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01
The feasibility of laparoscopy in the treatment of paediatric urolithiasis
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Objective: To assess the feasibility of laparoscopy in the treatment of paediatric urolithiasis, we report our experience with the transperitoneal laparoscopic removal of stones.

Methods: Renal pelvic stones of size >1 cm on ultrasound were included for laparoscopic pyelolithotomy while smaller stones were managed with shock-wave lithotripsy monotherapy. Intrarenal stones, calyceal stones, complete staghorn stones, multiple stones and kidneys with intrarenal pelvis were excluded. Ureretic stones included for laparoscopic ureterolithotomy were of size >1 cm in the upper, mid or lower ureter, and smaller stones not responding to non-operative treatment.

Results: A total of 22 procedures were performed: 12 pyelolithotomies, and 8 lower and 2 upper ureterolithotomies. Complete removal of calculi was accomplished in 21 (95.45%) procedures. Complications associated with laparoscopic lithotomy included urinoma (4.54%), failure (4.54%) and omental prolapse (4.54%).

Conclusion: Laparoscopic lithotomy is safe and feasible in paediatric urolithiasis with pyelic and ureteric stones, with minimal complications and failure rate.

02
Laparoscopic pyeloplasty in infants: single-surgeon experience with 114 operations
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Aim: To report our large single-surgeon experience with laparoscopic pyeloplasty in infants.

Methods: The records of all infant laparoscopic pyeloplasties over a 4-year period (109 babies, 114 kidneys, mean age 3.8 months, mean weight 5.3 kg) were analyzed. Preoperative evaluation included renal ultrasound and diuretic renogram (using Tc 99m DTPA) in all children. Transperitoneal laparoscopic pyeloplasty was performed in all babies with 3 ports. Double J stent was used in 102 kidneys. Follow-up renal ultrasound (96 kidneys) was done at 3-6 months and diuretic renogram (66 patients) at 6-12 months after the surgery; data were compared using statistical software.

Results: There were 104 unilateral and 5 bilateral pyeloplasties. The mean operating time was 106 min (70-145) and median hospital stay was 2 days (2-8). There were no major intraoperative complications. One child (1%) developed urinary leak that spontaneously resolved. At a mean follow-up of 15 months, all children are asymptomatic; ultrasound demonstrated significant reduction in the anteroposterior diameter of renal pelvis in all children (mean pre-operative diameter 34.4 +/- 13.4 mm versus mean postoperative diameter 10.6 +/- 5.7, p< 0.0001). On Follow-up renogram (41 children), there was a significant improvement in the differential function of the operated kidney (preoperative 22.1 +/- 8.6 % versus postoperative 35.6 +/- 11.4 %, p< 0.0001).

Conclusions: To our knowledge, this is the largest series of infant laparoscopic pyeloplasty till date. Laparoscopic pyeloplasty could be safely and successfully performed even in small infants, with minimal complications and good
results. Significant reduction in hydronephrosis & improvement in differential function can be expected in the majority of children.

03

PUJ obstruction in children: is laparoscopic pyeloplasty the procedure of choice?

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Purpose: To determine the efficacy and long-term outcome of laparoscopic pyeloplasty in pediatric patients.

Methods: Between August 2004 and December 2012, 99 children (61 males, 38 females; age range 6 to 144 months) underwent laparoscopic pyeloplasty for symptomatic or radiographic PUJ obstruction. The various parameters analysed were operative time, intra and postoperative complications, hospital stay and postoperative outcome.

Results: All patients underwent transperitoneal dismembered pyeloplasty. The mean operative time was 179 minutes and postoperative stay was 4.04 days. There were no intra-operative complications. Conversion to open surgery was required in four (4.04%) patients. Postoperatively 8 (8.08%) patients had culture proven urinary tract infection. All 9 patients with recurrent pain became symptom free postoperatively. There was improvement in function in 83 (83.83%) with no deterioration of function in 7 patients. Two patients who showed continued obstruction with deterioration of function underwent a redo pyeloplasty. The mean glomerular filtration rate (ml/min), preoperative and at follow-up were 31.08 and 39.4, respectively. Mean follow-up period was 31 months.

