IS1-1  Ventral prepuciplasty in distal penile hypospadias an “add on” or a primary procedure??

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Purpose and Background: Most of the cases of glanular and coronal hypospadias present for poor stream or cosmetic appearance. The main aim in them is to provide a visibility normal phallus. Aim: To evaluate the importance of prepuciplasty in cases of glanular/coronal hypospadias. Material and methods: All cases of glanular/coronal hypospadias presenting between June 2014-June 2017 were included. Parameters considered were meatal location, meatal stenosis and incomplete prepuce (prepuceal hood). Parents were interviewed about their perception of the disease and their expectation. The perception was graded as per their order of importance. All underwent meatoplasty with meatal advancement and prepuciplasty. The importance of prepuciplasty was evaluated. Results: 48 cases were operated and they formed the study group. Mean followup was 12 months (Range 1–36 months). Mean age at presentation was 23 month (Range 14–72 months). Mean operating time was 50 min (Range 45–60 min). Fistula at the base of prepuciplasty was seen in 2 (4%). Incomplete prepuce was considered as the main problem by 31 (65%), Meatal stenosis by 6 ((12%) and improper meatal location by remaining11 (23%). Conclusion: For the majority of the population incomplete prepuce may be a main concern, thus prepuciplasty may be considered as a main procedure rather than as an add on.

IS1-2  Evaluation Of Non stented Distally Folded Onlay Flap In Distal Penile Hypospadias Repair

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Purpose: Distally folded onlay flap for repair of distal penile hypospadias is a new technique which offers a solution for cases that is not suitable for tubularized incised plate (TIP). Also, this technique has a lower rate of incidence of meatal stenosis and fistula. Stenting of the neourethra after hypospadias repair is still controversial. Many studies have reported that nonstenting the neourethera avoid stent related problems as bladder spasm and detrusor contraction. However, the incidence of meatal stenosis and fistula increase with nonstented procedures. The aim of the current study is to report our experience with nonstented distally folded onlay flap as a trial to gain the advantage of nonstenting without its potential risk of increasing incidence of meatal stenosis and fistula.

Patients and Methods: This study included 64 patients who were not suitable for TIP. We performed distally folded onlay flap repair for these patients with a technique similar to that described previously by Elsayed et al 2010 but without using of a postoperative urethral stent. Follow up by clinical examination was done on the 3 rd , 10 th postoperative days and every 3 month after surgery for one year.

Results: The mean age of our patients was 4 years (1–8 years). Follow-up ranged from 6 to 16 months (average: 9 months). All our patients were not suitable candidate for TIP as 22 of our patients had a narrow urethral plate (35.%) while 34 patients (52.9%) had a shallow urethral plate. Four patients (6.3%) underwent previous failed repair but with sufficient amount of prepuce to be used as a flap. All children voided with little discomfort at the time of voiding only. No cases of early postoperative complications including dysuria, postoperative bleeding, hematoma, wound infection or retention of urine were noted. Excellent cosmetic results were obtained in all children except two (97%). Fifty six parents (88 %) were very satisfied or satisfied, because of the cosmetic appearance of the neomeatus and absence of any postoperative indwelling catheters with little postoperative discomfort. There were no cases of meatal stenosis. Two patients (3%) had a urethrocoutaneous fistula.

Conclusions: Nonstented distally folded onlay flap in repair of distal penile hypospadias is safe, has excellent success rate and provides high rate of parental satisfaction. The low rate of complications and high parental satisfaction seems to be promising but due to the small number of patients in this study, we still need to extend this study to verify our results.
IS1-3  Tubularized Incised Plate Technique (TIP) for Recurrent Hypospadias: a Local Experience

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Purpose: Tubularized incised-plate (TIP) repair has been well described for the use in salvage hypospadias repairs with good results. The study aims to evaluate our local experience of TIP repair (Snodgrass method) in the management of recurrent hypospadias.

Patients and Methods: This prospective, descriptive study was conducted over a period of 5 years from June 2012 to June 2017. The study included 90 patients, all of them had previously undergone hypospadias repair, and the indication for surgery was complete failure of the previous repair. Classic TIP repair was performed although tissues for barrier layers between the neourethra and skin closures were not as readily available.

Results: Secondary TIP repair was successful in 80/90 patients (89 %) who showed no postoperative complications and had a slit like meatus and a forward directed urinary stream without branching with their parent’s satisfaction with of the repair results.

Conclusions: Our local experience coincide with data of the literature that TIP is an excellent option in treatment of recurrent hypospadias when the primary techniques results are unsatisfactory.

IS1-4  Down-regulation of FGF10 in hypospadias prepuce

Juntendo University School of Medicine, Pediatric General & Urogenital Surgery
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Purpose: Fibroblast growth factors (FGF) expressed in the genital tubercle, especially FGF8 and FGF10, may be implicated in the morphogenesis of external genitalia. We investigated the expression of FGF8 and FGF10 in hypospadias prepuce to confirm any correlation.

Methods: Hypospadias was classified according to the location of the external meatus as coronal/subcoronal (mild; n=7), midshaft (moderate; n=6), or penoscrotal (severe; n=3). Prepuce tissue specimens obtained intraoperatively from hypospadias patients (H; n=16) and phimosis patients (P; n=8) between 2010 and 2016 were examined immunohistochemically by calculating the mean number of FGF positive cells in each of 5 randomly chosen 100μm x 100μm areas blindly. Quantification of immunostaining was performed using imageJ®.

Results: Mean ages at surgery were 3.9 and 4.5 years for H and P, respectively. Both FGF8 and FGF10 were expressed in the upper dermis, especially the papillary layer. FGF8 was similar, but FGF10 was down-regulated in H in proportion to severity (P: 13.08% versus mild H: 7.28%, moderate H: 5.01%, and severe H: 1.38%).

Conclusion: The significant down-regulation of FGF10 identified may contribute to further understanding the etiology of hypospadias and may have some possible application for treating hypospadias.
IS1-5  Early and late vaginoplasty in cloaca anomaly

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Purpose: Cloaca anomaly is anomaly which vagina, urethra, and rectum are fused creating common channel (CC). The patients generally undergo vaginoplasty with or after anorectoplasty. The aim of this study is to compare the demographics and outcomes of vaginal function between 2 groups.

Patients and Methods: We reviewed medical records of 30 patients with cloaca anomaly who underwent vaginoplasty between May 1989 and August 2017. Early group is defined as vaginoplasty with anorectoplasty and late group is defined as vaginoplasty after anorectoplasty. The follow-up period was 11 years (0–24 years).

Results: Twenty-one and 9 were classified into early and late group, respectively. The age of vaginoplasty was 108.89±100.22 months and 14.05±11.39 months in early and late groups. The length of CC was longer in late group (4.56±2.19 cm) than early group (2.28±1.34 cm, p=0.002). All patients in early group underwent pull-through and 7 patients, 1 patient, and 1 patient in late group underwent pull-through, switch, and local flap respectively. Except the patients of prepuberty (n=10) and follow-up loss (n=3), 100% and 94.1% of early and late group showed normal menstruation. (p=0.232). Among the patients over 17 (n=12), 5 were virgin, 1 attempted sexual intercourse but failed, and 6 were lacking in information. Late group had more urinary catheterization state than early group (44.4% vs 9.52%, p=0.031). There were complications in both groups such as residual CC (2 in early group, 1 in late group) and vaginal stenosis (2 in late group, p=0.115).

Conclusions: The late group had longer CC and more urinary dysfunction. Most patients had normal menstruation function, however, complications existed in both groups.

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IS1-6  To Evaluate the Success of Pyeloplasty with Functional Imaging: Is Dynamic Magnetic Renal Urography better than Renography?

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Purpose: To examine the discrepancies between split renal function measured by dynamic enhanced magnetic resonance urography (MRU) and renal scintigraphy (RS) after dismembered pyeloplasty.

