDROPHNEROSIS.

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Introduction: In this study, we present a case report on the treatment of a patient with pyeloureteral junction obstruction caused by aberrant inferior polar vessels using Hellström-Chapman robotic surgery and report its short-term results.

Material and methods: We report one case of treatment of pyeloureteral junction obstruction caused by aberrant vessels performed using robot-assisted technique in a 14-year-old girl at the Irkutsk State Regional Children's Clinical Hospital. The diagnosis of pyeloureteral junction obstruction caused by external compression by aberrant lower pole renal vessels was established by ultrasonography and Doppler sonography and confirmed by contrast computed tomography. Surgical intervention was performed using a Versius surgical robot manufactured by CMR (UK). Delicate actions were used to mobilize abnormal vessels and move them to the anterior wall of the pelvis. Then they were “wrapped” with the anterior wall of the pelvis. Postoperative follow-up included clinical assessment and renal ultrasonography at 1, 3 and 6 months postoperatively.

Results: The duration of the operation was 65 minutes. During the robot-assisted Hellström-Chapman operation, there were no intraoperative complications in the form of damage to the vessels feeding the kidney and neighboring organs. The patient did not require internal or external drainage of the upper urinary tract, as well as drainage of the perirenal space. The anterior-posterior diameter of the pelvis decreased from 30 mm to 8 mm. The resistive index (RI) of blood flow in the renal vessels decreased from 0.74 to 0.58.

Conclusion: The Hellstrom-Chapman robotic procedure is a safe and effective procedure for the correction of vasorenal hydronephrosis. This relatively simple operation requires a selection of patients in order to guarantee the success of the treatment in the future.

Categories

Robotics and Innovations

SO216

ROBOTIC-ASSISTED LAPAROSCOPIC CHOLECYSTECTOMY IN CHILDREN WITH SICKLE CELL DISEASE.

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Background: The benefits of cholecystectomy in children with Sickle cell disease (SCD) diagnosed with asymptomatic cholelithiasis have been widely proven. Over the past few years, the laparoscopic approach has shown several advantages in the perioperative management of this patients. Despite the increasing use of robotic-assisted surgery in pediatric patients, there is no data available on robotic-assisted cholecystectomy in children with SCD. The aim of the study was to compare laparoscopic cholecystectomy (LC) and robotic cholecystectomy (RC) in children with SCD and to assess the feasibility and safety of the robotic approach in this peculiar population.

Methods: The files of all children undergoing a cholecystectomy in our institution from April 2019 to December 2022 were retrospectively reviewed. Demographic data, clinical characteristics and outcomes were evaluated using univariate analysis. The primary outcome was the occurrence of vaso-occlusive crisis (VOC) within 30-day following surgery.

Results: 167 patients underwent cholecystectomy in our center during the study period, including 112 patients with SCD. Seventeen patients who had additional procedures with cholecystectomy were excluded. Among the remaining cases, 50 patients underwent LC, and 45 underwent RC. Characteristics of patients were similar between the two groups except for symptomatic gallstones which was more frequent in the laparoscopy group than in the robotic surgery group (44% versus 14%, p = 0.001). There was no significant difference between the groups regarding the occurrence of VOC within 30-day, post-operative complications, opioid utilization and length of stay. There was no difference in terms of operative time but the median operating room occupancy was significantly higher in the RC group (p=0.002).

Conclusion: Robotic cholecystectomy is a safe and effective option for children with SCD with similar outcomes compared to the gold standard treatment by laparoscopy. Robotic approach is associated with additional costs regarding duration of operating room occupancy and utilization of robotic instruments.

Categories

Gastrointestinal

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PREVENTIVE SURGERY OF INTRATHORACIC RIB OSTEOCHONDROMAS : OUR EXPERIENCE IN MINIMAL INVASIVE APPROACH.

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Introduction: Hereditary Multiple Exostoses (HME) is a genetic skeletal disorder characterized by the development of multiple exostoses (or osteochondromas). Although it is a rare condition, rib osteochondromas can occur in 1-2% of the cases, and can cause some serious complications such as hemothorax, pneumothorax… At the moment, there are no guidelines on their surgical management, but complicated rib osteochondromas are often removed. Thoracotomy is the preferred approach with an increasing number of thoracoscopy lately. The place of prophylactic surgery in case of non-symptomatic rib exostoses is not yet defined, and no risk factor of complication is described in the literature.

Purpose: To present our preliminary experience in preventive removing rib osteochondromas using video-assisted thoracoscopy in a pediatric center.

Methods: We retrospectively review data from 2 patients who underwent surgical preventive removing of intrathoracic rib osteochondromas from January 2019 to December 2023.

Results: The first was an asymptomatic 11 year-old-girl with the diagnosis of bilateral ribs osteochondromas. The left one was growing (24x18mm) making an imprint on the heart, leading to a surgical management. The second patient was a 10 year-old-girl with chest pain revealing a right rib exostose (10x26mm) with an imprint on the liver. A Video-Assisted Thoracoscopy Surgery in lateral decubitus position with selective intubation was realized each time, with no conversion needed. The average operating time was 90min. The length of hospitalization was 48h with a 24h drainage. There was no peri or post-operative complications and no recurrence was noted at a mean follow up of 15 months.

Conclusion: Few studies describe preventive surgery for intrathoracic osteochondromas, but chest pain could be the only symptom, possibly leading to serious complication. Chest pain or compression of noble organ appears to be a good indication of preventive surgery. In our experience Video-Assisted Thoracoscopy Surgery is feasible and safe.

Categories

Thorax

SO219

INGUINAL HERNIA REPAIR IN CHILDREN PERFORMED WITH PERCUTANEUS INTERNAL RING SUTURING (PIRS) - 15 YEARS OF EXPERIENCE.

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Introduction: The laparoscopic inguinal hernia repair in children using the Percutaneus Internal Ring Suturing (PIRS) is a widespread method. Nowadays, PIRS method is nearly as common as open (traditional) approach. The aim of exposition is showing a result of application the PIRS method for 15 years in one department.

Materials and Methods: The retrospective study included 571 (349 male, 222 female) children, aged 0-18 (average of age 4,68), underwent surgery using PIRS method in our institution between 2008-2022. In this group there were 344 right sided, 174 left sided inguinal herniae and 7 hydroceles in presurgery diagnosis. A contralateral hernia was found in 58 cases. Intraoperatively there were found 274 cases of right sided hernia and 128 cases of left sided hernia, bilateral herniae were detected in 165 cases. During 9 of PIRS method surgery no hernia was founded. In group consist of 48 children the conversion to open approach was needed. The mean surgery time was 28,5 minutes for single sided cases, 33,5 minutes for bilateral herniae and 66 minutes for cases which needs conversion to open approach. Moreover, 12 children (male 11, female 1) were reoperated using PIRS technique, whom 10 children because of recurrence in the same side and 2 because of metachronous hernia.

Results: The recurrence of the inguinal hernia was observed in 10 patients in the laparoscopic group. The mean time duration of the laparoscopic method was 34,5 minutes.

Conclusion: Looking at 15 years of experience with PIRS method in our department we can conclude that the duration of the laparoscopic surgery is short, the amount of recurrences in not significantly huge and esthetic effect is admittable. This method give an great opportunity to earlier detection of bilateral hernia.

Categories

Miscellaneous

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ROLE OF MINIMALLY INVASIVE SURGERY ON THE TREATMENT OF COMPLICATED APPENDECTOMY: APPROACHES IN COMPARISON. A 5 YEARS SINGLE CENTER EXPERIENCE.

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Purpose: Acute appendicitis represents the primary cause of acute abdomen in childhood. While mini-invasive surgery (MIS) appendectomy is preferred for uncomplicated appendicitis, its role in complicated ones remains uncertain. Our centre uses three approaches: three-port video-laparoscopy (VLS), single incision with Octoport device, and trans-umbilical laparoscopic-assisted appendectomy (TULAA). The ongoing debate over these approaches, influenced by surgeon expertise, motivates this study, aiming to compare post-operative outcomes, complications, and conversion rates to an open approach to refine decision-making.

Materials and Methods: Ours is a retrospective case series, we collected and analyzed data of all patients treated for complicated appendicitis at our centre from 2018 to 2023. All patients were divided in three groups based on the surgical technique. The variables included duration of antibiotic therapy, recovery post operative complications. Results are expressed in percentage, mean and median, t-test and Mann Whitney test were used accordingly to the variables.

Results: From a total of 350 patients, 74 were treated for complicated appendicitis: 38 underwent VLS, 24 with Octoport device and 14 TULAA. Regarding length of hospital stay (p=0.53), antibiotic therapy duration (p=0.43) and duration of abdominal drainage (p=0.60) no statistically significant differences were found between the 3 groups. However, 15.4% of TULAA-treated patients developed postoperative abscesses and 13.2% required 2nd line antibiotics. Furthermore, 92% of these patients required additional oral antibiotic therapy at home compared to 74% in VLS group and the 78% in the Octoport group. In this last group, 2.7% of patients presented wound infection as a complication.

Conclusion: All three of the approaches demonstrated similar results regarding postoperative outcomes, nevertheless TULAA showed higher rates of home therapy and post- operative abscesses, These findings emphasize the importance of individualizing treatment strategies. Further studies must be done in order to provide more solid evidence to support the decision of surgical approach.

Categories

Gastrointestinal

SO221

ROBOT-ASSISTED THORACIC SURGERY FOR BRONCHOGENIC CYST RESECTION: EXPERIENCE IN A PEDIATRIC POPULATION.

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Introduction: Bronchogenic cyst is a congenital cystic malformation of the respiratory tract. Usually asymptomatic in children, a surgical resection is nevertheless often carried out to prevent from complications, such as infection or compression of adjacent organs. The gold standard approach is thoracotomy. Indeed Video-Assisted Thoracic Surgery raises concern about incomplete resection and possible injury to intrathoracic structures. A robotic approach can reduce these disadvantages. However, the literature on robotic resection of bronchogenic cyst in children is poor and almost exclusively based on case report.

Purpose: To report our preliminary experience with Robot-Assisted Thoracic Surgery (RATS) for bronchogenic cysts removal in a pediatric center.

Methods: We retrospectively reviewed data from 5 patients who underwent RATS for bronchogenic cyst resection from January 2010 to December 2023 in our pediatric surgery university unit.

Results: All patients were female. Antenatal diagnosis was found for 3 patients. For the 2 others, respiratory symptoms led to the diagnosis at a mean age of 9 years old. None had associated malformation. The mean age at surgery was 28 months for patients with antenatal diagnosis. The cyst was resected successfully in all patients (complete resection), without conversion. The mean operating time was 100min, duration of drainage was 45h, and postoperative hospital stay was 67h. Only one early post-operative complication occurred : a pneumothorax requiring prolonged drainage for 72h. There was no late post-operative complications and no recurrence at a mean follow up of 5,6 years.

Conclusion: This is the first reported series of RATS for bronchogenic cyst resection in a pediatric population. Robotic resection of bronchogenic cyst appears to be a safe method without recurrence nor long-term thoracotomy's complications, such as scoliosis development.

Categories

Robotics and Innovations

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PREOPERATIVE SPLENIC ARTERY EMBOLIZATION PRIOR TO TOTAL SPLENECTOMY DUE TO HAEMATOLOGIC DISEASES IN PAEDIATRIC PATIENTS: A CASE REPORT AND SYSTEMATIC LITERATURE REVIEW.

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Introduction: Haematological disorders associated with splenomegaly may require surgery. Splenectomy poses a relevant risk of blood loss and transfusion. This study aims to evaluate the effectiveness of splenic artery embolization (SAE) prior to total splenectomy (TS) to prevent these complications in paediatric patients.