Conclusion: Our patients who have undergone laparoscopic pyeloplasty had very good results with low morbidity. We consider this our primary technique for surgical correction of PUJ obstruction in patients older than 6 months.

04

Modified umbilical port laparoscopic pyeloplasty in children

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Purpose: Over the past three decades laparoscopic surgery has become a well-established alternative to open surgery in the management of UPJ obstruction. Currently several efforts are being made, aimed at further reducing the morbidity associated with conventional laparoscopy. We report our experience with modified umbilical port laparoscopic pyeloplasty in children.

Methods: Children presenting with hydronephrosis secondary to UPJ obstruction formed the study group. In children undergoing the modified port laparoscopy, a 5 mm endoscopic port was placed on the inferior umbilical crease. The two 3 mm instruments were introduced through puncture sites created a few mm superior and lateral to the endoscopic port, under vision. Total operating time, time taken for insertion of double pig tail catheter, time taken for pyeloplasty anastomosis and complications were noted.

Results: During the study period, 4 children underwent conventional multiport laparoscopic pyeloplasty and three children underwent Modified umbilical port laparoscopic pyeloplasty. The Total operating time and the time for insertion of double pigtail catheter was significantly more with the modified umbilical port laparoscopy.

Conclusions: Modified umbilical port laparoscopic pyeloplasty reduces the morbidity associated with conventional multiport laparoscopy without the need of expensive multichannel cannulas, curved laparoscopic instruments and longer laparoscopic endoscopes. Though crossing instruments is a factor which prolongs the duration of surgery, it does not hinder complex suturing needed during pyeloplasty.

05

Laparoscopic extravesical reimplantation of ureter in children

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**Purpose:** Laparoscopic extravasical reimplantation of ureter is likely the most commonly reported procedure for laparoscopic correction of reflux. The technique has a steep learning curve; initial experiences described challenges with exposure of the ureter, trauma to the ureter, and difficulty developing the extravasical tunnel without injuries to the urothelium in addition to long operative times. We report our experience and 5 year follow-up.

**Methods:** During the period Jan 2002 to Dec 2011, children < 18 years of age undergoing laparoscopic repair of VUR formed the study group. Age, gender, grade of VUR, indication, duration of surgery, complications and follow-up was noted in all.

**Results:** During the study period 42 children with a mean age of 11.2 years underwent laparoscopic extravasical reimplantation of the ureter. In 39 cases it was unilateral and in the remaining three, bilateral reimplantation was done. Of these 42 children, 38 were females and the remaining four were males. The indications were persistent in VUR adolescents in 31, recurrent infection in 9, and deterioration of renal unit in 2. The mean surgical time was 76 minutes in unilateral cases and 112 minutes in bilateral cases. There were no major intraoperative complications, except for puncture of the submucosal tunnels in 5 cases. Three children had prolonged postoperative ileus, one child had fever and one child needed preoperative blood transfusion. The mean follow-up was 73 months. During the follow-up period, no children developed UTI. Three children who presented with opposite side VUR needed endoscopic management with Deflux.

**Conclusions:** Although open surgical correction of reflux is still the gold standard against which the endoscopic and laparoscopic approaches are compared, the technical advances and improved results achieved using minimally invasive techniques are gradually becoming an alternative option. Five year follow-up has shown good outcome in our series.

**06 Robot assisted laparoscopic removal of staghorn calculus**
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**Introduction:** In a child a large stone burden may necessitate the use of both Percutaneous Nephrolithotomy (PCNL) and Extra Corporeal Shock Wave Lithotripsy (ESWL) as sandwich therapy to obtain clearance. We describe the use of Robot Assisted Laparoscopic pyelolithotomy combined with URS through the assistant port to obtain complete clearance in a single sitting.

**Methods:** A 10 year old male child presented with a 4.5 cm staghorn stone and two large calculi in the inferior calyces. CT IVU raised the possibility of a PUJ obstruction due to a 'crossing vessel'. In an attempt to do both pyelolithotomy and PUJ correction at the same time, a robotic approach was attempted. Using the Da Vinci Si and three ports the renal pelvis was exposed. PUJ obstruction was excluded. Through a pyelotomy, the 4.5 cms pelvic stone was removed. Using a lithoclast it was broken into 4 fragments and extracted through the assistant port. Through the pyelotomy an ureterorenoscope was introduced and the inferior calyces visualised. It was found that the infundibulae were stenotic. Using a Holmium laser the impacted calculi were fragmented, flushed into the pelvis and extracted. Complete stone clearance could be obtained and the pyelotomy was closed over a 5 Fr 24 cms DJ stent.