Patients and Methods: We retrospectively reviewed 106 consecutive pediatric patients who underwent open dismembered pyeloplasty from 2006 to 2015 in our institution by a single surgeon. The inclusion criteria were unilateral ureteropelvic junction obstruction (UPJO), a normal-appearing contralateral kidney and a follow-up longer than three years. The functional scans were conducted between three months to one year after the operation and may repeated at the discretion of the clinician. The split renal function calculated by two modalities (MRU and RS) were compared. Factors associated with the discrepancies of the measurements were examined.

Results: The split renal function calculated by RS and MRU was compared in 18 cases. (13 boys and 6 girls; mean age 1.4 years) The mean split renal function calculated by MRU was 34.7 ± 12.0% and by RS was 38.2 ± 19.6%. The absolute difference between two methods was 11.7 ± 6.9%. The correlation coefficient was r² = 0.76. There was no significant difference between split renal function calculated by RS and MRU. However, kidneys with a larger APD (> 20mm) had a greater discrepancy between split renal function measured by MRU and RS (p < 0.01). The gender, timing of diagnosis and operative age and had no significant effect. Two patients underwent reoperation 6 and 7 years after primary pyeloplasty.

Conclusions: The measurement of split renal function by MRU and RS were less correlated in hydronephrotic kidneys. Functional studies before the resolution of hydronephrosis was not accurate. MRU provides superior anatomical information and may be more useful if reoperation is considered.
IS2-1  Single-stage vs. Three-stage Correction of Female Anorectal Malformation with Rectovestibular Fistula: a Korean Multicenter Analysis

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Purpose: The purpose of this study was to compare the complications and functional outcomes of single-stage and three-stage correction of female anorectal malformation (ARM) with rectovestibular fistula (RVF).

Patients and Methods: 72 patients who underwent single-stage or three-stage correction of ARM with RVF from June 2010 to October 2013 at 13 institutions in Korea were included.

Results: 35 patients underwent single-stage correction and 37 patients underwent three-stage correction. There was no statistically significant difference in gestational age and body weight at birth between the two groups. 33 (65%) patients in the single-stage group and 30 (81%) patients in the three-stage group had accompanying congenital malformations (p=0.618). Postoperative complications were wound infection, recurrence of fistula, stricture, and megarectum. With respect to the functional outcome, 6 patients in the single-stage group and 4 patients in the three-stage group had incontinence (p = 0.437) after anorectal reconstruction. Constipation was noted in 18 patients in the single-stage group and in 13 patients in the three-stage group (p = 0.163).

Conclusions: Single-stage correction of ARM with RVF in the neonatal period might not be inferior to three-stage correction in terms of postoperative complications and functional outcome.

IS2-2  Comparison between Fecoflowmetry and standard bowel function scoring system after Anorectal Surgery

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Purpose

The purpose of the present study was to clarify the characteristics of the parameters of fecoflowmetry (FFM) by comparing the 2 standard bowel function scoring systems in the children underwent anorectal surgery.

Patients and Methods

This retrospective study enrolled the patients who underwent anorectal surgery for Hirshsprung’s disease (HD) or anorectal malformation (ARM). All patients were assessed postoperative fecal conditions via FFM as well as Krickenbeck score (KS) and Kelly’s clinical score (KCS). All patients were classified according to KS or KCS and the five FFM parameters were compared between each group.

Results

Fourteen patients (M/F: 10/4, mean age: 7.33years, HD: 4 and ARM: 10) were enrolled. According to KS, eight patients showed soiling (non-soiling: 6, G1: 5, G2: 3), whereas 5 patients showed constipation (non-constipation:9, G2:3, G3:2). No. of patients classified according to KCS were as follows; continence (1): 7, (2): 7, staining (1): 8, (2): 6, Sphincter squeeze (1): 6, (2): 7. In KS, TR of non-soiling (84.41±22.81%) and G1 patients (79.54±13.33%) were significantly higher than that of Grade 2 patients (25.59±21.70%), respectively (p=0.0489 and 0.0369). EV of non-constipation patients (288.92±48.14ml) was significantly higher than that of Grade 3 patients (86.15±36.98ml) (p=0.0451). Additionally, in KCS, Fmax of staining (2) (no staining) patients (68.77±20.07ml/sec) was significantly higher than that of staining (1) (occasionally) patients (36.46±16.45ml/sec) (p=0.0055).

Conclusions

This study indicated that TR and Fmax reflect fecal continence, whereas EV is a good indicator of constipation in the pediatric patients with anorectal surgery.
IS2-3  A Clinical Trial on the Effect of Botulinum Toxin Injection for Internal Anal Sphincter Achalasia after Pull-Through in Hirschsprung’s disease

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Purpose: Botulinum toxin (Botox®) was introduced to manage internal anal sphincter (IAS) achalasia after the pull-through operations in Hirschsprung’s disease (HD). This is a prospective study on the efficacy and safety of Botox on IAS of HD patients.

Patients and Methods: Fifteen patients with HD who experienced persistent constipation after pull-through operation were included. Rectal biopsy and colon study were performed before Botox® injection to exclude agangliosis. Intersphincteric injection of 4IU/kg was done on 3, 6, and 9 o’clock direction under general anesthesia. Anorectal manometry, Wexner’s constipation score (WCS), and quality of life score according to defecation (QOL) were checked before, 2 weeks after, and 3 months after the injection for evaluation of efficacy. Holschneider incontinence score (HIS) and evaluation of pain, bleeding, heating sense and swelling were performed 2 weeks and 3 months after the injections for evaluation of safety.

Results: Median age of injection was 4.8 (range 1.7–7.4) years. Anal and rectal resting pressure, constipation and QOL did not change after the procedure, but significantly less patients experienced abdominal distension after Botox® injections. No significant complications that need medical or surgical interventions occurred. Incontinence decreased, but p value was not significant. Severity of anal pain decreased after 3 months compared to 2 weeks after injections. Anal bleeding was reported in 2 patients, but spontaneously resolved. Local tenderness at injection site was reported in 4 patients, but it regressed without further treatment.

Conclusions: Intraspincteric Botox® injection is a safe procedure. It is helpful to improve abdominal distension, but constipation and QOL improvement cannot be expected.

IS2-4  Universal port placement for beginners in Paediatric laparoscopy: myth or reality

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Background and Introduction: The initial resistance for paediatric laparoscopy is the confusion among the beginners about port placement sites and lack of confidence to avoid complication. This study was designed to check the feasibility of universal port in major routine laparoscopic procedures. Aim: To check the feasibility of paediatric laparoscopic procedures using universal port position. Material and methods: Prospective study design from June 2014-June 2016. All the laparoscopic procedures were done using standard three ports. Camera port was placed at umbilicus. Working ports was placed in the upper part of the middle third of the triangle formed by the spinoumbilical line, transumbilical line and the anterior axillary line on both sides. The ease of performing procedure was assessed using a standard scoring system. Those cases requiring extra working ports or requiring conversion to open were considered as failure. Results: 183 patients underwent laparoscopic procedures during the study duration. It included 46 hernias, 32 Orchidopexy, 17 RamstedtsPyloromyotomy, 43 Appendectomies, 9 Cholecystectomy, 21 Excision of hydratid cyst liver, 9 Sulpingoophorectomy/detorsion of ovarian cyst, 4 lap Splenectomy and 2 Enteric duplication cyst excisions. Mean duration of surgery was 89 minutes (range: 45-120 minutes). The average age of presentation was 48 months (Range 1-144). The average follow up was 12 months (range 6–48 months). 175 cases (95.6%) could be done using this universal port placement. Conclusion: Port positions mentioned can be used in performing a majority of paediatric laparoscopic procedure safely. The position is anatomically naïve and thus safe even for beginners.
IS2-5  Should appendectomy be immediate, interval, or emergency, for uncomplicated appendicitis?