Patients And Methods: We analysed a case treated in our Institution. Furthermore, we performed a systematic literature review. We searched on Medline and Scopus, including patients under 19 years old, treated with SAE, followed by TS due to hematologic diseases; we excluded papers without detailed clinical data, written in languages other than English.

Results: A 12-years old girl, affected by hereditary spherocytosis came to our attention due to a severe splenomegaly (spleen length = 18 cm). Immediately prior to surgery a SAE was performed without complications. Then, the patient underwent a laparoscopic TS and cholecystectomy for cholelithiasis. There were no blood loss and neither postoperative complications. The systematic review included 7 of 60 papers. A total of 42 patients were evaluated: 17 females and 14 males (11 not reported), whose age range was 1-18 years. The underlying diseases were leukaemia (n=13), hereditary spherocytosis (n=7), sickle cell anaemia (n=5), idiopathic thrombocytopenic purpura (n=5), myelodysplastic syndromes (n=4), beta-thalassemia (n=3) and not reported (n=5). The major axes of the spleen ranged from 9,3 to 20 cm. In most patients (n=35), SAE was performed immediately prior to the surgery. Only 7 of 42 patients developed complications. TS was performed mostly laparoscopically (n=21) or robotically (n=3) with only one conversion to open. In almost all cases (n=40) the blood loss was insignificant and just 12 patients developed minor postoperative complications.

Conclusions: SAE prior to TS is a useful tool to prevent blood loss and transfusions in paediatric patients, favouring MIS surgery also in case of massive splenomegaly and limiting conversions to open.

Categories

Miscellaneous

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LAPAROSCOPIC APPROACH OF POSTOPERATIVE ADHESIVE OBSTRUCTION.

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Background: Bowel obstruction in children is often caused by adhesions from an earlier laparotomy. With new advances in diagnostic and therapeutic tools, the early management has become feasible. Some authors have assessed the feasibility of laparoscopy in the treatment of postoperative adhesive obstruction, but conclusions about its effectiveness are related to different selection criteria used for surgery.

Aim: This study reports on our experience in laparoscopic adhesiolysis and evaluates the rate and predictive factors of success, the causes of failure, the morbidity, and mortality during and after hospitalization.

Methods: The records of 9 patients with postoperative adhesive obstruction treated laparoscopically in the department of pediatric surgery in Monastir between September 2018 and April 2022 were retrospectively reviewed.

Results: This study included 9 patients (6 girls and 3 boys) with a mean age of 7 years (range, 1 year and 7 months–13 years). Four children underwent primary laparotomy for acute appendicular peritonitis, three children for simple acute appendicitis (intraoperatively : gangrenous appendix), and 2 others for small bowel volvulus. Laparoscopy alone was successful in 6 patients (67%) with in intraoperative presence of a single or two fleshy bands that was uneventfully sectioned. Conversion was necessary in 3 cases (33%). The indication was bowel necrosis in 2 children and insufficient working space due to very important digestive distension in one child. The mean postoperative stay was shorter in the ‘success’ group than in the ‘failure’ group (3 days vs 8 days) with no morbidity and no mortality.

Conclusion: Laparoscopic management of adhesive bowel obstruction in children is feasible and safe in experienced hands. Early management saves the child a great deal of discomfort and allows a quick recovery with early discharge.

Categories

Gastrointestinal

SO226

IS MINIMALLY INVASIVE SURGERY FOR PEDIATRIC ADRENAL TUMOUR BECOMING INCREASINGLY IMPORTANT IN SURGICAL PRACTICE?

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Aim: To evaluate the increasing use of minimally invasive adrenalectomy (MIS) and to compare the choice of MIS versus open adrenalectomy (OA) in children according to tumor-related variables and operative time.

Materials and Methods: Patients who underwent adrenalectomy for adrenal tumors were reviewed from 2019 to 2023. The number of operations, age, tumor size, and operation time were evaluated according to the choice of OA or MIS.

Results: There were 17 patients ranging in age from 9 months to 17 years. The mean age of the patients was 6 years. Eight adrenal tumors were located on the right side (47.1%). The mean size of the adrenal mass was 42.3*37.8mm. Malignant pathology was diagnosed in 15(88.2) cases and neuroblastic tumor was the most common pathology (n=12,70.6%). Patients were compared according to surgical choices. The mean age was 7 and 6 years in MIS and OA, respectively($p>0.05$). The tumor was located on the right side in five of the MIS group (62.5%) and three of the OA group (37.5%). The mean size was 30.3*29.6 mm in the MIS group and 57.8*46.8 mm in the OA group. The malignancy rate was similar between the groups with 88.8% (n= 8/9); in the MIS group and 87.5%(n=7/8) in the OA group. The distribution of MIS rates and numbers by years are as follows: 0, n=1;50%, n=2;66.7%, n=1;33.3%, n=5;71.5% in the years 2019- 2023 respectively. The operative time was found to be similar; 49.5 minutes in the MIS group compared to 55.3 minutes in the OA group($p>0.05$).

Conclusion: We have successfully performed an adrenalectomy for adrenal tumors in children using both OA and MIS. We found that our MIS rates have increased in recent years, we prefer MIS for relatively smaller tumors, and the operative times were comparable in both groups.

Categories

Oncology

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MIS-TREATMENT OF COMPLICATED PLEURAL EMPYEMA IN PEDIATRIC PATIENTS: ARE FIBRINOLYTICS EFFECTIVE? OUR 6 YEAR EXPERIENCE IN A SINGLE CENTER.

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Purpose: Complicated pleural empyema (CPE) is referred as an accumulation of purulent material and fibrin in the pleural cavity associated with acute lobar pneumonia. The use of fibrinolytics as the first therapeutic approach is supported despite study limitations. The aim of our study is to analyze the characteristics of patients treated for CPE depending on the different therapeutic approaches: simple drainage (DS), drainage and urokinase (UK), and video-assisted thoracoscopic surgery (VATS).

Materials and methods: Ours is a retrospective case series, collecting and analyzing data of patients treated for CPE from 2016 to 2023, we divided into 3 treatment groups: DS, UK and VATS. Results are expressed in median, p statistically significant <0.01. Variables included length of hospitalization, grade of empyema, days of antibiotic therapy and days of drainage.

Results: 21 patients were treated for CPE, in 20/21 patients X-ray was the first diagnostic examination, associated to non-specialist ultrasound (US) in 20/21 (95%), specialized US in 9/21 (42%), eventually 20/21 required thorax CT to restage the empyema. Simple drainage was chosen as first approach in 4/21, 6/21 UK and 11/21 VATS. In 5 UK patients VATS was required due the persistence of symptoms. Hospitalization time in the DS group: 15 g vs UK: 30.5 vs VATS: 15 g. The duration of antibiotic therapy: DS 10 g vs UK: 20 g vs VATS: 14 g. Post procedure fever: SD: 2 vs UK: 2 vs VATS: 3. Drainage time: DS: 7 vs UK: 22.5 vs VATS: 8 days.

Discussion: Patients treated with UK as first approach presented longer hospital stay and eventually underwent VATS. The use of non specialist US seemed to underestimate the stage of empyema, the patients with stage II-III empyema treated with VATS as a first approach presented a more favorable clinical course compared to the other groups studied.

Categories

Thorax

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BALLOON DILATATION IN THE MANAGEMENT OF SECONDARY URETERO-PELVIC JUNCTION OBSTRUCTION: A SINGLE CENTER EXPERIENCE.

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Introduction: Ureteropelvic junction obstruction (UPJO) is the most common congenital cause of upper urinary tract obstruction in children. After failed primary pyeloplasty many authors reported several techniques among them high-pressure balloon dilatation had been reported.

Aim: Reporting our experience and analyzing the use of balloon dilatation in the treatment of secondary UPJO in children.

Methods: A retrospective study of endoscopic dilatation of secondary UPJO after Anderson-Hynes pyeloplasty (2 laparoscopic,3 open surgery), was performed at our department.

Results: From 2012 to 2023, 9 patients underwent secondary treatment after failure of AHPyeloplasty, age ranged from 1-17 years (median 7 years). Only one patient was initially operated for a single kidney associated to UPJO. The postoperative follow-up was marked by a severe hydronephrosis due to anastomotic stenosis; endoscopic dilatation was our first therapeutic choice. Nine dilatations were performed, the mean operative time was 30 ± 10 minutes. We performed an endourologic retrograde balloon dilatation under fluoroscopic guidance. The dilating balloon, inserted over the guidewire and placed across the stenotic segment, had a diameter of 4 to 8 mm. The balloon was then inflated until its waist disappeared on fluoroscopic imaging (pressure rises to 8-10atm). A Double-J ureteral stent was inserted in all cases. Foley catheter drainage remained in place for 24 hours in all children, minimum length of hospital stay was 1 day. Resolution of hydronephrosis was observed in 3 cases, 1 patient was proposed for resumption of the pyeloplasty, and a second dilatation was necessary in 2 patients 4 years after his intervention because of the reappearance of hydronephrosis on the renal ultrasound. The double-J stent was withdrawn using cystoscopy after 4 to 8 weeks. All patients remain under regular clinical and radiological review.

Conclusion: Endoscopic high-pressure balloon dilatation could be a valid and safe option in the treatment of secondary UPJ obstruction in infants.

Categories

Urology

SO229

EVALUATION OF THE LEARNING CURVE IN THORACOSCOPIC ESOPHAGEAL ATRESIA CORRECTION ON A VALIDATED SIMULATOR.

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The thoracoscopic approach now represents the mainly proposed technique for the correction of esophageal atresia in babies fit enough to support iatrogenic pneumothorax. However, the factual feasibility of the thoracoscopic option, resides in the experience of the surgical center in minimally invasive approaches. For this purpose, several simulators have been devised to help harness the skills of young surgeons and residents, who may not have access to real patients to practice on.

We conducted a study to investigate the necessary number of attempts to achieve a certain level of proficiency in the thoracoscopic repair of esophageal atresia on a validated simulator, evaluating the surgical times. The standard to reach was set by a skilled surgeon in minimally invasive procedures, with experience in the thoracoscopic correction of esophageal atresia. Participants were divided into young specialists, senior and junior residents. Young specialists required a mean of 5 attempts to reach the level of their senior colleague, senior residents required a mean of 12 attempts. At last junior residents were not able to achieve proficiency within 20 attempts.

In conclusion, the simulator for thoracoscopic esophageal atresia repair is a valid instrument for young surgeons to practice this surgical procedure.

Categories

Robotics and Innovations

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FLUORESCENT-GUIDED SURGERY – FIRST EXPERIENCE IN CHILDREN.

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Introduction: This article presents the first examples of the use of fluorescent surgery in the pediatric population and demonstrates procedures that can be recommended for use in children.

Material and methods: Medical records of n=61 patients who underwent fluorescent-guided laparoscopic procedures were reviewed. Surgical procedures were performed using the RUBINA™ endovideosurgical system. The most frequently performed surgical procedure was lymphatic-sparing Palomo varicocelectomy 38 cases. This was followed by: mature ovarian teratoma -7, renal cyst fenestration -5, horseshoe kidney -1, intrathoracic ganglioneuroblastoma -1, cholecystectomy -6, vasorenal hydronephrosis -1, endoscopic marking of colonic tumor -1, ICG assessment of colon graft perfusion -1.