**Discussion:** When there is a staghorn pelvic component and large calculi in the anterior and posterior segments of the inferior calyx PCNL is a difficult option. It necessitates two punctures and the infundibular stenosis prevents free access to the pelvic component of the staghorn for which 'sandwich therapy' may be needed with multiple sittings. Both procedures will leave behind multiple fragments. The robotic approach helped us to get complete clearance in one sitting and had the added advantage of avoiding a kidney puncture.

**07 Transumbilical laparoendoscopic single-site multiport approach in children: initial experience**
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**Background:** Laparoscopic surgery is now standard approach to treat many anomalies in children. Transumbilical laparoendoscopic single-site multiport approach is used to treat paediatric urological anomalies. This approach definitely gives better cosmetic results than conventional
Methods: Thirty one patients with different urological problems were operated using this approach from June 2011 to June 2013. Out of thirty patients, there were 6 pyeloplasties, 14 female herniotomies, 7 orchiopexies, 2 ovarian cystectomies, 1 retroperitoneal teratoma excision and 1 nephrectomy. Out of 31 patients 16 were female and 15 were male patients with the youngest patient being 2 months old. Three ports were used one 5mm for telescope 30degree and two working port of 3mm each. Routine straight working instruments were used.

Results: All the patients with herniotomy and orchiopexy were started on oral feeds after 4 hours after surgery. Caudal block analgesia was given to all the patients for analgesia for first 6 hours post surgery. Ovarian cystectomy, nephrectomy and retroperitoneal teratoma patient was started on oral feeds after 24 hours after surgery. Drain was used in two patients i.e. retroperitoneal teratoma and nephrectomy. We found that severity of pain was less as compared to conventional laparoscopic surgeries. There was single scar at the umbilical region and cosmesis was better than conventional laparoscopy. There were no major complications in series. Two patients had umbilical wound infection and were treated with local dressing.

Conclusion: Transumbilical laparoendoscopic single-site multiport approach is feasible and safe approach in paediatric urological surgeries in children. However this is small series and initial experience.

Uro lithiasis in the paediatric augmented bladder: incidence and risk factors
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Purpose: Bladder augmentation has become the mainstay of treatment for a variety of urological conditions providing a low pressure continent catheterizable reservoir. Incidence of stones reported in the augmented bladders varies from 7 to 52.5 %. We examine the incidence and risk factor of urinary calculi in our patients with bladder augmentation.

Methods: A total of 268 children and teenagers underwent bladder augmentation during Jan 1997- Dec 2012. 217(81 %) of them had at least 5 months of follow up after bladder augmentation and their records were reviewed for this study. All our patients have been advised clean intermittent catheterization and daily bladder irrigation.

Results: Two hundred and seventeen (217) children were followed up for an average of 58.9 months (5-192). There were 143(66%) males and 74(44%) female with an average age of 6.4yrs (0.5-19) yrs. The children were operated for conditions such as extrophy and incontinent epispidias (83), neurogenic bladders (67), Posterior urethral valve (PUV) (32) and misc (35). The type of bowel segment used for augmentation was sigmoid (111), ileocaecal (60), ileum (24), ureter (16) and others (8). Mitrofanoff procedure was done in 202 children {appendix (168), uteter (14), monte (4), miscellaneous (14)}. Bladder neck division was performed in 37 children. Preoperative urinary calculi were observed in 13 children {bladder stone (10), kidney stone (1), Kidney+ureter+bladder stones (1), and ureter + bladder stones (1)}. Twelve of these were children with extrophy and one was a child with neurogenic bladder. Postoperative calculi were seen in 16(7.3%) children; ten of them had extrophy, two had epispidias, two had neurogenic bladder and none had PUV. These calculi were observed in the bladder (13), kidney (2), bladder + kidney (1). Five patients had a bladder neck division. Thirteen children were performing CIC through the appendicular mitrofanoff while 3 children were using the urethral route. Three children (all of them with extrophy) had calculi before the augmentation. Post op recurrent calculi were noted in 2 children (both extrophy).Calculi were detected at a mean interval of was 58.8 months (10-160 months) following bladder augmentation.