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Background: We conducted a prospective non-randomized comparison of children with non-complicated appendicitis (NC-appy) treated by primary laparoscopic appendectomy (PLA) or non-operative management (NOM) followed by interval LA if NOM was successful (ILA) or emergency LA if NOM was unsuccessful (ELA). Methods: Prior to 2015, all NC-appy cases had a PLA followed by piperacillin/tazobactam (TAZ) until the white blood cell count (WBC) was less than 10,000/μL and patients were afebrile. In 2015, all NC-appy were admitted and commenced immediately on NOM (TAZ 8-hourly). A protocol with predetermined cutoff levels for abdominal pain, body temperature, and WBC was used 12-hourly to classify NOM as successful (later ILA) or unsuccessful (ELA within 6 hours). Results: Of 103 eligible subjects, 11 cases of suspected complicated appendicitis were excluded, leaving PLA (n=34) and NOM (n=58). In NOM, 3 cases, recurrence of NC-appy (n=1) and parental refusal to consent to ILA (n=2), were excluded, leaving ILA (n=24), ELA (n=31). Compared with PLA, ELA had significantly more residual abscesses (n=4/31; 12.9 % versus n=0/34; 0 %: p=.03), more perforations although not significant (n=7/31; 22.5 % versus n=3/34; 8.8 %: p=NS), and transient ileus (n=1) (p=NS). Operative time and postoperative hospitalization were significantly longer in ELA (95.5 minutes/7.5 days) versus PLA (68.7 minutes/4.1 days) (p=.01/.001, respectively). Operative time and postoperative hospitalization were significantly shorter in ILA (40.9 minutes/3.2 days) versus PLA (p=.001/.02, respectively). Conclusion: Further studies will clarify the indications for NOM and the role of PLA for treating uncomplicated appendicitis.

IS2-6  Lessons and tips from the experience in laparoscopic treatment of choledochal cyst in children

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Purpose: Laparoscopic choledochal cyst (CC) surgery remains technically challenging because of its high degree of complexity despite possibilities it presents. We have performed the procedures of laparoscopic excision CC with the use of a fine ureteroscope on both the intrahepatic bile duct (IHBD) and the intrapancreatic bile duct (IPBD), and the use of an additional trocar; right subcostal in the anterior axillary line for CC retraction during CC excision and for hepaticojejunostomy. The aim of the study is to report lessons and tips obtained from our experience.

Methods: Medical records of 40 patients with CC (21 fusiform, 19 cystic) who have undergone laparoscopic CC excision and Roux-en-Y hepaticojejunostomy treatments at our institution between 2009 and 2017 were retrospectively reviewed.

Results: Intraoperative ureteroscope identified IHBD plugs in 15 cases (6 moderate, 9 minimal) and IPBD plugs in all 21 fusiform cases (6 massive, 12 moderate, 3 minimal), have been successfully removed. Distal IPBD length were measured using ureteroscope and dissected with precision until measuring less than 5mm in each case. Follow-up MRI showed no IPBD in any of the cases. Hepaticojejunostomy diameters measured 6–9mm in 25 cases (13 fusiform, 12 cystic) and greater than 10mm in 15 (8 fusiform, 7 cystic). Two patients suffered complications (pseudocyst formation in pancreatic head and bile leaks) due to no use of additional trocar.

Conclusions: The technique of combining the advantages of both laparoscopy and endoscopy during the treatment of CC and adding a trocar improves the outcomes and enhances the precision and the efficacy.
IS3-1  Respiratory function and postoperative change after Nuss procedure in children with pectus excavatum

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Purpose
To elucidate respiratory function in different degree and different age, we studied pre- and post-operative spirometry in children with pectus excavatum.

Method
In 126 patients who underwent Nuss procedure at 3 to 15 years old during 2007 to 2016, we evaluated spirometry at the following occasions; before operation, before bar removal, 1 month and 1 year after bar removal. We excluded data obtained under 8-year-old from this examination. 99 cases who underwent spirometry before operation were divided into 60 mild cases and 39 severe cases according to Haller index 4. Patients were also divided into 68 young cases and 58 aged cases at 10-year-old at the time of operation. %VC at each occasion were compared between two groups. In addition, recovery of %VC was examined in young 27 and aged 18 1 month and 1 year after bar removal.

Results
Severe group showed significantly decreased %VC than mild group (90.2±14.4 vs 97.7±14.9). In young group, %VC before operation, before and after bar removal were 92.8±12.1, 93.9±14.5 and 94.3±14.7. In aged group, %VC were 94.5±18.1, 83.0±19.0 and 85.8±17.1 respectively. %VC in aged group showed significantly reduced after operation. %VC in young group at 1 month and 1 year after bar removal were 95.8±11.4 and 103.8±11.9, and in aged group 81.7±16.8 and 83.3±14.8. %VC showed significantly improved in young group after bar removal.

Conclusion
%VC is reduced in children with severe chest depression. Pectus excavatum repair less than 10 years old revealed advantageous in the recovery of respiratory function.

IS3-2 Morphological differences between congenital cystic adenomatoid malformation and bronchial atresia in prenatally-diagnosed neonates

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Purpose: Congenital cystic lung disease comprises a spectrum of disease entities, including congenital cystic adenomatoid malformation (CCAM), bronchial atresia (BA). The aim of this study was to clarify the morphological characteristics of these diseases and to investigate if these conditions can be correctly diagnosed by radiological findings.

Patients and Methods: We retrospectively reviewed 71 prenatally diagnosed neonates post-surgery with pathologically diagnosed as CCAM or BA. The radiological features of CT scan taken at neonatal periods were analyzed between patients with CCAM and BA. This study was approved by institutional ethical committee.

Results: We identified 37 patients diagnosed as CCAM and 34 as BA. Gestational age, birth weight and male percentage between patients were not significantly different. The number of neonates who could examine CT scan was significantly lower in CCAM (51 % vs 91%) due to severe respiratory distress. According to the findings of CT scan, the laterality of affected lobe was not different. The number of patients with having multiple affected lobe were higher in neonates with BA (8% vs 20%). The number of patients with mediastinal shift were statistically higher in CCAM (84% vs 16%). Although almost all the patients had cystic formation in CCAM, but there were two types of morphologies as cystic formation (54%) or hyperinflation (45%) in BA. Mucoid impactions were seen in significantly higher patients in BA (38%) whereas 5% in CCAM.

Conclusions: CCAM and BA have distinct radiological features. When mucoid impaction associated with hyperinflation of the pulmonary segment are present on CT scan, a confident clinical diagnosis of BA can be made.
IS3-3 Lobectomy in pediatric pulmonary lesions using single lumen endotracheal tube for lung isolation: initial experience

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Purpose and Background: lung isolation makes lobectomy smooth and easy but requires double lumen tube. We used single lumen tube and this study shows our initial results. Aim: To evaluate the initial results of lobectomy using lung isolation with single lumen tube. Material and methods: Retrospective analysis of cases that underwent lobectomy between June 2014- June 2017 was done. Those with incomplete data or where lung isolation was not used were excluded. Selective endobronchial intubation was done by using neck extension, head tilt and left chest elevation. lobectomy was done using posterolateral thoracotomy (5th ICS). Bronchial stump and vessels were suture ligated. Air leak was checked by withdrawing the tube. Results: 16 out of 18 cases formed the study group, 9 were right (4 right upper, 2 middle and 3 lower lobectomy) while 7 were left sided (5 lower and 2 left upper lobectomy). Indications were CCAM, CLE, Complicated hydratid, persistant bronchopleural fistula and bronchiectesis. Mean followup was 11 months (Range1–35 months). Mean age was 21 month (Range2–72 months). Mean operating time was 98 min (Range 60–150min). There was no mortality; morbidity as persistent air leak was seen in one. Conclusion: lobotomies can be easily performed using this technique. The procedure becomes smooth and controlled.

IS3-4 RELIABILITY OF ELASTOGRAPHIC SONOGRAPHY IN PREDICTING PEDIATRIC CERVICAL LYMPH NODE MALIGNANCY

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Purpose: Preliminary studies suggest that ultrasonographic (US) elastography may be useful in differentiating benign and malignant cervical lymph nodes, thereby informing decisions to perform a biopsy and facilitating follow-up. The current study aimed to evaluate the accuracy and reliability of US elastography in distinguishing malignant pediatric malignant cervical lymphadenopathy from benign lesions.