Results: The mean age of patients at the time of surgery was 14.3±2.5 years (15.0 [13.0; 16.0] years). The average weight of patients at the time of surgery was 67.5±14.4 kg (60.0 [69.0; 75.0] kg). Most often, ICG was administered during surgery -42 cases,10 hours before surgery (cholecystectomy and endoscopic marking of colonic tumor) -7 cases. The methods of administration were distributed as follows: route of the drug was used in intratesticular (varicocele) -30 cases, the intravenous -16, intraluminal (with vasorenal hydronephrosis and endoscopic marking of colonic tumor) -2. In all cases, the operations proceeded without intraoperative complications and without conversion to open procedures. The duration of the surgical intervention was on average 49.0±36.0 min (30.0 [35.0; 50.0] min). The length of stay in the intensive care unit was on average 5.0±6.0 hours (3.0 [2.0; 3.0] min). The duration of hospitalization was on average 3.5±0.8 days (3.0 [3.0; 4.0] days).

Conclusion: The results of the study were the basis for making a conclusion about the benefits of laparoscopic procedures performed in children using ICG navigation, since the main goal was achieved - the safe provision of visual control of the target anatomy of the surgical intervention.

Categories

Miscellaneous

P231

SPONTANEOUS CLOSURE OF IATROGENIC ENTEROVESICAL FISTULA.

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Purpose: Enterovesical fistula after suprapubic bladder aspiration is a documented complication in literature but hardly ever seen in clinical practice. Herein we present the management of an infant with iatrogenic enterovesical fistula after suprapubic urine aspiration.

Patient: A healthy 6month old male was referred for voiding cystourethrogram (VCUG) after being hospitalized twice due to urinary tract infection. After filling the bladder with the contrast material, an enterovesical fistula with the right colon was revealed. The patient was further investigated with MRI of the abdomen and pelvis which were inconclusive regarding the presence of a fistula. A period of watchful waiting was decided due to patient's great general condition, normal urinary sample tests and normal growth pattern. A VCUG with ultrasound was ordered after three months that revealed high suspicion of presence of a fistula between the right bladder wall and the colon.

Methods: An exploratory laparoscopy was decided. During the operation no site of fistula was found, neither adhesions between the bladder and the intestines or any other abnormality. Simultaneous cystoscopy was without pathologic findings and the bladder was then filled with diluted blue de methylene which confirmed the integrity of its wall. The patient was discharged on the 2nd postoperative day.

Results: At three years follow up the patient is totally asymptomatic, in great general health.

Conclusions: Decision making in treating complications is always challenging, especially when there is scarce experience in literature. Following the patient's clinical condition might be a helpful guide to the treatment plan.

Categories

My Worst Complication

P232

SURGICAL TREATMENT OF VARICOCELE IN CHILDREN: BENEFITS OF LAPAROSCOPIC APPROACH.

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Introduction: The reported incidence of varicocele in children and adolescents is 10% to 15%. The major surgical indications are testicular loss of volume followed by testicular pain. Controversy still exists about the indications and the gold standard approach for varicocele treatment in pediatric population. We report our 19 years of experience in laparoscopic varicocele repair in the pediatric population.

Methods: We retrospectively evaluated the data of 42 consecutive patients who underwent laparoscopic varicocelectomy from January 2002 to December 2022 in our department.

Results: Average patient age was 12 years (range 6-16). One patient had a recurrent varicocele after prior ipsilateral inguinal surgery repair. Thirty-seven patients had a varicocele on left testis, bilateral pathology was recorded in four cases. Indications for varicocelectomy included high degree varicocele (Grade II in 18 cases and Grade III in the other cases) with a left testicular hypotrophy noted in two cases, with associated symptoms such as testicular pain/discomfort or swollen scrotum. For the preoperative work-up, all the children received a testicular ultrasound (US) to assess the testicular volume and a testicular venous Doppler to assess the venous reflux. We performed a Palomo technique. All procedures were completed in laparoscopy without conversions or intraoperative complications. The average operative time was 30 min (range 20-45). the vessels were clipped (two case) or coagulated then sectioned. Mean follow-up was 24 months (3-60). We recorded two (4.8%) recurrences/persistences (Grade I) and 9 cases of hydrocele (21.9%), one of these required surgical operation.

Conclusion: Laparoscopic varicocelectomy is technically easy and quick to perform, painless, and scarless, and it has excellent outcomes regarding varicocele persistence/recurrence. In addition, it has a low complication rate.

Categories

Urology

SO233

INTRAOPERATIVE ULTRASOUND IN MINIMALLY INVASIVE LAPAROSCOPIC AND ROBOTIC PEDIATRIC SURGERY: OUR EXPERIENCES AND LITERATURE REVIEW.

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Ultrasound is a non-invasive imaging technique frequently used to examine internal organs and superficial tissues, invaluable in pediatric patients. In a surgical setting, intraoperative ultrasound allows to highlight anatomical structures in detail during traditional open and minimally invasive surgery, thanks to the use of specific probes. In fact, laparoscopic and robotic ultrasonography requires the development of specialized transducers that fit through laparoscopic trocars. In adults, laparoscopic ultrasound is used during cholecystectomy before dissection of the triangle of Calot, to guide liver biopsies and ablation procedures and for the staging of patients with pancreas adenocarcinoma. However, the applications in the pediatric field are still limited. This paper aims to share our preliminary experience with ultra-sound in minimally invasive laparoscopic and robotic pediatric surgery, describing four cases in which intra-operative ultrasound was applied, and to present a review of the literature on the state of the art of the current uses in pediatric surgery.

Categories

Robotics and Innovations

P234

THE GROWING NEED FOR MINIMALLY INVASIVE SURGERY IN PAEDIATRIC SURGERY: THE EXPERIENCE OF A TERTIARY CHILDREN'S HOSPITAL.

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Purpose: Our clinic has been in 2019 we moved to a new location with advanced technical facilities. The preference for minimally invasive surgery (MIS), which we started with appendectomy, has been reflected in advanced procedures from thoracic to abdominal. In 2022, we held an MIS course/live surgery webinar. We wanted to discuss the differences in our MIS preference and the factors influencing our increasing rates of MIS with the impact of educational organisations.

Materials: Patients undergoing surgery for appendectomy, ovarian pathology, congenital diaphragmatic hernia (CDH), esophageal atresia (EA), adrenal tumour (AT), biliary atresia (BA), and choledochal cyst (CC) were reviewed from 2019 to 2023. The number of surgeries was compared based on the choice of open or minimally invasive surgery (MIS) by years.

Results: The MIS rate (MISR) for appendectomy was 26.8%(n=160;2019) and has now reached 95.8%(n=497;2023). The MISR for ovarian pathology was 100%(n=6;2019) and 90%(n=18;2023). The MISR for CDH increased from 44.4%(n=4,2019) to 91.6%(n=14) in 2023. The MISR for EA was 0%, 28.8%, 100%, 92.3% and 93.3%(n=14) in the years of 2019-2023 respectively. Open surgery was the only preferred choice for AT, but the MISR for AT was increased to 71.5%(n=7) in 2023. While open surgery was always preferred for BA and CC, portoenterostomy in 7 and hepaticojejunostomy in 4 cases were performed laparoscopically as of 2023 with the contribution of our increased surgical acquisitions and knowledge after the webinar.

Conclusion: Our familiarity with MIS, which we started to use for laparoscopy in appendectomy and ovarian pathologies, contributed to the transfer of our skills and surgical success in pathologies such as EA, CDH, adrenal tumors, BA, and CDC. The contribution of the training process has led to the use of more advanced MIS techniques in pathologies such as BA, CC and AT.

Categories

Miscellaneous

P235

BUTTON BATTERY AND CAUSTIC INGESTION: PRELIMINARY EXPERIENCE OF A NEW THERAPEUTIC PROTOCOL TO REDUCE SHORT AND LONG TERM COMPLICATIONS.

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Management of esophageal injuries due to caustic and button battery ingestion in pediatric age remains a challenge for pediatric endoscopists both for the staging of the lesions and the complications.

Literature reports sequelae such as trachea-esophageal fistula, aorto-esophageal fistula, pneumothorax, mediastinitis, esophageal perforation and strictures following injuries due to caustic and button battery ingestion.

Authors agree to administer antibiotic therapy and PPI while he role of the corticosteroids in limiting the progression of the esophageal injuries is debated. In the last years we implemented a new post-procedural protocol for the ingestion of caustic and button battery including PPI, antibiotic and high doses of corticosteroids (1g/1.73 m2) for 3 days.

We enrolled 6 patients (3 button battery, 3 caustic ingestion) from 2021 to 2023 with esophageal injuries Zargar ≥ IIB, who recieved the new therapeutic regimen. We followed the patients for one year from ingestion.

In 100% of the cases, no short and long term post-procedural complications were found (trachea-esophageal fistula, aorto-esophageal fistula, pneumothorax, mediastinitis, esophageal perforation and strictures).

Comparing our results with literature, we reported a reduction of complications related to caustic and button battery ingestion.

Concluding, we think that the new therapeutic regimen could reduce post-operative complications.

A multicenter study is necessary to obtain stronger results.

Categories

Gastrointestinal

SO236

BLADDER TUMOR IN PEDIATRIC AGE: A RARE FINDING.

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Introduction and Aim: Bladder tumors are exceedingly rare in children, with only 0.5% occurring under 35 years. We aim to describe the cases of pediatric bladder tumors in our tertiary pediatric center.

Methods: We retrospectively reviewed the cases of bladder tumors treated in our center between 2019 and 2023. Demographic data, symptoms, exams performed, surgical details, postoperative and follow-up data were collected.

Results: Two cases of bladder tumors were included. Both patients were male and had 12 and 13 years. The first patient presented with isolated macroscopic hematuria; the second patient suddenly developed multiple episodes of urinary tract infection; neither had predisposing factors or abnormalities on physical examination or previous urinalysis. Both cases performed a kidneys, ureters and bladder (KUB) ultrasound revealing a suspicious bladder lesion and definitive diagnosis was made by cystoscopy and transurethral resection of the lesion. The lesion was located in the first case on the lateral bladder wall and in the second on the posterolateral wall. There was one peri-centimetric iatrogenic extraperitoneal bladder wall perforation, diagnosed intraoperatively and resolved with conservative treatment. Histological analysis revealed in both a papillary urothelial carcinoma (pTa according to the 8th edition American Joint Committee on Cancer (AJCC) Cancer Staging Manual). After three years both patients remain under follow-up, performing revisional cystoscopy every six months. One patient had local isolated relapse after one and three years, submitted to further transurethral resection and adjuvant treatment with mitomycin C. The other had no relapse to date.

Conclusion: Albeit rare, bladder tumors in pediatric age may pose a clinical difficulty to the pediatric surgeon. In the presence of symptoms suspicion must be high and a KUB ultrasound should be performed. Despite good prognosis in pediatric age, local relapse is a concern and prolonged follow-up is essential.

Categories

Oncology

P237

CHALLENGES INFLUENCING THE ADOPTION OF LAPAROSCOPIC SURGERY IN TUNISIA.

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Introduction: Minimally invasive surgery (MIS) is widely used in high income countries while it is still rudimentary in many low- and middle-income countries due to various raisons. The aim of this study is to highlight the most common challenges encountered by Tunisian pediatric surgeons when adopting MIS and offer advice to addressing them.

Methods: We performed a cross sectional descriptive study carried among senior pediatric surgeons and residents practicing in the different public pediatric surgery departments in Tunisia. A total of 88 self-administered questionnaires were distributed online via mail from March to April 2023 with 62 respondents (70 %).