Conclusion: Calculi formed in 7.3% of patients following bladder augmentation that had been followed up for 58.9 months (1085 augment years). Calculi were detected at a mean interval of was 58.8 months post operatively. Exstrophy, BND and previous calculi are predisposing factors to develop urinary stones. Daily bladder irrigation probably decreases the risk of stone formation.

Our experience of paediatric urolithiasis in northwest rajasthan
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Objective: Paediatric urolithiasis has increased globally in the last few decades with an increase in the frequency of kidney stones and a decrease in bladder stones. This retrospective study was done to determine clinical characteristics, evaluation and course of current diagnostic and management strategies in paediatric age group.

Methods: This was a retrospective study of 50 children with newly identified urolithiasis between April 2009 and August 2012. Cases were reviewed for demographics, presentation, diagnostic methods and findings, anatomic abnormalities and management.

Results: Fifty patients (41 male, 09 female) were assessed. Mean age was 8.48 years, with maximum no case in 10-12 years age group (56%) and adult paediatric ratio was 1:16 (50 children, 807 adult). Youngest patient was 1.5 years old. Suprapubic pain (70%) was the most common presentation followed by flank pain (38%). Upper urinary tract stones were found in 28% (renal stone 12% and urethral stone 16%), lower urinary tract stones were found in 66% (bladder stone 60%, urethral stone 6%) and 3 (6%) patient had both upper tract and lower urinary tract stone. 38 patient (76%) had open surgical procedure and PCCL, PCNL, URS with DJ stenting and endoscopic removal of impacted urethral stone was done in 8%, 4%, 6% and 6% patients respectively.

Conclusions: Trends in present study lower urinary tract stones were found in 66% (bladder stone 60%, urethral stone 6%) shows that trends in present study still not changed to upper tract. Although treatment modality in present study is predominantly open surgical procedures (76%), trend is changing towards minimal invasive (24%), with advancement in endourology.

10 Single system ectopic ureter: Study of 7 cases from single tertiary care centre
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Purpose: Single-system ectopic ureter (SSEU) encompasses a spectrum of malformations involving the bladder trigone, ureter and kidney. The clinical presentation is variable, and both diagnostic and therapeutic problems are common.

Methods: We present our experience of single system ectopic ureters treated over the last five years.

Results: Spectrum ranged from unilateral ectopia with non-functioning kidney which was simplest to treat to extreme of anomaly with bilateral affection with urogenital sinus which was very complex to repair. In the last case the bladder neck and both ureters were opening into vaginalized urogenital sinus.

Conclusion: Bilateral ectopic ureters are complex to treat. Bilateral single-system ectopic ureters opening into urogenital sinus present a unique challenge for genitourinary reconstruction because of the absence of the urethra in addition to an incompetent vesical neck and the small capacity of the bladder adds up to the problem of incontinence besides problems associated with vaginal reconstruction.

11 Ureteric atresia with a functioning kidney- a unique case (first in the world)
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Ureteric atresia is known with dysplastic Kidneys. No case has been reported in English literature till date where a functioning kidney has been found with a ureteric atresia. We present a case which was diagnosed antenatally but referred to us at the age of 6 months with a provisional diagnosis of left mega ureter or left vesico ureteric junction obstruction. The case was investigated and taken up for surgery for ureteric reimplantation. However the intra operative findings proved beyond doubt that it was ureteric atresia (descriptive photographs). The operative plan was changed and an end to end ureteric anastomosis was made. The patient has been followed up for eight years and his left kidney has shown excellent recovery. The case is being presented as the first in the World.

12 Early elective surgery in unilateral multicystic dysplastic kidney (MCDK)
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Purpose: Children with MCDK are being now diagnosed
antenatally with an estimated incidence of 1:4300 live births. In absence of complications, they are increasingly managed conservatively; but because of the long term risk of hypertension; even after involution, they are also followed-up throughout child hood. Current literature showed that the risk of hypertension does not justify routine nephrectomy but surgery is still proposed as the treatment of choice because of potential complication of hypertension, infection and malignant changes.