Patients and Methods: A total of 177 lymph nodes in 128 children with the age ranging form 11months to 12 years; they were 77 males and 51 females with a ratio of 1.5:1. A preliminary diagnosis primary head and neck cancer were examined by B-mode sonography, power Doppler ultrasound and elastography. Elastographic patterns were determined on the distribution and percentage of the lymph node area with low elasticity (hard), with pattern 1 being an absent or very small hard area to pattern 5, a hard area occupying the entire lymph node. Patterns 3–5 were considered metastatic. Ultrasound guided aspiration cytology was done for 107 lymph nodes.

Results: The majority 154 (87%) of metastatic lymph nodes had elastography pattern 3–5. This finding was observed in only 6 (3.4) % of the benign lymph nodes (P < 0.001). The elastography pattern had sensitivity of 87.3%, specificity of 96.5%, PPV of 98.2%, NPV of 73.1% and overall accuracy of 91.9% in differentiation between benign and malignant lymph nodes. On the other hand, for the B mode criteria, the best accuracy was given to abnormal hilum (73%). The accuracy of power Doppler ultrasound pattern was 65.8%.

Conclusions: The accuracy of sonoelastography is higher than other sonographic modalities in elucidating the pathology and diagnosis of cervical lymphadenopathy distinguishing between benign and malignant lesions. This may replace the lymph node biopsies in the future. Moreover, The integration of lymph node sonoelastography in the follow up of patients with known head and neck cancer may reduce the number of biopsies.
IS3-5  Treatment for meconium-related ileus in extremely low birth weight infants
Department of Pediatric Surgery, Ibaraki Children’s Hospital
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Purpose: Meconium-related ileus (MRI) is a serious problem in extremely low birth weight (ELBW) infants. The aim of this study was to identify a practical treatment for ELBW infants with MRI.

Methods: This is a retrospective study carried out on ELBW infants with MRI from 01/2007 to 12/2016. Backgrounds, treatments for MRI and other complications, and prognosis were statistically analyzed.

Results: In total, 15 ELBW infants with MRI were studied. Thirteen patients (87%) underwent Gastrografin enemas (GEs), which resolved the obstruction in 9 cases (60%) without complications. Including 4 patients (27%) who had no response to GEs, 6 patients (40%) required operations. There were no differences in backgrounds, treatments for other complications between the operative cases and the non-operative cases. The duration of GEs until the operation was similar to that until the obstruction resolved (median, 3.0 vs 2.0; p=0.7902). The operative cases stayed in the hospital longer than the non-operative cases (median, 130.5 vs 95; p=0.0016), and 3 operative cases were performed re-operations. All patients survived to discharge.

Conclusion: In ELBW infants with MRI, Gastrogarfin enema was effective and resolved the obstruction in a short term. If the patients had no response to GEs in several days, we should consider surgical intervention to save them.

IS3-6  Probiotics in Treatment of Necrotizing Enterocolitis: An Animal Model
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Ossama M Zakaria

Purpose: Probiotic therapy has been shown to reduce morbidity and mortality of necrotizing enterocolitis (NEC) in premature infants in several international studies using various probiotic agents. This study aims to investigate the hypothesis that probiotics can be successful in treating advanced cases of NEC in an animal model and also to elucidate the benefits of using probiotics in the prevention of necrotizing enterocolitis (NEC) and its complications in a preterm newborn rat model.

Patients and Methods: Newborn rats were either breast-fed (BF), or formula- fed and additionally subjected to hypoxia (FFH). At Day 4 after birth, liver was harvested and processed for Western blot analysis and measurement of histologic localization of IL-18, TNFa and inducible nitric oxide synthase (NOS2). TNFa levels was also measured for Intestinal luminal at the distal ilea. The rats were subdivided into 6 groups. Group I; included 20 of hypoxia FFH-rat model of induced NEC. Group II; 20 rats of BF model-hypoxia- induced rat model of NEC. Group III; 20 rats will be used as controls. Group IV; 20 rat models of NEC to whom liquid oxygen was given orally. Group V; 20 rat models of NEC treated by oral probiotics and liquid oxygen. Group VI; 20 rat model of NEC treated with oral probiotics, liquid oxygen and oral antibiotics. Oral probiotics alone was given to rats in group I with pre and post administration evaluation of the previously mentioned liver and intestinal parameters. In group II; the same parameters was evaluated after administration of oral probiotics + antibiotics. In Groups III, IV, V and VI; the same parameters was also measured, respectively. Data that display non normality was log transformed. Univariate and multivariate analyses was applied. Multiple linear as well as stepwise regression models was generated to determine factors explain variation in recovery indices among the included groups.

Results: Hepatic TNFa and IL-18 positive cells were significantly increased in NEC rats compared to control pups. The number of TNFa and IL-18 positive cells were positively correlated with increasing severity of intestinal damage. TNFa from intestinal flushes of animals with NEC was statistically increased compared to controls. These high level of intestinal TNFa and the other inflammatory liver parameters were significantly decreased in the probiotics and antibiotics treated rat model compared to those treated with antibiotics alone.

Conclusions: Probiotics are effective in treatment of NEC in the induced animal model.
Operative Management of Non-Iatrogenic Pediatric and Adolescence Peripheral Arterial Trauma: An Experience from a resource challenged settings

Ossama M Zakaria, M Moussa, MY Daoud

Purpose: Vascular injuries in the extremities although being uncommon among pediatric population they may result in serious livelong threatening disabilities and even death. The aim is to evaluate the management experience and outcome of pediatric and adolescence vascular trauma in a resource challenged settings.

Patients and Methods: A retrospective study of 20 years period from December 1996 to January 2016 studying the surgical treatment of pediatric and adolescent patients who presented with non-iatrogenic peripheral arterial injuries. A thorough study of each patient record was performed including the original demographic data, symptoms and clinical examination including the hard and soft signs of arterial injury. Operative data of each patient was also reported.

Results: During the 20 years period of the study, 194 pediatric and adolescent vascular trauma patients were treated. They were 93.3% male, and 6.7% female, respectively. The age ranged from two to eighteen years with a mean age of 14.4 ± 3.2 years. Lower extremity arterial trauma was recorded in 51%, while 49% were having upper extremity injuries. Sustained blunt injury was the main cause in 72.4% while the remaining 27.6% were due to penetrating injury. Primary repair with end-to-end anastomosis was performed in 51.7%, while an interposition reversed saphenous vein graft was performed in 48.3%. Pseudoaneurysms was recorded in 9% of those treated with an end-to-end anastomosis technique. Prophylactic fasciotomy was performed in 15% of the cases and the wound was eventually closed with a split thickness skin graft.

Conclusions: Pediatric and adolescent peripheral arterial injuries although not frequently encountered during the practice and training of junior general and pediatric surgeons should be considered as a trigger for mortality and morbidity among this age group especially in the third world countries. Therefore, it is highly recommended that all postgraduate general and pediatric surgeons integrated training programs must entail more details about this crucial problem.
3A-P28-1  In utero imaging presentation of Meckel diverticulum: a case report
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Purpose: Meckel diverticulum (MD) has rarely been diagnosed in utero. We report a case of MD detected prenatally by using ultrasound and magnetic resonance imaging (MRI).

Case: 38-year-old woman at 20 weeks gestation underwent fetal ultrasound. It revealed 15 mm ovoid hypoechoic mass in the left lower abdomen. At 35 weeks gestation, the mass showed a progressive growth in size to 30 mm. On fetal MRI, this lesion exhibited hypointense or with intermediate-intense signal on T1-weighted images and hyperintense signal on T2-weighted images. From these findings, a mesenteric cyst or a lymphatic cyst was suspected. A healthy male was born by spontaneous vaginal delivery at 38 weeks gestation. Postnatal radiographs revealed a cystic mass of 30 mm in size in the left hemiabdomen. As mesenteric cyst was highly suspected, an exploratory laparoscopy was performed, and then the lesion was extracted via a small umbilical incision. It was protruded from the small intestine at 45 cm distal from Treitz’s ligament. Partial resection of the small intestine including the lesion was performed. Histology confirmed the diagnosis of MD with heterotopic gastric mucosa. Postoperative course was uneventful for 18 months.