Results: Forty-three (69.3 %) senior pediatric surgeons and 19 (30.6 %) residents participated in the survey. Reported frequency of use of MIS was limited; the majority of participants (41%) performed less than 1-2 cases per week. The most common procedures performed laparoscopically were appendectomy (85%), orchidopexy for non-palpable testis (81.7%), cholecystectomy and ovarian torsion (66.7%), liver hydatid cyst and Nissan Fundoplication (38.3%). A total of 56.5% of participants reported disposing of a simulation center in their institution; 55 % of them reported previous training in MIS. However, this training was limited with most of the surgeons having 6 months or less of training. Reported barriers for adopting MIS were difficulties in getting funds for needed equipments (75.8%), poor access to training courses and lack of fund for servicing equipments and for simulation training.

Conclusion: This study presents an overview of the current situation and challenges encountered by Tunisian pediatric surgeons when adopting MIS. A low-cost equipment in combination with a training program in laparoscopic surgery could be potential solutions.

Categories

Miscellaneous

P238

ENDOSCOPIC COAGULATION ELECTRODE INTRODUCED VIA CYSTOSCOPE MAY PROVIDE ADDITIONAL TROCAR INSERTION IN LAPAROSCOPIC PIRS METHOD AND THERMOCOAGULATION OF INGUINAL RING IN CHILDREN.

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Purpose: Laparoscopic percutaneous internal ring suturing (PIRS) has become a common approach for indirect inguinal hernia in children in many centers. Even though the recurrence rates were higher than open repair few years ago, data shows similar rates recently. Thermal injury to the peritoneum with repair was showed to reduce recurrence rates and increase fibrosis in animal studies. The method was also presented as safe and effective in clinical studies. The method requires an additional trocar for thermocoagulation device. Even though it is usually a 3 mm trocar with minimal scar, it eliminates the cosmetic advantage of PIRS method which usually requires only camera port. In this paper it was aimed to present an alternative method for creating thermal injury around the internal inguinal ring without placing an additional working port.

Materials and Methods: A 4 mm camera trocar is inserted via umbilicus. As the first step a 30° cystoscope is inserted through umbilical port. Internal inguinal rings are evaluated and thermal energy is applied via a 3 mm endoscopic coagulation electrode which is introduced through the cystoscope's working channel. After coagulation the camera is switched to 4 mm and PIRS is performed.

Results: The method was applied to four children with six hernias. Mean age of the children was 4 years (4 months-8 years) and mean weight was 15kgs (6-22). Male/female ratio was 3:1. The follow up period was 8 months. There were not any complication or recurrences.

Conclusion: The method seems feasible to apply thermal energy to internal inguinal ring safely. Even though the follow up period and number of children are not sufficient to comment on recurrence and complications, we present this method as an alternative to introduce an additional trocar in PIRS method.

Categories

Urology

SO239

RETROPERITONEAL ROBOT-ASSITED APPROACH FOR PEDIATRIC ADRENAL NEUROBLASTOMAS.

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Objectif: Mini-invasive surgical indications for pediatric tumors have exponentially increased. Advantages of laparoscopic trans-peritoneal approach, including robot-assisted procedures, for neuroblastomas with or without image-defined surgical risk factors are widely spread, but no data exist for retroperitoneal approach. Our study aims to present our cases of retroperitoneal robot-assisted approach for neuroblastomas with antenatal diagnosis.

Methods: We reviewed the two cases of laparoscopic adrenalectomies for adrenal neuroblastomas using a retroperitoneal robot-assisted approach, performed between December 2023 and January 2024 in our center. The children were placed in lateral position and 3 robotic ports, and one assistant port were used. Datas were collected prospectively, including demographics, medical history, imaging, oncological and surgical management, per operative findings and post-operative outcomes.

Results: Our first case was a little boy of 17 months, 13,5 kg, with an antenatal diagnosis of right adrenal neuroblastoma. MIBG scintigraphy found no other lesion, and urinary cathecolamines were negative. Tumor was measured at 27 mm at birth, then undergoes a slight increased, followed by a regression to 17 mm and finally a stagnation of size. Our second case was a little girl of 13 months, 10,5 kg, with an antenatal diagnosis of right adrenal neuroblastoma. MIBG scintigraphy found no other lesion, but she had positive urinary cathecolamines. The tumors measured 43 mm at birth, then undergoes a regression to 15 mm and finally a stagnation of size. Console time was two hours. No per operative or post-operative complications occurred. There was no blood loss. The two patients were discharged at day one.

Conclusion: Retroperitoneal robot-assisted approach for adrenalectomy seems to be a feasible and safe technique for selected children.

Categories

Oncology

P240

FROM LAPAROSCOPY TO ROBOTICS: SURGICAL APPROACH TO GASTROESOPHAGEAL REFLUX DISEASE.

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Introduction: Robotic assisted fundoplication for gastroesophageal reflux has been widely accepted as a training procedure for pediatric robotic surgery programs. In small series results have been demonstrate equal to traditional laparoscopic approach. We aimed to compare the short term results of the two approaches since the launch of pediatric robotic surgery program in our Center.

Material and Methods: Data of patients surgically treated for Gastroesophageal Reflux disease in our Centre from April 2013 to March 2023 were retrospectively reviewed. Data analysis were conducted using the surgical intuitive data analysis platform.

Results: 66 (38 males, 28 females) patients were treated. 41 out of 66 underwent Nissen Fundoplication (NF). 47 patients (group A) were laparoscopically approached (VLS-NF) and 19 (group B) underwent robot-assisted (RA-NF). The mean age at surgery was 72 months for group A and 133 for group B. The mean weight at surgery was 17.8 kg for group A and 32.3 kg for group B. The were no differences in length of stay (11,5 days for group A vs 11 days for group B), while the operative times was higher in robotics procedures (174 min vs 229 min). We reported a higher rate of complications related to surgery with laparoscopy (14.8% vs 0%).

Conclusion: In our series the use of robotics for the treatment of gastroesophageal reflux disease seems to be promising in particular in terms of post-surgical complications. The selection bias is evident in this series due to the initial indication of robotic approach to larger patients. Furthermore, the longer operative times could be affected by the larger proportion of redo surgery among RA-NF cases. Continuous monitoring of progresses, via user friendly dedicated platforms during the establishment of a robotic surgical program allows the detection of strength and weakness of the new technology.

Categories

Robotics and Innovations

P243

PLACE AND LIMITS OF LAPAROSCOPY IN MAGNET INGESTION: ABOUT TWO CASES.

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Introduction: Foreign body ingestion is one of the most common pediatric emergencies. Most of the foreign bodies pass spontaneously through the gastrointestinal tract. However, in case of multiple magnetic foreign body ingestion they can be a cause of morbidity and even mortality due to bowel perforation.

Aim of the study: The aim of this report is to insist on the lace and limits of coelioscopy in case of magnet ingestion.

Case presentation: The first case was a 3-year-old child. Radiological imaging revealed multiple round objects arranged in a circular shape resembling a ring. Surgical exploration showed multiple intestinal perforations attributed to the magnetic attraction through bowel walls. We performed intestinal resection and an end-to-end anastomosis. The second case was accidental ingestion of 3 magnets in an 8-year-old child. Radiological imaging showed a superposition of metallic pieces in the projection of the stomach area. Endoscopic extraction was impossible. Laparoscopic surgical exploration found 2 magnets in the stomach and a 3rd at the level of an ileal ulceration. We performed laparoscopy a gastrotomy and an enterotomy and extracted the magnets.

Conclusion: Physicians must be vigilant when investigating patients suspected of magnet ingestion. Early surgical intervention is recommended before gastrointestinal complications develop. Laparoscopy can easily help within localisation of magnet and sometimes extraction and refection.

Categories

Miscellaneous

LO244

EFFICACY AND SAFETY OF TRANSARTERIAL EMBOLIZATION IN BLUNT TRAUMA IN CHILDREN: 7-YEAR OF EXPERIENCES.

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Purpose: arterial embolization (AE) is an established approach for controlling hemorrhage in adults with acute abdominal and pelvic trauma while its application in pediatric trauma is not well established. We want to evaluate the safety and effectiveness of AE in a population of pediatric patients with blunt trauma.

Methods: We analyzed retrospectively the pediatric patients (<18years) admitted to Pediatric Intensive Care Unit (PICU) for blunt trauma between September 2016 and December 2023 evaluating the type of trauma and management and how many underwent AE. Patient demographics, injury severity, transfusion requirements, and clinical outcomes were analyzed.

Results: Exactly 303 patients were admitted to PICU. Many of these patients presented more district involved. Abdominal trauma counted for 21% (spleen, liver, kidney, bowel, adrenal glands), thoracic for 9% and pelvis form 2,9%. Only 3 patients underwent surgery for hilum involved (2 spleen, 1 kidney). 10 patients instead underwent AE. They didn't required surgery before and after embolization. Technical and clinical success of AE was achieved in all patients (100%). There were no complications and mortality. Age, body weight, and sex did not significantly affect clinical success. The injury severity score and transfusion requirement were predictors of clinical success, with lower values associated with better outcomes.

Conclusions: AE is effective and safe for managing blunt pediatric trauma in younger and lighter patients. Injury severity and transfusion requirement are predictors of clinical success.

Categories

Robotics and Innovations

P245

COMPARISON OF THE USE OF AIRSEAL® VERSUS STANDARD INSUFFLATION DURING LAPAROSCOPIC CHOLECYSTECTOMIES IN CHILDREN: A RETROSPECTIVE MONOCENTRIC STUDY.

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Introduction: The Airseal® is a constant pressure insufflation system used in laparoscopy and robot-assisted surgery. Numerous studies in adults have proven that it reduces postoperative pain, the consumption of analgesics, the length of hospitalization, and sometimes operating times. Few data exist on children.

Purpose: We studied the benefits of using Airseal compared to standard insufflation in a pediatric population.

Methods: From January 2021 to December 2022, we retrospectively studied the data of patients aged under 18 years who underwent a laparoscopic cholecystectomy using Airseal or standard insufflation.

Results: 23 patients (15 girls and eight boys) aged 6 to less than 18 years underwent laparoscopic cholecystectomy with the use of Airseal (group A) or standard insufflator (group S) by the operator. Group A consisted of nine patients, five girls and four boys (mean age = 13 years; 6-17 years), and group S, 14 patients (ten girls and four boys (mean age = 14 years; 7-17 years). Three patients had SS sickle cell disease, four had spherocytosis, and nine were overweight. Eleven patients had recurrent hepatic colic, four had acute cholecystitis, three had acute pancreatitis, and five were asymptomatic. For groups S and A, the mean anesthetic and operating times were respectively 171 and 109 minutes on the one hand and 163 and 117 minutes on the other hand, the mean insufflation pressure was 11 mm Hg versus 8.5 mm Hg, the numerical pain scale means 3/10 versus 2.5/10, and the average consumption of level 2 analgesics was approximately two to five times higher. The length of hospital stay and the postoperative follow-up were similar.

Conclusion: Our results are interesting, but the sample size is small. More prospective studies are needed to assess the value of Airseal in pediatric laparoscopy.

Categories

Robotics and Innovations

SO246

OVARIAN SPARING SURGERY IN NOT-SPONTANEOUS PEDIATRIC AND ADOLESCENT OVARIAN TORSION. TEN-YEARS MONOCENTRIC EXPERIENCE.

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Introduction: Surgical management of ovarian torsion (OT) includes total oophorectomy or ovarian preservation surgery. Surgeons are sometimes worried about the possibility to inadequately treat an underlying ovarian cancer during an emergency procedure. We describe our experience in the management of non-spontaneous OT.