**Cases Summary:** In two antenatally diagnosed children with UMCDK, we experienced that early surgery may cure the hypertension early. These two children diagnosed to develop hypertension within 4 months of age. One child was operated within month of diagnosis and fully cured having normal blood pressure in last one year of follow-up. Other child was initially managed by antihypertensive drugs and latter at 2 year of age, surgery was performed. Her blood pressure is gradually falls and normalizes after 10 month of nephrectomy.

**Discussion:** Current literature recommends non-operative management; because of spontaneous involution, low risk of hypertension / malignancy and nephrectomy is usually not curative in these conditions; hypertension may persist after nephrectomy and no difference in the number of complication in operative vs non-operative groups. While early nephrectomy recommended because it is more cost-effective than non-surgical follow-up. Duration of follow-up for BP surveillance is widely variable and not based on solid evidence and leaves patients at risk of infection, hypertension and cancer, especially in those cases lost to follow-up. After spontaneous involution (~ 40% cases) there may still be a risk of HTN.

**Conclusion:** nephrectomy is better option to manage the hypertension in UMCDK when performed early; especially in countries where regular follow-up is difficult.

**13**

**Laparoscopic mitrofanoff appendicovesicostomy: our experience in children with neurogenic bladder**

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**Purpose:** The Mitrofanoff principle was originally described as a method to provide an alternative means to access the bladder. It creates a conduit to the bladder through which patients with a sensitive, absent or traumatized urethra can perform clean intermittent catheterization (CIC) easily. We report our experience with complete laparoscopic Mitrofanoff appendicovesicostomy to promote a catheterizable abdominal stoma in children with neurogenic bladder.

**Methods:** A 4-port transperitoneal approach was used to create a complete laparoscopic Mitrofanoff appendicovesicostomy.

**Results:** Twelve children with a mean age of 14.6 years (range 7–16 years) underwent laparoscopic Mitrofanoff appendicovesicostomy. Mean operative time was 145.6 mins and Mean estimated blood loss was 42 cc. No cases of urinary leaks were noted. There have been no cases of either stomal stenosis or appendicovesical stenosis noted.

**Conclusions:** Pure laparoscopic Mitrofanoff appendicovesicostomy is feasible and is associated with reasonable outcome with early recovery, resumption of normal activities and excellent cosmesis.

**14**

**Preliminary experience with laparoscopic Foley's YV plasty for UPJ obstruction in children**

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**Purpose:** Laparoscopic dismembered pyeloplasty is an acceptable option for ureteropelvic junction (UPJ) obstruction in the pediatric population. We compared our results of laparoscopic dismembered and non-dismembered Foley's YV pyeloplasty.

**Methods:** Children presenting with hydronephrosis secondary to UPJ obstruction formed the study group. Foley's YV plasty was planned whenever it was observed that a tension free dismembered pyeloplasty was not possible inspite of all possible manoeuvres. Children were followed up for urinary infection, and renogram was repeated after 3 months.

**Results:** During the study period 208 children (123 male and
85 female) with a mean age of 4.94±2.78 years underwent laparoscopic dismembered pyeloplasty and 5 other children (3 male and 2 female) with a mean age of 4.00±1.776 years underwent laparoscopic Foley’s YV plasty. There were no major peri-operative complications noted and conversion to open was not necessary in any child. Renogram done at 3 months post-operatively showed good drainage and improvement of renal function.

Conclusions: Laparoscopic Foley’s YV pyeloplasty is a safe and effective technique in appropriately selected cases of primary UPJ obstruction in children.

15
Robot Assisted Laparoscopic Pyeloplasty (RALP) mimics the open operation
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Introduction: This paper is a retrospective review of RALP in 13 children with PUJ obstruction.

Methods: Since September 2012 we have done robot assisted pyeloplasty in 13 children - 2 - 16 years old (median 4). A transperitoneal dismembered pyeloplasty was done with a running suture of 5/0 vicryl. Age appropriate stents were deployed in all cases and removed 4 – 6 weeks later by cystoscopy. Extensive trimming of a large pelvis was carried out in nine cases. A crossing vessel was encountered in three cases. In three children a redo pyeloplasty was done along with retrieval of statis calculi in one using an ureterorenoscope.