Discussion: Fetal MRI finding such as T1-high and T2-low intensity mass with intestinal wall structure may be possible for MD (Lesieur E, et al. 2017). However, our case was not consistent with that finding. MD should be included in the differential diagnosis of an intraabdominal mass of the fetus. Further studies would be warranted for imaging analysis for prenatal diagnosis of MD.

3A-P28-2  The current of neonatal surgery outcome: A 2 years review of admitted cases at Laos National Children’s Hospital
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Background: The neonatal mortality of Laos is still the highest among southeast Asian countries. The highest mortality may be attributable to shortage of well-trained pediatric surgeons and tertiary centers for neonatal medicine.

Objective: The purpose of this study is to clarify the responsible factors for the high mortality rates of neonatal surgical cases. The authors reviewed the neonatal surgical cases which were diagnosis and treated at Lao National Children’s Hospital, The only one children hospital in Laos.

Material and Methods: Retrospective all neonatal surgery case which was admitted from Jan 2016- Dec. 2017.

Result: All total 62 cases (Male: 38 cases, Female: 24 cases) of neonatal surgery cases was described. Anorectal malformation (ARM) was the most common cases in 22 cases, Hirschsprung’s Disease in 18 cases, Gastroschisis in 10 cases, Intestinal atresia in 8 cases, Omphalocele in 3 cases, Duodenal atresia in 3 cases, Congenital hypertrophy pyloric stenosis in 2 cases, Esophageal atresia in 2 cases. The age (day) of diagnosis and surgical of each disease was: Hirschprung’s Disease 19.61 day of age, Imperforate anus 3.95 day of age, intestinal atresia 5.52 day of age, Duodenal atresia 6.66 day of age, Gastroschisis 2.2 day of age, esophageal atresia 4 day of age, Congenital hypertrophy pyloric stenosis 25 day of age. Omphalocele 2.6 days. The mortality of each disease was 60% (6/10) in Gastroschisis, 50% (4/8) in intestinal atresia, 50% (1/2) in esophageal atesia, 33.3% (1/3) in duodenal atresia, 33.3% (1/3) Omphalocele, Hirschprung’s diseases 7.6% (1/13), 4.54% (1/22) in Imperforate anus.

Discussion: The poor prognosis can be attributed to delayed diagnosis and poor transportation system, and high incidence of postoperative complications, e.g. sepsis, malnutrition.

Conclusion: Early diagnosis, adequate investigations and well educated primary professional care at rural area will be improve the outcome.
3A-P28-3  Serial intralesional triamcinolone acetonide injection for acquired subglottic stenosis occurred in premature infants

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[Purpose]
Acquired subglottic stenosis (SGS) in extremely low birth weight infants (ELBWI) is often caused by long term endotracheal intubation. This kind of stenosis is sometimes extending to the glottis or supraglottis. In some cases, tracheotomy is required, and the decannulation can be challenging. In our institution, serial intralesional triamcinolone acetonide (TA) injection was performed for decreasing the level of stenosis around glottis, and consequently leading the additional operation less invasive or the patients to vocalize. The aim of our study is to clarify the efficacy of TA injection to acquired SGS.

[Methods]
The medical records of 6 pediatric patients with both acquired SGS in ELBWI and tracheostoma at our institution between September 2015 and November 2017, were retrospectively reviewed.

[Results]
All patients was post-ELBWI (range 456–734g), and had acquired SGS extending from glottis to subglottis. A total of 7 procedures were performed on these patients during the study period. One patient was decannulated only by TA injections. Another one underwent laryngotracheal construction after TA injections, and 6 months after the operation reached decannulated. Two patients was still small (under 2 years old), and began to use speech cannula and prompt more efficient language rehabilitation. Two patients were planned of additional treatments. There was no severe complication. One patient had subacute thyroiditis during the TA procedure.

[Conclusions]
TA injection was effective in decreasing the stenotic level around glottis. We suggest that TA injection, as an alternative treatment, has a potential efficacy for acquired SGS.

3A-P28-4  Transanastamotic tube in intestinal atresias: How beneficial are they??

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Purpose and Background: Intestinal atresia requires multiple surgeries and long hospital stay. We tried managing these cases by primary anastomosis with transanastamotic tube for early feeding. Aims: To analyze the outcomes in patients of intestinal atresia who underwent primary anamostosis with a transanastamotic tube. Material and methods: The records between June 2014- Nov 2017 were analyzed. Those with incomplete data or unclear final outcome were excluded. Patients managed by primary anastomosis with (group A) or without (Group B) transanatamotic tube were included. The transanatamotic tube was kept for 6 weeks. Oral feeds were started after 2 weeks in all the cases. Value < 0.05 was considered significant Result: Fortyeight cases were included. There were 02 duodenal atresia, 29 jejunal atresia and 17 ileal atresia. The mean age at surgery was 2 days (Range:1–16 days). There were 42 cases in group A (with TA tube) and 6 in group B (without TA tube). The average duration of start of feeds was 78 hours (Range:72–96 hours) in the group A and 402 hours (Range:360–504 hours) in Group B (p=0.01). The mean duration of hospital stay was 7 days (range:5–15 days) and 27 days (Range 19–48 days) in group A and B (p=0.02). The overall survival was 38 (91%) and 3 (50%) in group A and B (p=0.01). Reexploration was required in 2/42 and 2/6 cases in group A and B. TPN was required in 2/42 and all cases in group A and B. Conclusion: Primary repair in intestinal atresia with a transanastamotic tube is a good and practical option. The overall outcome is better.
3A-P28-5  A case of congenital multiple colon atresia with intestinal malrotation
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[Introduction] Colon atresia is reported to occur from 1 in 1,500 live births to 40,000. Colon atresia is considered the rarest atresia of the gastrointestinal tract, comprising 1.8% to 15% of intestinal atresias. [Case] A 3-day-old full term male infant was transferred to our hospital for abdominal distension and no first defecation. Contrast enema showed microcolon and obstruction in the descending colon. And a decompressive loop-enterostomy in the distended segment was performed. At 7 months of age, contrast enema from the stoma showed a obstruction in the right lower quadrant. The continuity of the intestinal tract was not revealed. The intestinal malrotation (non-rotation type) was found as an associated anomaly during surgery. The continuity of the intestine was maintained. Type-I atresias (Louw’s classification) were found in the ileocecal junction, ascending colon and transverse colon. One stenosis in the transverse colon was found. In all atresias and stenosis, the membranous resection, mucosal suture and transverse enteroplasty were performed. The postoperative course was good.

3A-P29-1  The factors of original diseases predicting postoperative bowel obstruction
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[Introduction] The postoperative bowel obstruction (PBO) is hardly avoiding complication but it affects the patient’s quality of life. This paper aimed to identify the underlying diseases factors predictive of PBO.

Materials and Method A chart review of the last 15 years was performed to identify patients with PBO according to age, original disease (OD), treatment for OD, and treatment of PBO.

Results Sixteen patients with 21 episode of PBO were identified. PBO occurred at an average age of 5.65 years, 1.68 years after initial treatment of OD. Nineteen of 21 episodes were associated with underlying bowel OD. Duodenum was involved in 3 cases, ileum in 5, colon in 2, appendix in 3, and entire bowel in 6. Average duration until the onset of PBO was 1.03 years for duodenum, 3.24 for ileum, 0.5 for colon, 0.1 for appendix, and 0.4 for entire bowel. Underlying non-inflammatory OD was present in 17 cases and inflammatory OD in 4. Average duration until onset of PBO was 2.36 years in non-inflammatory OD and 0.5 years in inflammatory cases. Bowel resection for OD was performed in 12 cases, at an average 4.12 years prior to PBO, with 1.56 years until onset in 9 cases without bowel resection. PBO responded to conservative management in 11 cases within 2.9 days on average. Ten cases required laparotomy despite conservative management for 12.3 days on average.