Patients and Methods: Over a 10-year period, we observed 60 cases of OT in pediatric and adolescent patients. Mean age was 11 years and mean interval between onset of symptoms and arrival at the ED was 2,8 days. 60% of cases involved the right ovary and 40% of cases the left ovary. Clinical presentation included abdominal pain, vomit, abdominal swelling. In the diagnostic process, anamnestic data collection was followed by abdominal US in all cases, and by abdominal CT-scan in 10 cases. The lesions mean diameter at imaging was 62mm. 80% of OTs (48 pts) were due to a cystic or a solid mass, whereas 20% of OTs were spontaneous. The surgical exploration was immediately performed laparoscopically in an emergency setting. In all cases tumor markers were pre-operatively dosed. Ca 19-9 was elevated in 2 cases, Ca-125 in 5 cases, Beta-HCG in 3 cases.

Results: Detorsion was performed in all cases, preceded by peritoneal washing. In 5 patients ovariectomy was performed because the ovary seemed completely necrotic, in 4 cases adding adnexectomy. In the rest of patients (39 cases), ovarian-sparing surgery was achieved, enucleating the mass by stripping maneuvers (in cystic lesions) or by tumorectomy with sealing devices, and extracting the mass in a bag. Histopathologic examination identified serous cysts (20), cystic teratomas (11), dermoid cyst/solid teratomas (10), hemorrhagic cysts (4), immature teratomas (1), serous cystoadenomas (1) and mucinous cystoadenomas (1). The patient with immature teratoma was than subjected to elective adnexectomy 1 month after surgery.

Conclusions: Ovarian sparing surgery can be achieved safely also in cases of ovarian torsion and in an emergency setting.

Categories

Oncology

P247

THORACOSCOPIC RESECTION OF ANTERIOR MEDIASTINAL MASSES AFTER PREVIOUS PHARMACOLOGICAL OR SURGICAL INTERVENTIONS.

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Introduction: Minimally invasive surgery (MIS) has become a widely accepted operative access in most fields of pediatric surgery. In the population of oncologic patients MIS has become a standard mode in acquiring tissue samples. The role of MIS in solid tumor resections is still debatable especially in tumors located in the anterior mediastinum.

Purpose: Presentation of two cases of thoracoscopic resection of anterior mediastinal masses after previous pharmacological or surgical interventions.

Methods and results: Two cases of anterior mediastinal tumor in 6 years old patients diagnosed during standard upper respiratory tract infections investigation were treated in our clinic in 2023. Both patients were referred to the oncology department for diagnostics and treatment. After the initial biochemical and radiologic diagnostic procedure, the first patient was referred to the surgical department for the resection of suspected anterior mediastinum teratoma. The huge mass was resected through left thoracotomy. The postoperative course was uneventful. After the histopathological verification of thymoma the patient was again referred to the surgical department for the resection of the thymus. Thoracoscopic thymectomy was performed without complications. The patient remains in ambulatory oncologic follow up. The second patient with similar history and suspicion of germinal tumor was referred to the surgical department after neoadjuvant chemotherapy for the resection of the remaining anterior mediastinal mass. The mass war resected incompletely through left thoracoscopy without complications. The histopathologic examination revealed thymic tissue without vital tumor cells. The patient stays in remission in the ambulatory oncologic follow up.

Conclusion: MIS can be an effective tool in the resection of solid anterior mediastinal masses after previous surgical or pharmacological treatment.

Categories

Thorax

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CADAVERIC SIMULATION IN THORACOSCOPIC SURGERY: AN OPTION TO IMPROVE TECHNICAL PERFORMANCES IN TRAINEES!

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Introduction: There is growing interest in cadaveric simulation courses for surgical trainees. This is being driven by the need to modernize and improve the efficiency of surgical training within the current challenging training climate. The objective of our study was to evaluate the cadaveric simulation in performing pleurectomy procedure in thoracoscopy.

Methods: A cadaveric thoracoscopy model was used for a pleurectomy procedure. Formalinized cadavers are placed in the right and left lateral decubitus positions. One trainee has been evaluated within successive sessions of simulation. Thoracoscopy was performed using an optical trocar and two operating trocars. The time taken to perform pleurectomy was recorded along with a rating considering the quality of pleural resection, injury to adjacent organs, fluidity of the gesture and control of the procedure. Each scored out of 5 points with a total score out of 20. Intrathoracic sutures were also performed to assess the efficacy of the cadaveric model.

Results: Seven sessions were conducted, revealing a gradual decrease in pleurectomy intervention time. The improvement was noted from the 3rd procedure onwards. Indeed, the first two times were 48 and 37 minutes, followed by a drop to 26 minutes in the third. Times then held steady, with an average time of 28 minutes. There was a progressive improvement in the fluidity of the gesture, mastery of the procedure and quality of the final resection with scores ranging from 11/20 for the first session to 19/20 for the last. Intrathoracic sutures were also successfully performed.

Conclusion: The human cadaveric model can serve as a valuable simulation tool for thoracoscopy. It induces short-term skill acquisition of straightforward procedures such as pleurectomy or suturing in thoracoscopy. More complex surgical techniques could be evaluated using this model.

Categories

Thorax

SO249

ROBOTIC ASSISTED LAPAROSCOPIC REPAIR OF BILATERAL SINGLE SYSTEM ECTOPIC URETERS WITH TRIGONAL AGENESIS IN A GIRL, A FEASIBLE SURGICAL CHALLENGE.

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Purpose: Bilateral single ectopic ureters with trigonal agenesis is a rare and difficult to treat condition.

Material and methods: We report the case of an 8years old girl presenting with urinary incontinence. Retrograde cystography showed a bilateral single system ectopic ureters associated with trigonal agenesis and bladder hypotrophy confirmed by cystoscopy under general anesthesia. A minimally invasive single stage complete repair was proposed. The procedure was performed under GA on lithotomy position and 15° Trendelenburg, using the DaVinci X system. A 10Fr bladder catheter was inserted. Four 8mm robotic arms were placed with the first trocar placed above the umbilicus through Hasson technique. Two 5mm assistant ports were used. The retropubic space was opened, the bladder and ureters exposed. The 2 ureters were dissected of the urethra which was closed on each side. A fascia sling was harvested from the inner rectus abdominis muscle fascia sheet and tunneled under the urethra. The sling was then stitched to the pubic bone to allow a suspension of the urethra. After sus trigonal cystectomy, a W shaped enterocystoplasty was performed and stitched to the native bladder remnant. The two ureters were anastomosed to the enteroplasty. A trans appendicular continent cystostomy was performed following the Ghoneim technique through the umbilicus. A 10 Fr urinary catheter was inserted through the Mitrofanoff and a drain was placed in the pelvis.

Results: Blood loss was minimal and surgical time was 13hours. Patient was discharged at day 20. No major postoperative complication was noted to date. At one month postoperative, the young girl has a complete resolution of the urinary incontinence and uses the Mitrofanoff.

Conclusion: robot-assisted enterocystoplasty and Mitrofanoff procedure associated with bilateral ureteral reimplantation and peri urethral fascia sling is a valid treatment in young girl presenting with bilateral single system ectopic ureters with bladder hypotrophy.

Categories

Urology

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THORACOSCOPIC-ASSISTED REMOVAL OF A DISLODGED THORACOAMNIOTIC SHUNT.

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Introduction: Fetal thoracomaniotic shunting is offered for antenatal treatment of fetal hydrops and drainage of pleural effusions. The treatment improves perinatal outcomes and survival rates. Shunt dislodgement is a known but rare complication.

Case: We report a case of a female girl born at 40+1 weeks of gestation who was referred to our department due to intrathoracic dislodgement of a fetal thoracoamniotic shunt. The thoracoamniotic shunt was placed antenatally at 32+4 weeks of gestation due to fetal hydrops and bilateral pleural effusions. Postnatally, a thoracic x-ray and ultrasound showed that the shunt was dislodged in the thoracic cavity and broken into two parts. There was no recurrence of pleural effusions. At 4 weeks of age, thoracoscopic-assisted removal of the shunt was performed. One part of the shunt was located directly under the skin and was retrieved via a small skin incision. The second part was removed thoracoscopically. Operative time was 58 minutes. There were no intraoperative or postoperative complications, and the girl was discharged home on postoperative day 2. At follow-up 6 weeks later, the girl showed normal lung function and the scars had healed well.

Conclusion: The thoracoscopic-assisted approach is a feasible and minimal invasive treatment option for removal of an intrathoracic displaced thoracoamniotic shunt, which shows rapid recovery and good cosmesis.

Categories

Thorax

P252

FLEXIBLE BRONCHOSCOPY IN CHILDREN WITH LOW SUSPICION OF FOREIGN BODY ASPIRATION MAY OFFER AN ALTERNATIVE FOR UNNECCESSARY RIGID BRONCHOSCOPIES.

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Purpose: Foreign body aspiration (FBA) is a life-threatening incident. Rigid bronchoscopy(RB) is the gold standard procedure. Even in children with no foreign bodies; not totally secure airway, risk of dislocation of foreign body, severe bronchospasm and bleeding are some notable risks. Flexible bronchoscopy(FB) via laryngeal mask which has started to be used recently for FBA doesn't irritate airway such as rigid one. The diagnosis may be made easily in case of witnessed history. But in case of not, children may develop non-specific symptoms. The aim is to discuss the efficacy of FB in cases of low-suspicion FBA.

Patients and Methods: The charts of children who underwent RB due to suspected foreign body aspiration between 2022-2023 and FB/RB between 2023-2024 were evaluated. Children without witnessed aspiration or unilateral auscultation findings were assessed to be at low risk of FBA and children with these signs as at high risk. Both groups had been undergone RB before 2023. Children at low risk underwent FB after 2023. It was converted to rigid if a foreign body was observed. RB was introduced at first step if the child was at high risk. Observed foreign body rates and complications were compared.

Results: There were 160 children. Before 2023, 106 children underwent RB. In 50 of children(42%) there were no foreign bodies. After 2023 FB was performed in 29 children who were at low risk and no foreign bodies in 23(80%). 25 children at high risk underwent RB and foreign bodies were found in 20(80%).

Conclusion: FB may be used in children with low risk of FBA. It may offer a minimal invasive alternative to RB in diagnostic challenges as a final diagnostic tool. Increased rate of positive foreign body in RB after the introduction of FB shows providing unnecessary RBs.

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Thorax

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THORACOSCOPIC LOBECTOMY VS WEDGE RESECTION OF CONGENITAL LUNG MALFORMATIONS - A SINGLE CENTER EXPERIENCE AND LONG TERM FOLLOW UP.

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Introduction: Advances in prenatal and postnatal diagnosis have increased the prevalence of congenital lung malformations (CLM) and the need for standardization in their management. Although some Authors favor an early resection of the lesion, the risk of recurrent lesions after surgery is barely unexplored. We aim to review our series of patients submitted to mininvasive treatment, either lobectomy or wedge resection, who have undergone long-term follow-up.

Methods: We retrospectively collected demographics, imaging, surgical technique and long-term follow-up data of CLM patients operated between 2007 and 2023, at a single center, with minimally invasive approach.

Results: Fifty-five patients were treated, 5 through laparoscopy (subdiaphragmatic sequestrations) and 50 thoracoscopy, of which 20 consisted of lobectomies and 30 of wedge resections. Mean age at surgery was 1.74 years. Preoperative diagnoses were 31 pulmonary sequestrations, 16 CPAM, 4 bronchial atresia, 2 bronchogenic cysts, 2 lobar emphysema; the majority were confirmed by histologic reports, while in 4 the final diagnosis differed (2 reports missing). In 41 patients the CLM involved the inferior lobe (23 left, 18 right), 6 superior lobe (5 left, 1 right), 1 medium lobe. Ten postoperative complications occurred: 1 bleeding, 1 pneumothorax, 2 pleural effusions, 1 subcutaneous emphysema; 5 patients showed recurrent disease at second-level imaging, all of them had undergone wedge resection (3 intralobar sequestrations, 1 CPAM and 1 distal bronchial atresia, both involving at least 50% of the lobe). At a mean follow-up of 5.75 years, 29 patients are completely asymptomatic, 5 show mild chest wall deformities and 10 are followed-up by Pulmonologists for asthma.