Results: The average time for surgery was 172 mins from induction to recovery. In three cases timing exceeded three hours. Two of these were redo’s and in one child redocking of the robot caused delay. After stent removal ultrasound evaluation has shown satisfactory outcomes in nine. We found a steep drop in surgical time with increasing experience. At the end of the first six cases the procedure could be completed in 120 minutes in almost all the others. All children were ambulant in a day and were discharged 48 hours after the procedure.

Conclusion: RALP is a precise reproduction of the open operation and can be easily carried out after robotic training with excellent results. We found that with increasing experience the total time taken for completion of the procedure was well within 2 hours thus mimicking the open operation in every respect. Once 40 – 50 procedures are completed we are confident that total duration of surgery will be within one hour.

16
Transumbilical laparoendoscopic single-site multiport pyeloplasty in children: initial experience and short-term outcome
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Background: Laparoscopic pyeloplasty in children is nowadays a accepted approach to treat pelviureteric junction obstruction. There have been continuous efforts to reduce the number of ports and morbidity. Thus there was the emergence of natural orifice transluminal endoscopic surgeries (NOTES). But NOTES has higher technical difficulties and requires more advanced equipments and instruments, it currently cannot meet the clinical requirement, thus was only performed in animals. There are reports of LESS (laparoendoscopic single-site surgery) done in children. We have utilized this approach in paediatric patient with PUJ obstruction.

Methods: 6 patients with PUJ obstruction were treated by Transumbilical laparoendoscopic single-site multiport pyeloplasty from December 2012 to June 2013. Out of them 5 patients were males and 1 was female.3 patients had right and 3 had left PUJ obstruction. All the patients were investigated with ultrasonography, renal isotope scans. All had undergone dismembered Anderson-Hynes Pyeloplasty. uretero pelvic anastomosis was done with 5-0 vicryl over Double J stent. Urinary bladder was drained with Foley’s catheter for 7 days postoperatively.

Result: All operations were successful. None was converted to open or conventional laparoscopy. No postoperative complications occurred. The mean operative time was 180-200 minutes. Average blood loss was 10-20ml. Two patients had ectopic lower polar accessory vessels. Peritoneal cavity was drained by 10french tube which was put through small incision in flank. Drain was removed on 2-3 day once it stopped draining. Double J stent was removed after 3 weeks. Ultrasound was done 3 weeks after removal of double J stent. Renal scan was done after 3 months after removal of double J stent. Except for the last two patients in series, all patients had
reduction in size of pelvis. Last two patients are yet to undergo ultrasonography. Three patients have undergone diuretic renal scans and have shown improvement in the function. Rest patients are yet to undergo the scans.

**Conclusion:** Paediatric Transumbilical laparoendoscopic single-site multiport pyeloplasty is not only safe and effective but can also well meet patient's aesthetic desire for scar-free abdominal wall.

17

**Postnatal assessment of antenatally detected cases of pelvi-calyceal dilatation: A prospective study of 120 cases**

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**Purpose:** To evaluate natural course of antenatally detected pelvicalyceal dilation in postnatal period, categorise patients into low, moderate and high risk and to decide followup protocol, to assess the need for surgical intervention in these cases and various factors influencing it.

**Method:** 120 cases of antenatally diagnosed pelvicalyceal dilatation were followed up in postnatal period for period of 5 years. Postnatal USG was done on day 5-6 of life, 1 month, 3 months and renal scans were done at 4 weeks of life. Low risk patients—SFU grade 1 and 2, APD <1 cm, differential function >40%; Moderate risk patients—SFU grade 3, APD between 1-2 cm, differential function 30-40%; High risk patients—SFU grade 4, APD>2 cm; parenchymal thinning, Palpable lump, differential function <30%; USG was repeated at every 6 months and scans yearly. Decision to go ahead with surgical intervention was taken depending upon Antero posterior diameter of renal pelvis, parenchymal thickness, differential function on renal scans, deterioration of function in follow up scans and in symptomatic patients.