Conclusion Inflammatory disease, distal bowel or entire bowel surgery, and cases without bowel resection were predictive of earlier PBO.
Intestinal perforations with neutropenic enterocolitis during the treatment of acute leukemia

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[Introduction] Neutropenic enterocolitis (NE) is a necrotizing inflammatory disease of the cecum or colon that develops in severe neutropenia. We reported a case of NE who developed intestinal perforations during remission induction therapy for acute lymphoblastic leukemia (ALL).

[Case report] A 16-year-old girl was diagnosed with ALL. Two weeks after starting induction therapy, she complained of intermittent abdominal pain and constipation. She had severe neutropenia and developed fever. On day 36, she had severe abdominal pain with abdominal distention and CT showed free abdominal air. A laparotomy was performed which revealed perforated lesions along the wall of the cecum. An ileostomy and tube-cecostomy was performed, and the patient gradually recovered. Two months later, the ileostomy was closed and the tube-cecostomy was removed, and she survived to discharge after maintenance therapy.

[Discussion] Intestinal perforation in a severe neutropenic patient is a life-threatening situation. The incidence of NE in pediatric population is 1.7–16.2%. The classical triad of symptoms is high fever, abdominal pain and diarrhea. Our patient had constipation and intermittent pain without peritoneal irritation sign and we did not considered NE until intestinal perforations occurred. The possibility of NE should not be ignored in the differential diagnosis of abdominal pain in neutropenic patients.

[Conclusion] We should always consider that NE can develop into intestinal perforations.

LAPAROSCOPY AS A PRIMARY INVESTIGATORY TOOL IN PEDIATRIC ABDOMINAL MASSES

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Purpose: Abdominal masses still pose as a major challenge for pediatricians and surgeons. This study was designated to evaluate the role of diagnostic laparoscopy in investigating equivocal pediatric masses that had undergone other imaging modalities.

Patients and Methods: A combined prospective and retrospective multicentric study for the period of 13 years from January 2005 to December 2016. Inclusion Criteria: all children from 3 months of age to 15 years were studied. Exclusion Criteria: those who have a documented diagnosis through other imaging modalities including sonographic and or CT guided biopsy. All patients underwent multiport diagnostic laparoscopy for biopsy from the mass. All specimens were histopathologically assessed using H&E staining, some specimens were immunohistochemically studied, patients mean follow up was 3.6 years.

Results: A total of 132 of patients were recruited in this study they were 69 males and 63 girls with the male to female ratio of 1.1:1 the age ranged from 3 month up to 15 years with the mean age of 2.7 ± 0.8. Out of the total studied group 54 patients were diagnosed as neuroblastoma with the percentage of 40.9% while 66 were having nephroblastoma while the remaining 12 (9.1%) were having non-Hodgkin’s abdominal lymphoma. All patients did not show any complications related to the procedure. Patients mean follow up was 3.6 years. Most of cases (121) with different diagnosis were clinically staged as grade I to grade II (91.7%). Neither intraoperative or post operative complications were recorded during this technique. The mean operative time was recorded to be 72 mins ± 20 in the earliest group; yet, it has declined to be 32 ± 12 mins in the latest group due to the advancement of the learning curve.

Conclusions: Laparoscopy is an accurate, safe and should be used as the sole tool for biopsing solid abdominal tumors in pediatrics.
3A-P29-4  Results of Early One Stage Transanal Endorectal Pull-through for Hirschsprung’s Disease: A Local Experience

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Purpose: The aim of this study was to evaluate the postoperative clinical outcome, colorectal function, and fecal continence score after a one stage Soave’s transanal endorectal pullthrough surgery (TERPT) for Hirschsprung’s disease (HD) comparing them in preschool and school children with the results of younger children.

Patients and Methods: This comparative retrospective study was done on 120 HD children underwent TERPT over a period of 5 years from Jan. 2011 to Dec. 2016. Patients were classified into 2 equal groups according to their age. The groups were divided based on the age at the time of surgery into 2 groups; group I (n=60), included children with age less than 6 months up to 35 months and group II (n=60), with patients’ age ranging from 36 months up to 156 months. Demographic, clinical data, preoperative investigations; operative records, postoperative outcome and follow-up including defecation problems were all recorded. Post operative fecal continence score rate (FCSR) was assessed when children became over the age of 48 months (4 years). Electromyography (EMG) and ano-rectal manometry (AM) were used in follow-up of those who did not show an excellent FCSR. Moreover, those with fair and/or poor FCSR were further investigated by magnetic resonance imaging (MRI). The postoperative follow-up period ranged from 42 to 48 months in group I with a mean of 21 months, while it ranged from 10 to 36 months in group II.

Results: Studied patients were 68 males and 52 females. The male to female ratio of 1.3:1. At the time of surgery; the patients median age in group I was 8.9 months, while it was 55.65 months in group II. In group I, most of children showed no abnormal defecation problems, 46 patients had an excellent FCSR, 14 showed a good FCSR and no poor continence score rate were recorded, while 3 patients suffered of constipation. Meanwhile, in group II, 36 patients showed an excellent FCSR, 19 had a good FCSR, 9 had a fair FCSR. The remaining 5 patients suffered of continence problems varying from fair in 4 patients (20%), with the remaining 2 patients having a poor continence score rate. Five patients suffered of different abnormal defecation behavior in the form of constipation.

Conclusions: It can be concluded that TERPT can be performed with some difficulties in older children; yet, the follow-up results are statistically inconvenient compared with those patients who had undergone the operation at younger age. It is therefore recommended to be done in the earlier age.

3A-P29-5  Management of Paediatric Blunt abdominal trauma with split liver or spleen injuries

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Purpose: Background: Management of childhood blunt abdominal injuries is one of the major emergencies that poses major challenges to pediatrician and pediatric surgeons, in terms of prevention of mortality, morbidity, and disability. Recently many centers are advocating of the conservative non-surgical treatment as the first priority. Aim: The current study was carried out to report a local experience in management of the split liver and spleen injury among Children in the Eastern province of Saudi Arabia.

Patients and Methods: This study included 207 children who sustained blunt abdominal trauma; admitted and treated at three tertiary hospitals of the Eastern province of Saudi Arabia namely King Fahd Hospital of the University (KFUH), Prince Saud Bin Jalawi Hospital (PSBJH) and King Fahad Hospital, Hofuf (KFHH) in the period of 9 years from January 2007 to January 2016. Exclusion criteria included multiple trauma patients with extra-abdominal major injuries, hemodynamically unstable children after adequate resuscitation, and children with generalized peritonitis –early or subsequent. Also excluded, were those with extra luminal air or injured diaphragm. Resuscitation to those in need was carried out hand in hand with history and examination in a team coordinated and headed by the pediatrician. According to the advanced trauma and life support, protocol (ATLS). A special algorithm for decision-making incorporating Focused Assessment with Sonography for Trauma (FAST) and computed tomography was applied to all patients to decide whether and when surgery would be needed. Collected data were statistically analyzed using�2 analysis.

Results: One hundred twenty six males (60.9%) were presented with blunt abdominal trauma while 81 females (39.1%) were also encountered. The age varied between one year and 16 years with the mean of 10.5 (mean ± SD). Road traffic accidents were the most common cause of trauma (131 patients, 63.3%). Falling from heights (52 patients, 25.1%) was the second cause followed by direct trauma (22 patients, 10.6%), then other uncommon causes like building break down (2 patients, 1%). Spleen was the most common injured organ 145 patients (70%) while 62 patients (30%) suffered from liver injury. The decision to abort conservative treatment had to be taken in 7 patients (3.4%).