Conclusion: Lobectomy seems a safer choice for the surgical management of specific types of CLMs, for whom wedge resection could bear the risk of recurrent lesions. Long-term second-level imaging is highly recommended after a wedge resection, also in asymptomatic patients.

Categories

Thorax

P255

HIGHLIGHTS AND POTENTIAL BENEFITS OF CHATGPT IN PEDIATRIC MINIMALLY INVASIVE SURGERY.

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Introduction: This study aims to present an exhaustive review of the current literature on the application of ChatGPT, an Artificial Intelligence (AI)-based tool, in the field of pediatric surgery. The study provides a comprehensive understanding of the viability and feasibility of ChatGPT as a tool for enhancing the quality of surgical practice and education in Pediatric Surgery, Pediatric Urology Surgery and Pediatric Gastroenterological Surgery.

Materials and methods: This study thoroughly examined the literature on the use of ChatGPT in Pediatric Surgery, Pediatric Urology Surgery and Pediatric Gastroenterological Surgery. The researchers followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to ensure a comprehensive and transparent review process. We have included all the articles found using the keywords “chatGPT AND Pediatric Surgery”, “chatGPT AND Pediatric Urologic Surgery”, “chatGPT AND Pediatric Gastroenterological Surgery”, “chatGPT AND Thoracic Surgery” and “chatGPT AND Surgery”. Data from these studies were analyzed to provide an overview of the current state of research on the use of ChatGPT in pediatric surgery.

Results: We found 423 papers in the literature matching the keywords, all published in 2023. Twenty-one percent of the studies (n=89 out of 423) met the inclusion criteria and were included in the final analysis (7% pediatric surgery, 8% pediatric urologic surgery, 5% gastroenterological surgery, 5% thoracic surgery and 75% surgery in general).

Conclusion: The study highlights potential benefits of ChatGPT in pediatric minimally invasive surgical skills. Additionally, ChatGPT could support surgeons in preoperative virtual simulation, 3D-visualization, risk-assessment, and surgical planning. Postoperatively, large data processing and real-time data evaluation could be obtained. However, there are certain limits associated with its use, including question format restrictions, difficulties in validating outputs and algorithmic bias. It is important to continue developing AI tools in minimally invasive pediatric surgery to better understand their benefits and future applications.

Categories

Robotics and Innovations

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COMBINED PORCINE-AVIAN MODEL: A NOVEL ANIMAL TISSUE MODEL FOR SIMULATING RETROPERITONEOSCOPIC PYELOPLASTY IN CHILDREN.

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Purpose: Literature lacks validated models for training retroperitoneoscopic pyeloplasty in children. We introduce and validate an animal tissue model for retroperitoneoscopic pyeloplasty, which has been developed and utilized in our Minimally Access Surgery (MAS) paediatric course since 2018.

Materials and Methods: An observational study was conducted during an international Minimally Access Surgery Skill Labs training in August 2023. In the first phase of this training program, laparoscopic exercises were performed in the peritoneal cavity of fresh chicken cadavers (avian model). As a second phase, the crop and the oesophagus of the same chicken were connected to a piglet kidney and positioned on a semi-vertical surface, simulating the position of the renal pelvis during retroperitoneoscopy. Subsequently, this model served as the basis for simulating dismembered retroperitoneoscopic pyeloplasty on a standard pelvic trainer, using instrumentation that mirrored the commonly practiced approach. Validation data were collected through an analysis using a 5-point Likert scale questionnaire rooted in the Michigan Standard Simulation Experience Scale (MiSSES).

Results: Seventeen participants were recruited (11 females: 6 males). Nine delegates (53%) had experience with fewer than 50 MAS cases, one delegate (5%) had 50–100 cases, and seven delegates (41%) had more than 100 cases. The mean perceived degree of retroperitoneoscopic pyeloplasty realism was 4.56. The perceived degree of acquiring knowledge of retroperitoneoscopic pyeloplasty was 4.41, and deploying practical skills was 4.65. The overall satisfaction with the avian model was 5.

Conclusion: The constructed model has the potential to function as a high-fidelity animal tissue model suitable for simulating retroperitoneoscopic pyeloplasty. The participants' assessments confirm the high realism and effectiveness of this model.

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Robotics and Innovations

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THE IMPORTANCE OF THE ARTERIA EPIGASTRICA IN LAPAROSCOPIC INGUINAL HERNIA REPAIR.

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Introduction: The inguinal canal is a channel in the abdominal wall formed by the oblique muscles, serving as the passage for the spermatic cord in men and the round ligament in women. The inferior epigastric artery (A. epigastrica inferior) originates as a branch of the external iliac artery (A. iliaca externa), supplies the abdominal wall, and is located immediately medial to the inguinal canal. The inferior epigastric artery is a structure that requires attention, especially during surgical procedures, as it can be damaged during inguinal hernia repairs.

Patients and Methods: The study included 203 male patients who presented with indirect inguinal hernias and underwent repair using the PIRS technique. The patients' age, the side of the inguinal hernia, the shape of the internal ring of the inguinal canal, and the relationship between the medial wall of the inguinal canal and the A. epigastrica were evaluated.

Results: The average age of the children was 22 months. Of the inguinal rings examined, 122 were on the right side and 81 on the left. The inferior epigastric artery was prominently visible in 171 of the inguinal rings (84.2%) and formed the medial wall of 10 rings (4.9%). In 15 rings (7.3%), it did not intersect with the ring at certain angles. In the 188 rings where it intersected with the medial wall, the angle of intersection was 43.7 degrees.

Conclusion: During high ligation of the inguinal canal, in addition to the spermatic cord and testicular vessels, the inferior epigastric artery is also an important structure to consider. It is of vital importance, especially in cases where it forms a common wall.

Categories

Urology

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HYDROSALPINX WITH FALLOPIAN TUBE TORSION : THE BENEFIT OF AN EARLY LAPAROSCOPIC DIAGNOSIS AND TREATMENT IN PEDIATRIC POPULATION.

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Introduction: Hydrosalpinx is an accumulation of serous fluid in the lumen of the ampulla owing to a distal occlusion at the infundibulum. It could be related to anatomical causes, such as abnormality of length, mobility, and structure or to secondary causes. Nevertheless, Fallopian tube torsion associated with hydrosalpinx is rare but can impact on fertility owing to the possible adnexal torsion. Diagnosis could be difficult using standard diagnostic procedures such as ultrasonography and MRI. In most patients, a definitive diagnosis is obtained only through laparoscopy.

Observation: A 12-year-old girl presented with lower-quadrants abdominal pain that started since two weeks, associated with several episodes of vomiting. Physical examination revealed lower-quadrants pain. Laboratory tests revealed that her white blood cell count was 15000/mm3 and the C reactive protein value was 55 mg/dl. Ultrasonography revealed the presence of bilateral adnexal cyst with free pelvic fluid. The MRI showed a 3 cm adnexal cystic mass with a normal appearance of the ovaries. Fallopian tube torsion was suspected. An emergency laparoscopy was performed. During exploration, both fallopian tubes were dilated, with a twisted left salpinx. Left ovary was normal and adherent to the left tube. Right ovary was not identified. Right tube was very adherent to peritoneum. We performed a puncture and aspiration of right tube which yielded 8 mL of brownish fluid. The left fallopian tube was untwisted, and we performed a puncture and aspiration which yielded 50 mL of brownish fluid. We finally performed a left salpingotomy to evacuate the remaining fluid. The postoperative course was uneventful.

Discussion: We could suggest that in pediatric patients, in case of acute abdominal pain associated with ultrasonography pelvic cystic image or diagnosed hydrosalpinx, a diagnostic laparoscopy should be performed as soon as possible in order to preserve the tube in case of torsion.

Categories:

Miscellaneous

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ROBOTIC ASSISTED CHOLECYSTECTOMY PRELIMINARY EXPERIENCE.

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Purpose: We aimed to describe our surgical series of robotic assisted cholecystectomies (RAC).

Materials And Methods: Data of patients who underwent RAC from January 2020 to December 2023 were reviewed. Gender, age at surgery, operative time, length of stay and complications were analyzed.

Results: Since the start of the pediatric robotic program at our center 6 RAC have been performed. Four patients had hematologic diseases (Spherocytosis and Depranocytosis) while two had congenital hemolytic anemia and xanthogranulomatous cholecystitis respectively. 5 were males and one female. Two patients underwent splenectomy at the same operation due to the haematologic disease. In three cases green indocyanine was used. The mean age at surgery was 169.4 months (61 - 214 months), the mean robotic operating time was 143 minutes (65 - 249 min); none presented complications.

Conclusion: Cholecystectomy is a training procedure for an establishing robotic surgery program. In our experience the robotic approach is often indicated when a splenectomy is required. Longer operative time, compared with traditional laparoscopy in isolated robotic cholecystectomy, is in keeping with the trend of other robotic procedures and may reflect the training process. The ease and smoothness of the procedure in experienced hands may prompt a future shift from traditional laparoscopy to RAC.

Categories

Robotics and Innovations

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ROBOTIC-ASSISTED LAPAROSCOPIC RADICAL NEPHRECTOMY FOR WILMS TUMOUR IN CHILDREN.

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Background: Despite the growing application of minimally invasive surgery in the field of paediatric oncology, radical nephrectomy (RN) by open surgery remains the gold standard for Wilms tumor (WT) treatment. Benefits of robotic surgery has been suggested for WT management but studies are lacking. This study aimed to present the outcomes of children undergoing robotic-assisted RN (RARN) for WT.

Methods: A prospective institutional analysis of children presenting with WT treated with RARN was undertaken from December 2016 to December 2023.

Results: 22 children underwent RARN at a median age of 4.2 years (IQR 3.4-5.1), accounting for 25% of WT treated in our center. Staging was I (n=12), II (n=6) and III (n=4). Two patients had positive lymph nodes, 1 patient had vena cava positive margin following tumoral thrombectomy and 1 patient had a tumor infiltrating the liver. Histology showed regressive type (n=8), mixed type (n=6), diffuse anaplasia (n=4), focal anaplasia (n=1), stromal type (n=2) and blastemal type (n=1). Median lymph node sampled was 5 (IQR 2-10). Three conversions occurred including one emergency undocking. Partial diaphragmatic resection occurred in 6 children (27%) and was associated with admission in the intensive care unit. Two children required postoperative chest drainage for persistent pneumothorax (Clavien-Dindo IIIb). One child developed a diaphragmatic hernia following radiotherapy. Median length of stay was 4 days (IQR 3-4). After a median follow-up of 3,9 years (IQR 2.0-5.2), all children but one are alive (one female died from central nervous system metastases), the patient with tumor infiltration in the liver developed pleural metastasis and is in complete remission.

Conclusions: This study confirms the safety and effectiveness of RARN in carefully selected children with WT. Based on our experience, tumors crossing the midline or infiltrating the liver are two formal contraindications for a robotic approach.

Categories

Oncology

P264

HOW COMPLICATED CAN IT GET? FOREIGN BODY ASPIRATION IN A CHILD WITH TRACHEOSTOMY AND SUPRASTOMAL COLLAPS: A CHALLENGING CASE.

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Purpose: Foreign body aspiration is a common problem in childhood. It may have worse consequences in children with tracheostomies due to various reasons. In this report it was aimed to present a challenging case of foreign body aspiration in a child with tracheostomy.