Conclusions: In hemodynamically stable traumatized pediatric patients, conservative treatment in isolated liver or splenic trauma is a safe and successful approach. CT should be done for those children with free intraperitoneal fluid of no definite source in initial ultrasound.
Background: Our routine policy is to repair inguinal hernias diagnosed in the very young after 1 year of age to prevent recurrence, unless incarceration occurs. Of 492 inguinal hernia repairs performed 2014–2016, we reviewed those male infants who presented initially with incarceration when less than 12 months old who were repaired within 1 week after successful manual reduction (n=41), comparing laparoscopic percutaneous extraperitoneal closure (LPEC) with conventional open repair (CO).

Methods: Ultrasonography (US) was used to assess scrotal/testicular status preoperatively, 1, and 4 weeks postoperatively. Choice of repair was by parental preference.

Results: There were 21 LPEC and 20 CO repairs. Mean ages/weights at surgery were similar. Mean operative times were: 19.7 minutes (LPEC) versus 45.8 minutes (CO). (p: <.05). Peritoneal edema was observed in 13/21 LPEC cases (61.9%) involving all visible peritoneum in 1/13 (7.7%) just ventrally (at 12 o’clock) in 12/13 (92.3%). Postoperative minor wound infection in CO (n=1); in LPEC (umbilicus; n=1). Postoperative scrotal/testicular swelling in CO: 1 week (n=4), 4 weeks (n=2); in LPEC: 1 week (n=1), 4 weeks (n=0). (p=ns). Minimal postoperative ipsilateral testicular elevation not requiring surgical intervention in CO: 1 week (n=1), at 4 weeks (n=1); in LPEC: 0 cases. (p=ns). After a mean postoperative follow-up of 25.4 months, there are no recurrences or testicular atrophy and wound cosmesis is good.

Conclusion: LPEC was significantly quicker. A larger long-term study is warranted to confirm that the impact on scrotal/testicular status is indeed minimal.

Purpose: Background: Contralateral inguinal exploration in pediatric unilateral inguinal hernia has been an issue of debate. The controversy still exists on whether a contralateral patent processus vaginalis (CPPV) is justifiable for herniotomy. Aim: This study was conducted to investigate the hypothesis that a patent CPPV always necessitates herniotomy. Patients and Methods: This prospective study was conducted on 200 pediatric patients with age ranging from 2 months up to 120 months. All studied patients who were clinically diagnosed as unilateral inguinal hernia underwent clinical examination of both inguinoscrotal regions followed by ultrasonography to elucidate PPV in both sides. Following that, herniotomy was performed on the hernia site with laparoscopic evaluation of PPV on the contralateral side. Contralateral herniotomy was performed in 44 patients with Chin’s type III CPPV while the rest of were followed up for a period of 3 years to detect the appearance of any contralateral inguinal hernia.

Results: The current study included 158 boys and 42 girls (ratio of 3.8:1). Hernia was more common on the right side (136 patients) and only 64 on the left side. Bilateral herniotomy was performed on 44 patients with Chin’s type III CPPV while the remaining 156 patients underwent unilateral herniotomy. During the follow up period, contralateral hernia appeared on 58 patients; the remaining 98 patients proved to have CPPV did not complain of clinical hernia during that period.

Conclusions: Inguinal herniotomy for contralateral PPV may not be necessary in all cases. This will decrease the anesthesia and surgical morbidity in young infants and save hospital resources through avoidance of unnecessary operations.
Incarcerated Amyand’s hernia in premature infant after ventriculoperitoneal shunt

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**Introduction**

Amyand’s hernia is defined by the inclusion of inflamed or uninflamed vermiform appendix within the inguinal hernia sac. Ventriculoperitoneal shunts in children for hydrocephalus are associate with inguinal hernias and hydroceles. We present a rare case of incarcerated Amyand’s hernia after ventriculoperitoneal shunt.

**Presentation of case**

A 9-months old boy, born at 22 weeks of gestation and weighing 444g, was referred to our department with right-sided groin swelling and redness. Ventriculoperitoneal shunt had been placed for hydrocephalus at the age of 4 months. Clinical examination revealed an irreducible mass in the right inguinal region. Plain abdominal x-ray showed dilated loops of small bowel suggesting intestinal obstruction, and a bowel gas under right superior pubic ramus was apparent. Ultrasound examination showed a blind-ending tubular structure entering the right inguinal canal and hydrocele in the left. In the emergency operation, the uninflamed appendix was found to adhere to the inner surface of the right hernia sac. There was no shunt migration through the inguinal hernia. Bilateral herniotomies without appendectomy were performed.

**Conclusion**

Consensus has yet to be reached regarding the necessity of resecting an uninflamed appendix in the case of incarcerated Amyand’s hernia. Increased intra-abdominal pressure by accumulation of fluid in combination with the high patency rate of processus vaginalis possibly plays a role in the development of inguinal hernia and hydrocele in ventriculoperitoneal shunt patients. Bilateral repair should be considered even inguinal hernia in unilateral.

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**3A-P30-4 Complete urogenital nonunion: A rare case in non palpable undescended testis**

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Nitin Sharma \(^1\), MA Memon \(^1\), M Sharma \(^2\), S Sharma \(^3\), B Chaurasiya \(^3\), OP Sundarani \(^3\)

**Purpose and Background:** Undescended testis is a common anomaly but complete urogenital non-union is rare. Case report: 10 month old male child presented with left sided non-palpable undescended testis. He was subjected to diagnostic laparoscopy and proceed as per the standard protocol. 5 mm camera port was placed through umbilicus using open technique of port placement and 3 mm working ports were placed at the transumbilical line along the midaxillary line. It was seen that the vas was running separate of the testis and entering into the deep ring to go into the inguinal canal. The testis was lying separate and isolated with vessels and visible epididymis with no communication with the vas. Keeping the possibility of long loop vas it was decided to trace the vas. The deep ring area was dissected using the Maryland and scissors and vas was traced down to find it ending blindly into a nubbin of tissue with continuation into the gubernaculums. Thus the diagnosis of complete urogenital non-union was made. As the opposite side was well descended and normal it was decided to remove the testis and the vas along with the nubbin of the tissue. Histopathology revealed dysplastic epididymal tissue into the blind ending vas and dysplastic testes. Patient was operated as a day care case and was discharged after 12 hours of surgery.

**Conclusion:** Complete urogenital non-union is extremely uncommon in nonpalpable undescended testis and it should be kept in the back of mind while operating upon them.
Ventral prepuceplasty in distal penile hypospadias: Excellent for cosmetic appeal and patient satisfaction

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Purpose and Background: Most of the cases of glanular and coronal hypospadias present for poor stream or cosmetic appearance. The main aim in them is to provide a visibility normal phallus. Aim: To evaluate the importance of prepuceplasty in cases of glanular/coronal hypospadias Material and methods: All cases of glanular/coronial hypospadias presenting between June 2014-June 2017 were included. Parameters considered were meatal location, meatal stenosis and incomplete prepuce (prepuce hood). All the cases were subjected to urethroplasty, meatoplasty and prepuceplasty. The results obtained were analyzed. Results: 48 cases were operated and they formed the study group. There were 31 glanular hypospadias and 17 coronal hypospadias. Mean follow up was 12 months (Range 1-36 months). Mean age at presentation was 23 month (Range 14-72 months). Mean operating time was 50 min (Range 45-60min). Fistula at the base of prepuceplasty was seen in 2 (4%). Dehiscence of prepuceplasty was seen in one. Meatal stenosis was seen in one case. All the remaining cases had a nice post-operative result with nearly normal appearing phallus. Conclusion: Prepuceplasty as an add on improves the cosmetic appearance of the hypospadiac penis. This procedure can be safely added in these cases.

Prepenile scrotum: an extreme form of complete penoscrotal transposition presenting with bladder outlet obstruction

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Purpose and Background: Urogenital anomalies are common. Most of these anomalies require staged management. Case report: A full term new born male presented at day 4 of life with abnormal genitalia. The baby was born as a normal vaginal delivery at home and was brought for abnormal genitalia and inability to pass urine after birth with features of sepsis. Phallus was present between scrotum and anus in the perineum. The orientation of phallus and scrotum gave an appearance of inverted genitalia. The meatus was present at the tip of the glans and was stenosed. There was no other fistulous opening or history of passage of urine per rectum on examination with an obvious palpable bladder. Cannulation of the urethra was tried but was not possible. An ultrasound was done which was suggestive of bilateral gross hydroureteronephrosis with bladder distension. Lab investigations were suggestive of acidosis and raised urea and creatinine levels. An emergency vesicostomy was done. Postoperative polyuria was followed by oliguria which was managed subsequently. The child was planned for staged repair of the defect in subsequent follow-up and was discharged. Conclusion: Prepenile scrotum is a rare urogenital anomaly. It needs a staged repair with only few reported cases.
3A-P31-1 Use of Trocar intercostal drain as tunneller in hydrocephalous: a novel technique
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Purpose and Background: Ventriculoperitoneal shunt insertion requires creation of subcutaneous tunnel requires tunnellers. This report highlights the use of trocar intercostal drain in the creation of subcutaneous space.

Aims: to assess the use of trocar intercostal drain as tunneller in insertion of the VP shunt.

Material and Methods: All the patients of hydrocephalous who underwent surgery using this technique were included. The study duration was June 2014- Feb 2017. Those with incomplete data, refusing consent or where tunnel could not be created were excluded. A semicircular incision was given over the right parietal region. Subcutaneous space creation was started using mosquito forceps. Number 16/20 intercostal drain with trocar was inserted and advanced under guidance towards the right hypochondrium. A stab incision was given over the drain, the abdominal end of the shunt was inserted through the drain after removal of the trocar to guide it downwards after cutting end of drain.

Study design: Retrospective

Results: sixteen out of twenty-one formed the study group. The mean age at presentation was 2 month (range 1–9 month). Mean duration of surgery was 41min (range30–60 min). Mean duration of hospital stay was 3 days (range2–5 days). All the cases operated were of hydrocephalous due to congenital aqueductal stenosis. 15 were primary cases while 1 was a redo case. The incidence of shunt block was seen in none. The average follow up was 3 month (Range 2–9 month).

Conclusion: Trocar intercostal drain is an alternative for standard tunneler in limited facility setups.

3A-P31-2 Single-incision thoracoscopic surgery (SITS) for congenital lung anomalies in children
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Purpose: Single-incision pediatric endosurgery is gaining popularity, especially for abdominal operations. However, few reports in the literature support the feasibility of single-incision thoracoscopic surgery (SITS) in pediatric for congenital lung anomalies. Here we report our initial experience with SITS. We also compare our outcome with multiple-port video-assisted thoracoscopic surgery (VATS) and traditional thoracotomy.

Patients and Methods: Retrospective review of all patients (less than 18 years old) who underwent surgery for congenital lung anomalies at our institution was performed. General data, operative data, anesthesia parameters and surgical outcomes were collected.

Results: From January 2009 to December 2017, total 21 patients with congenital pulmonary anomaly underwent surgery at our institution. 8, 6 and 7 patients were enrolled in thoracotomy, VATS and SITS groups respectively. There is no difference in age, body weight, post-operative stay and drainage period between groups. Marked higher conversion rate is observed in early VATS group. After introducing endobronchial blocker for one lung ventilation, all VATS and SITS procedure can be performed safely. We have no cases of residual lesion or mortality so far.

Conclusions: SITS is feasible in the pediatric population, whereas it needs experienced surgical skills and unique anesthetic requirements.
3A-P31-3 Facilitating pulmonary lobectomy in children with congenital cystic lung disease. Advantages of an extra trocar in the lower thorax

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Purpose: To describe how an additional trocar enhances the safety and efficiency of thoracoscopic pulmonary lobectomy (TPL) in children with congenital cystic lung disease.

Methods: The additional trocar (AT) was inserted in the 10th intercostal space (IS) in the posterior axillary line after trocars were placed conventionally in the 6th, 4th, and 8th IS in the anterior axillary line, for a 5mm 30o scope, and the surgeon’s left and right hands, respectively for a lower lobe TPL (LTPL) and in the 5th, 3rd, and 7th IS for an upper TPL (UTPL), with the AT in the 9th IS. Switching between trocars (8th ↔ 6th for the scope, 6th ↔ 4th for left-hand instruments, and 10th ↔ 8th for right-hand instruments during an LTPL and 7th ↔ 5th, 5th ↔ 3rd, and 9th ↔ 7th during an UTPL, respectively) adds another dimension by allowing vital structures such as the pulmonary veins, bronchi, and feeding artery(s) to be viewed posteriorly. Blood loss, operative time, duration of chest tube insertion, post-operative analgesia, intra-/post-operative complications were compared between TPL+AT (n=23) and TPL-AT (n=27). Results: AT greatly facilitated dissection of the posterior aspect of the pulmonary vein and bronchus. In TPL+AT, mean intraoperative blood loss (5.5 vs. 10.4 mL), operative time (3.9 vs. 5.4 hours), and chest tube insertion (2.0 vs. 3.1 days) were all significantly decreased (<.05, respectively). In TPL-AT, 1 case required conversion to mini-thoracotomy for bronchial artery bleeding. Differences in complications and post-operative analgesia were not significant.

Conclusions: An additional trocar significantly improved the safety of TPL in children with congenital cystic lung disease.

3A-P31-4 Pre and Post interventional lung function assessment in empyema thoracis patient of pediatric age group (5-14 years)

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Background: Empyema is a restrictive lung condition. Intervention removes the cause and should improve lung function.

Aim: To compare pre and post interventional lung function in empyema cases.

Material and methods: The study included diagnosed cases of empyema thoracis between 5–14 years of age presenting between Jan 2013- June 2014 who underwent some intervention. Mean pulmonary functions (FVC and FEV1) were calculated for empyema and their age matched controls at presentation, at 1 week, 15 days, 1 month, 3 month and 6 month interval. Percentage of predictive value of lung function for intervention was calculated by

Calculated mean lung function/ mean lung function of controls X100.

The preoperative percentage predictive values were compared with 6 month post operative value using paired t test.

Results: 40 cases formed the study group. Mean age was 6.6 years. Commonest symptom was fever. Sixteen underwent decortications while 24 underwent ICD insertion. Percentage predictive value of FVC increased from 55.84% to 67.70% and FEV1 increased from 63.90 to 74.31% in cases of ICD insertion (p=0.021). Percentage predictive value of FVC increased from 52.44 to 61.12% and FEV1 increased from 58.64 to 68.33% in cases of decortication (p=0.017).

Conclusion: Intervention significantly improves the pulmonary function in cases of empyema.
3A-P31-5 Lung Hydatid: Challenges in the management and outcome
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Background: Management of hydatid lung is associated with challenges due to the presence of associated bronchocavitary communications. Aims: to analyze the spectrum of presentation and outcomes in cases of hydatid lung. Material and methods: The data of June 2017-Dec 2017 was analyzed. Those with incomplete data or followup were excluded. All the cases underwent open thoracotomy with closure of the bronchocavitary communications using 3-0 prolene suture. The outcome parameters considered were number of bronchocavitary communications, duration required for the repair of bronchocavitary communication, fall in the SPO2, Duration of surgery, duration of major air leak in the ICD, duration of intercostals tube, duration of hospital stay and requirement of ventilatory support. Result: A total of 12 cases were analyzed. Mean age at presentation was 6 years (range:2–18 years). There were 7 right, 4 left and 1 bilateral cyst. Bronchocavitary communications were seen in 11. The average number of communications was 3 (Range:2–8). The average duration required for closure was 30 seconds (Range 20–180seconds). The average fall in the SPO2 was 40% (Range 20–74%). Mean duration of surgery was 2.15 hours (Range 1.45 hours-3.15 hours). Ventilator support was required in 4. Average duration of intercostals tube was 7 days (Range:6–14 days). Persistent airleak in ICD was seen in 2. The average duration of hospital stay was 14 days (range 12–34 days). Conclusion: Hydatid cyst lung is generally associated with bronchocavitary communication. The repair should be fast and specific. These cases need to be managed judiciously for better outcome.