Patients and Methods: 19 months old female patient with Kartagener syndrome who is followed with tracheostomy was applied to the center with respiratory distress. Caregiver of the child has told the history of dropping a part of brush inside through to the tracheostomy cannula during daily care. Respiratory insufficiency was obvious and there was decreased respiratory sounds at right hemithorax.

Results: Rigid bronchoscopy could not perform due to suprastomal collapse because of long term tracheostomy. Flexible bronchoscopy revealed foreign body in right main bronchus. Balloon dilatation was performed it was not enough to insert rigid bronchoscope anyway. Since the child was stable another dilatation session after two days was planned. In this session after the dilatation, subcutaneous emphysema and right sided pneumothorax was observed and the child has become unstable. Tube thoracostomy was performed, and the child went to the intensive care unit. The child became stable after 5 days and brought to the operation room. Flexible bronchoscope was inserted through the tracheostomy cannula and an alligator forceps was inserted through the vocal cords in the guidance of a video laryngoscope. Under the visualization of flexible bronchoscope, the forceps was directed to the right main bronchus and the foreign body was removed. The symptoms were resolved, and the patient was discharged at postoperative third day.

Conclusion: Foreign body aspiration may even be more challenging in children with tracheostomy if they have suprastomal collapse. Flexible bronchoscopy via tracheostomy may be lifesaving in these types of situations.

Categories

Thorax

P265

FEASIBILITY AND SAFETY OF LAPAROSCOPIC SURGERY IN OVARIAN MASSES: A SINGLE CENTER EXPERIENCE IN A DEVELOPING COUNTRY.

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Introduction: Laparoscopy is increasingly proposed for ovarian masses in children, for both diagnostic and therapeutic purposes. The aim of our work was to assess the efficacy and morbidity of laparoscopic treatment.

Patients and methods: We conducted a retrospective study of 6 girls with ovarian masses admitted to our department during two-year period (2021-2022).

Results: The mean age of patients was 7 years. Pelvic pain was the most reported symptom. Pelvic ultrasound was performed in all cases, revealing a cystic image in 4 cases and a heterogeneous formation in the other 2 cases. A complementary scan was indicated in one patient, showing a pelvic mass with a triple component of fat, calcium and fluid. The average diameter of the masses was 40 mm (35 mm – 70mm). Tumor markers were negative in all cases. All patients underwent laparoscopic treatment including tumorectomy with extraction of the mass protected in an endobag without drainage. No intraoperative rupture occurred. The ovarian parenchyma was preserved in all cases. Analgesia was provided by level 1 analgesics. The average hospital stay was 24 hours. Pathological examination revealed a mature teratoma in 4 cases and a dermoid cyst in two patients. No recurrence was noted with an average follow-up of 17 months.

Conclusions: Laparoscopy may be indicated for therapeutic purposes in presence of ovarian mass in children. It is an effective and comfortable technique for patients. However, there is a risk of not recognizing a malignant lesion, and of tumor rupture. Strict rules must therefore be observed.

Categories

Oncology

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EXTRACTION OF COTTON FIBER BALL CAUSING VAGINAL DISCHARGE IN AN EIGHT-YEARS-OLD GIRL BY VAGINOSCOPY.

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Introduction: We aimed to describe a pediatric case of vaginal discharge caused by the presence of a foreign body without any history of self-vaginally inserted objects.

Case presentation: An eight-year-old girl, accompanied by her mother, was consulted many times for foul-smelling vaginal discharge. She had no fever, neither abdominal pain, or vulvovaginitis. She vehemently denied any self-inserting objects in her vagina or attempt from another person. The ultrasound was unremarkable. Treatments such as vaginal irrigation using a urinary catheter, antibiotics, or antifungals were inefficient. As the symptoms persisted, we decided to perform a vaginoscopy. We removed a lot of cotton fiber from the vagina. When we showed the evidence to the patient's mother, she recognized the fibers of the girl's teddy bear.

Conclusion: The presence of a foreign body in the vagina is an uncommon cause of vaginal discharge in pediatrics. Cases of unknown vaginally inserted objects are rarer in older girls. Therefore, unknown tissue shedding is a possible etiology that should be considered and kept in mind.

Categories

Miscellaneous

P267

URETERORENOSCOPY-LITHOTRYPSY (URS-L) IN CHILDREN. MULTIPARAMETRIC STUDY.

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Introduction: Children constitute about 3% of the total number of patients with urolithiasis. The etiology of the stone formation in children is multifactorial. The decisive factor is choosing the optimal diagnostic and treatment method.

Material and method: The evaluation assessed 125 children, aged 12 months – 16 years of age. The clinical material was collected prospectively.

Results: The overall percentage of effectiveness was 86.4%. However, in the youngest age group, a greater risk of failure of the procedure can be expected. The position of the deposit in the lower section of the right ureter is the most favorable, and the position of the stone in the lower section of the left ureter is the most unfavorable in terms of the effectiveness (p-value=0.00917). The different anatomical course of the ureter in its lower part has a significant influence on the effectiveness of the URS-L procedure. It is important to emphasize that the length of the procedure had a significant impact on the time of hospitalization – the longer the procedure, the longer hospitalization(p-value=0.001). The occurrence of fever after the surgery had statistical significance in the youngest patients.

Conclusions: Ureterorenoscopy in children is safe and effective therapy for ureterolithiasis, provided that an experienced paediatric urologist carries it out. Such a procedure is the standard for treating ureterolithiasis in clinical centers with the highest degree of reference. Ureterorenoscopy with laser lithotripsy is a safe and effective method of treating urolithiasis in children, evidenced by the low percentage of complications and the low level of complications themselves.

Categories

Urology

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MANAGEMENT OF ESOPHAGEAL STRICTURES IN PATIENTS WITH EPIDERMOLYSIS BULLOSA BY BALLOON DILATION: LONG TERM OUTCOMES.

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Purpose: We aimed to present the long-term results of patients who developed esophageal stricture on the basis of epidermolysis bullosa and underwent endoscopic balloon dilation.

Patients and Methods: The charts of 31 patients with epidermolysis bullosa and esophageal stricture who were included into dilation program between 2003 and 2021 were retrospectively reviewed.

Results: 19 of the patients were female and 12 were male. Median age was 17 (3-41)years. The strictures were dilated 186 times in total (mean 6 times). It was observed that the average of the dysphagia scores of the patients at the time of first admission was 2,03 and this average was 0.86 in the long-term results. Two patients underwent gastrostomy. In one of the patients, perforation developed during the dilation procedure, and in the other child the stenosis could not be passed with the endoscope at all. The dilation program of 13 patients is still in progress. One patient died from urinary problems and one patient died from complications related to amyloidosis by refusing colon interposition during the dilation program.

Conclusion: Even though the esophagus could not visualize and passed with a scope endoscopic balloon dilation is still applicable and gastrostomy may be avoided. The long-term results of the study seem satisfactory.

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Gastrointestinal

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BOWEL AND BLADDER DYSFUNCTION: DESCRIPTION AND PRESENTATION OF ENDOSCOPIC ASPECTS OF RELATED PATHOLOGIES.

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Introduction and aims: Over the last year, 56 cases of bladder and bowel dysfunction have come to our attention. We excluded from the study the 41 patients affected only by functional bladder emptying disorders. the aim of this work is to show the endoscopic pictures of pathologies related to the BBB.

Materials and methods: 15 patients in the study: 2 affected by VUR, 1 male and 1 female, 8 recurrent orchiepididymitis, 5 chronic urethritis associated with an overactive bladder: all these patients were male. The 2 patients with VUR were treated with behavioral and medical therapy to resolve the BBD and endoscopic treatment of the VUR. The 8 patients with orchiepididymitis had an endocopic picture of detrusor hypertrophy, chronic inflammation of the veru montanum, widening of the orifices of the seminal tract, seminal reflux, spasm of the urogenital diaphragm, they were treated with antibiotic therapy and behavioral and pharmacological therapy for BBB, probiotics and cramberry. In 1 case endoscopic treatment of a large prostatic utricle was performed. The 5 cases that showed symptoms of urethritis, had detrusor hypertrophy, inflammation of the veru montanum region, spasm of the urogenital diaphragm, chronic urethritis with lifting of the urethral mucosa in folds starting from the latter. They were treated with long-term antibiotic therapy, probiotics, behavioral and pharmacological treatment for BBD.

Results: The two cases affected by VUR have currently recovered. Three of the eight patients suffering from orchiepididymitis also continue to manifest symptoms of BBD. Two of the five patients suffering from chronic urethritis continue to experience symptoms and bladder emptying disorders.

Conclusions: BBD causes dysfunctional patterns of bladder emptying which can lead to serious pathologies of both low and high urinary tract. A careful anamnesis on the presence or absence of constipation in patients suffering from urinary disorders must always be carried out.

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Urology

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QUADRATUS LUMBORUM BLOCK IN ESWL - NOVEL PERIOPERATIVE PAIN MANAGEMENT STRATEGY IN CHILDREN POPULATION – PROSPECTIVE STUDY.

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Urolithiasis in children is a globally growing problem. Annual reports show the increase in the number of hospitalizations. Kidney stone disease in the pediatric population is a multifactorial disease. Due to a high risk of recurrence, the children require surgical intervention and anesthesia practically every time. There are studies confirming the negative effect of general anesthesia. The aim of this paper is to introduce the method, safety, and effectiveness of treating urolithiasis in children with the application of ESWL using regional anesthesia QLB and limiting the use of intravenous anesthetics and analgesics during and after the procedure.

All the presented procedures were performed in a one-day urology mode. In a prospective study, we evaluated 211 patients (aged 2–18 years;mean 8.7) treated for urolithiasis with the stone size 5-20 mm (mean 10.7 mm) according to the VAS scale: during the puncture and in the 5th, 10th, 15th, 20th and 25th minute of the procedure, after the procedure, at discharge, and during the morning follow-up.

The length of the treatment varied from 25 to 45 minutes. The length of hospital stay from 5 to 7 hours (mean 5.5 hours). In all the cases the VAS scale did not exceed 4 points. Only three of the children required urgent admission to the hospital at night. The follow-up ultrasound evaluation was performed at the clinic the next morning. The overall efficiency of the ESWL procedure was 83.5%. After the follow-up ultrasound examination only 5% of the patients required admission to the hospital for an endoscopy procedure. The duration of pain relief was observed from 8 to 36 hours (a mean 14 hours) after the QLB analgesia.

The number of patients and results of clinical analysis confirmed that such an anesthesia strategy in ESWL procedure is secure and effective and has numerous advantages.

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Urology

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25TH-YEAR OF EXPERIENCE WITH THORACOSCOPIC APPROACH FOR ESOPHAGEAL ATRESIA WITH TRACHEOESOPHAGEAL FISTULA – RESULTS, EVOLUTION AND IMPACT OF THE TECHNIQUE.

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Introduction: This study aims at comparing thoracoscopic management of type C and D esophageal atresia/tracheoesophageal fistula (EA/TEF) between two high-volume centers in Europe and USA, with one being a pioneer of thoracoscopic approach for EA. The results and evolution of the technique were evaluated.

Methods: We included patients with type C and D EA/TEF treated between 2000-2023 in Centre A and between 2005-2023 in Centre B. Demographics, surgical management and outcomes were collected and compared.

Results: First thoracoscopic type C EA/TEF repair was performed in Centre A in April 2000. Centre B performed the first one in Poland in August 2005. The study population involved 180 patients–Centre A and 161 patients–Centre B. All consecutive patients were treated only thoracoscopically as primary esophageal anastomosis with 1 patient converted to open-Centre A and no conversion-Centre B. In almost all cases it was one-stage thoracoscopic approach. 6 newborns-Centre A and 5-Centre B required two-staged EA repair because of intraoperative instability: at first stage TEF closure and in the second stage-esophageal anastomosis. Analyzed postoperative complications included: anastomotic leakage-11/180, 6.1% (Centre A–9/11 treated conservatively) and 11/161, 6.8% (Centre B)-all treated conservatively; stricture rate, requiring at least one dilatation-16% (Centre A) and 32.9% (Centre B) with $p<0.001$; need for fundoplication 12.6% (Centre A) and 3.9% (Centre B) with $p=0.005$, recurrent TEF–1.1%-2 patients (Centre A) and 1.3%-2 patients (Centre B), need for aortopexy–2.3% (Centre A) and 0.7% (Centre B). Mean time for anastomosis was 85'(45'-150')-Centre A and 94'(46'-245')–Centre B. In all cases native esophagus was preserved. There was no requirement for esophageal replacement in the entire population from both centers.

Conclusions: Thoracoscopic approach for EA/TEF repair with primary esophageal anastomosis is safe, feasible and may be considered as preferred in experienced surgeons' hands.

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Thorax

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HOW TO DEAL WITH A TRICKY RECURRENT FISTULA TRACHEOESOPHAGEAL FISTULA ENDOSCOPICALLY: USE THE OTHER POINT OF VIEW.

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Introduction: Endoscopic treatment of Recurrent Tracheoesophageal Fistula (rTEF) in esophageal atresia (EA), is more common used the last years. Different techniques have been described by bronchoscopy and esophageal approach. We present a combined endoscopic treatment in a long-term rTEF, closed by esophageal approach.

Methods: A newborn female with a history of AE type-III, operated by an open thoracotomy was re-operated due to a presence of rTEF. At the follow-up was diagnosed by a new recurrent of the fistula and treated several times by bronchoscopy with apparently closure. By the 12 years-old she consults in our center and diagnostic of a new recurrent of the fistula in a contrast study. We perform a bronchoscopy finding a millimeter hole nearly visible by the study, were it bubbled through the fistula. One attempt of chemocauterization was performed but, due to the characteristics of the fistula this was not enabled to perform. We decided to perform an esophageal endoscopy to confirm the fistula in which diagnosed was confirm by bronchoscopy. We treated by mechanical abrasion with endoscopic brushed by esophageal endoscopy under the bronchoscopy vision to secure the brushed, then we perform a peri-fistula mucosectomy, with a closure of the fistula using esophageal clips. A new combined endoscopy was performed 6 weeks later, confirmed the closure of the fistula. No re-admissions and new symptomatology were registered to the date.

Conclusion: Combined endoscopic treatment by bronchoscopy and esophageal endoscopy is an alternative for patients with a high risk of recurrence and fistulas with difficult approach by broncoscopy. This treatment may require fewer sessions than other endoscopic procedures.

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Thorax

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SURGERY FOR OVARIAN TERATOMAS IN CHILDREN: A TWENTY YEARS' EXPERIENCE.

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Aim: We report our single-center experience for the treatment of ovarian teratomas.

Methods: The following data from patients with a hystopathological diagnosis of teratomas, treated between 2003-2023, were retrospectively collected: symptoms, pre-operative workup, age at surgery, kind of surgery, operation time, hospital stay, intra- and post-operative complications and follow-up. A descriptive analysis was then conducted.

Results: In the span of 20 years, 29 children were treated for ovarian teratoma. 3 patients were asymptomatic with incidental diagnosis, in the remaining cases the main symptom at presentation were abdominal pain (24) and nausea/emesis (2). Diagnosis was suspected by ultrasound in 26 cases, of which 17 underwent further radiological investigation such as CT/MRI. 1 patient had bilateral localization of disease, the rest was equally split between left and right localization. Mean age at intervention was 10,7 years. On first approach open surgery was performed in 9 cases, laparoscopy in 13 cases and robotic surgery in 7; there were 2 cases of conversion from laparoscopic to open and from robotic to laparoscopic surgery respectively due to high intraoperative spilling risk linked to the great dimensions of the mass. Ovarian-sparing surgery was achieved in 1 patient undergoing open surgery for bilateral disease, in 10 patients undergoing laparoscopy and in 4 patients undergoing robotic surgery; ovarectomy was performed in 14 cases. Patients with an ovarian diameter <8cm at pre-operative imaging and those who underwent elective surgery tended to have a higher chance of sparing surgery. 2 recurrences were found with a median follow-up of 4 years.

Conclusions: We conclude that minimally invasive surgery allows for a greater rate of sparing surgery success. In our experience, open surgery and conversion to open surgery were correlated with the presence of a mass >8cm.

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Oncology

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LAPAROSCOPY FOR SYMPTOMATIC MECKEL'S DIVERTICULUM - STILL A CHALLENGE IN PEDIATRIC PATIENTS?

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Background: Symptomatic Meckel's diverticulum (MD) in pediatric patients requires surgical treatment. Laparoscopy has become the standard. procedure. The aim of the presented study was to analyze advantages of laparoscopic approach in surgery for Meckel's diverticulum in a10 year period at tertiary center.

Methods: Patients treated for symptomatic Meckel's diverticulum at the tertiary hospital during the period January 2014 - December 2023 were retrospectively analyzed. Demographic data, clinical presentation, duration of symptoms, type of surgery, operative findings, postoperative course, length of hospital stay (LOS) and outcome were evaluated. Statistical analysis were performed using MS Excel for Mac 2011.

Results: 41 patients (73% males) were operated for symptomatic MD during the study period, while laparoscopy was performed in 28 patients, laparotomy was primary indicated in 12 patients (1 patient was operated by inguinal approach due to MD in hernial sac). 3 laparoscopically treated patients required conversion to laparotomy (10,7%). We observed no statistical differences in demographic data, age at presentation and duration of symptoms comparing laparoscopy and laparotomy group. Laparoscopy group had significantly shorter time to full realimenation ($p< 0,01$) and LOS ($p<0,05$). Long-term follow-up was uneventful in all patients, however laparotomy group presented with higher rate of postoperative complications based on more serious preoperative symptomatology.

Conclusion: Laparoscopy is the method of first choice in majority of patients with symptomatic MD. According to presented study laparoscopy did not reveal serious postoperative complications, in addition it significantly shortened time to full realimentation and LOS. Nevertheless, laparoscopy remains challenging in specific complicated cases (small bowel obstruction, intussusception with long history, neonates, etc.) leading into conversion or primary laparotomy indication.

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Gastrointestinal

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MY WORST NIGTHMARE AN EXTRAPERITONAL BLADDER PERFORATION. A CONSERVATIVE TREATMENT.

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Purpose: Bladder injury is a rare complication for laparoscopic appendectomy in children, can occur in adult surgery from 0,02 to 8%. We present a case of iatrogenic bladder injury, in a laparoscopic exploration for an appendix mass.

Case presentation: A 5 years-old female, was diagnosed for appendix mass and conservative treatment was performed. She was discharged after 7-days of hospitalization. Four days later, she was re-admitted for intestinal obstruction. An initial conservative management was failed and a laparoscopic exploration was performed. A urethral catheter was used and 3-laparoscopic ports were placed in the abdominal wall: umbilicus, left-side and suprapubic. The obstruction was resolved and an appendicectomy was performed. Two-days after surgery the catheter was removed, and 6d post-op she development abdominal distension, ascites and oliguria. CT-scanner revealed a large amount of ascites fluid in the abdominal cavity. Two times the urethral catheter was removed due to improvement with medical treatment and was placed again due to deterioration. A cystoscopy reveals a dome perforation with no extravasation of contrast. An unnoticed bladder injury was made by the suprapubic port, due to multiples adhesions and a thickened peritoneum. A new urethral catheter was placed and the patient was discharged at home. The catheter was removed 4 weeks later and a new cystoscopy shows the perforation sealed.

Conclusions: We considered that the conservative treatment in extraperitoneal bladder perforation is feasible in children. The index of suspicion must be high in patient with multiple adhesions and thickened peritoneum. The negative imaging studies does not exclude the presence of this complication.

Categories

My Worst Complication

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UNVEILING THE LONG-TERM OUTCOMES OF THE SHEHATA TECHNIQUE FOR INTRA-ABDOMINAL TESTIS: INSIGHTS FROM 500 CASES.

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Purpose: The Shehata technique, introduced in 2008, has gained popularity and is now widely practiced in various medical centers worldwide. Previous cohort studies and meta-analyses have demonstrated the success and reproducibility of the technique, highlighting its advantages over the Fowler Stephens approach. The study aimed to provide insights into the outcomes of the Shehata technique based on a cohort of 506 cases.

Methods: The patients included in the study were diagnosed with intra-abdominal testis confirmed through laparoscopy and had a minimum follow-up duration of 12 months. The cases were divided into two groups: Group I (2009-2013) and Group II (2014-2021). Various parameters were recorded, including patient demographics, the position of the testis from the deep ring, and the presence of associated anomalies. The primary outcome measure was the success of the procedure, defined as the testis being located in the mid or low scrotal position with good size and vascularity as detected by Doppler Complications such as ascent, atrophy, or slipped traction were also reported.

Results: The overall success rate of the Shehata technique was 89.9%, with Group II demonstrating a higher success rate (91.8%) compared to Group I (84%). The incidence of slipped traction, a potential complication, was 6.7% in the total cohort, with Group II showing a lower rate (5.1%) compared to Group I (11%). The median follow-up duration was 18 months for the total cohort.

Conclusion: This study provides further evidence supporting the efficacy and favorable outcomes of the Shehata technique for intra-abdominal testis. The findings demonstrate a high success rate and a low incidence of complications associated with the procedure. These results contribute to the growing body of knowledge regarding the long-term outcomes of the Shehata technique and may inform clinical decision-making in the management of intra-abdominal testis.

Categories

Miscellaneous

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ROBOTIC ASSISTED MEDIAN ARCUATE LIGAMENT RELEASE IN CHILDREN: A SINGLE INSTITUTION EXPERIENCE.

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Purpose: Despite some reports on minimally invasive surgical approach to treatment of median arcuate ligament syndrome (MALS), there is a paucity of literature focusing solely on the pediatric population. The aim of this study is to report our single pediatric center experience in robotic assisted surgery for the treatment of MALS.

Methods: This was a single institution retrospective review of patients ≤20 years old who underwent robotic assisted median arcuate ligament (RA-MAL) release from March 2016 to August 2023. Demographic data, perioperative variables, and 30-day complication and readmission rates were collected. A review of the patients' medical records was conducted to determine the status of their pre-operative symptoms during their first post-operative follow-up. Descriptive analysis was performed.

Results: Twenty-three patients (14 female) underwent RA-MAL release. The median age at surgery was 17 years (16-18); the median BMI was 20 kg/m2 (18-22). The median operative time was 259min (239-318). Doppler ultrasonography performed prior to the release demonstrated a median celiac trunk diameter of 2.9mm (2.2-3.7), with a peak systolic velocity of 284 cm/s (230-365). After the release, the median celiac trunk diameter increased significantly to 3.5mm (3-4) and the peak systolic velocity decreased to 199 cm/s (174-230). There were no intra-operative complications or conversion to open surgery. The median LOS was 1.4 days (1.2-2.6). Both the rate of post-operative complications and 30-day readmission were 4%. 74% of patients had resolution or improvement of their symptoms following surgery and one patient was lost at follow-up.

Conclusion: This series shows that robotic assisted median arcuate ligament release is a feasible and safe surgical approach in children, with sonographic improvement in celiac artery diameter and peak velocities, and symptomatic resolution or improvement in the majority of patients. However, further research is required to evaluate the long-term functional outcomes of these patients' following surgery.

Categories

Robotics and Innovations