**Results:** The patients were followed up for 2 years. No of cases-120, Male: female — 78:42, Site – left 66% and Right 44%. Surgical intervention (modified Anderson-Hynes Pyeloplasty) needed in patients [39.02 % cases]. SFU grade: Left side: right side: Renal units resolved after surgery (%) [I 12 28 NONE NONE] [II 29 18 11 37%] [III 53 28 25 47%] [IV 26 NONE 26 100%]

**Complication- Recurrence of obstruction, urinary tract infection.**

**Conclusion:** Antenatally detected pelviureteric junction obstruction can progress to either resolution or surgery. Predictors for surgery include SFU grade, increasing AP diameter differential renal function and curve pattern. Waiting for one month post natally till surgery and evaluation becomes technically possible is not harmful.

18

**Congenital megaureter and ipsilateral PUJ obstruction**

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**Aim:** I am presenting a case of PUJ obstruction with an uncommon association with ipsilateral obstructed megaureter.

**Case report:** A one year old child presented in emergency with complaints of excessive vomiting, irritability and a large right inguinal hernia. There was suspicion of abdominal colic also. After supportive treatment, USG revealed Left hydronephrosis (no ureteric dilatation reported). DTPA scan showed Lt PUJ obstruction. Left Pyloplasty was planned. Per operatively – PUJ obstruction due to aberrant lower pole vessels and also dilated kinked ureter was found. A-H pyloplasty anterior to vessels was done and upper ureter was straightened. Nephrostomy was put. Right herniotomy was also done. Nephrostogram revealed an obstructed megaureter. Surgery for the same was done on 14th POD. A Polatino-Leadbetter reimplant was done instead of Cohen’s because of relatively short final ureteric length. The child has been discharged and is asymptomatic.

**Discussion:** the association of PUJ with megaureter is uncommon. When considering repair of PUJ with obstructed UPJ on same side, PUJ is repaired first. Management may be complex hence a careful approach is advised.

19

**Hypertension in children with congenital pelvi-ureteric junction obstruction and its resolution after surgery: A seldom looked at aspect**

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**Purpose:** Hypertension in children with congenital PUJO is
considered an unusual event. No study has specifically studied its incidence in paediatric PUJO and its resolution after surgery. Hypertension can have long term harmful consequences and may have to be considered an indication for surgery. This study aims to assess the magnitude of association of PUJO with hypertension and its resolution after surgery.

**Methods:** A retrospective study was carried out at the Paediatric Urology clinic at Dr. RML Hospital including all children diagnosed with PUJO from 2009 to 2012. Blood pressure of all children was recorded and compared with standard blood pressure tables. Hypertension was controlled with anti-hypertensive medication before pyeloplasty. Anti-hypertensives were tapered post-pyeloplasty if feasible. The resolution of hypertension and dependence on anti-hypertensives was noted.

**Results:** 25 males and 5 females (age range 5m to 9 years) were diagnosed with PUJO. 25 underwent pyeloplasty. Five patients (16.66%) had hypertension requiring anti-hypertensives. Another had pre-hypertension. He did not receive anti-hypertensives but underwent surgery because of pain. Post-pyeloplasty anti-hypertensives could be tapered off in 4 out of 5 patients (80%). All the patients were off the anti-hypertensive medications within a year of surgery. Hypertension continued in the fifth patient until finally nephrectomy was done for poorly functioning kidney. The child with pre-hypertension demonstrated normalization of BP post-pyeloplasty though the child was not prescribed any anti-hypertensive medication.

**Conclusion:** Hypertension may be associated in a significant number of children with PUJO and resolves in majority of children after pyeloplasty. Hence careful screening of children with PUJO should be done for hypertension. In view of long term harmful effects, hypertension should be considered one of the indications for pyeloplasty in children with PUJO.

**Role of various variables in the results of TIPS**

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**Purpose:** Tubularized incised plate technique is most commonly used for hypospadias repair. Various variables affecting the results in management of hypospadias are age of the child, severity of hypospadias, size of penis and glans, penile curvature, development of spongiosum, surgical skill and suture material. Purpose of the study was to evaluate the role of these variables in results of TIPU repair.

**Methods:** We prospectively evaluated 125 patients (single surgeon & same conditions surgery) of TIPU repair from April 09 to October 11. Study parameter were age, severity of hypospadias, degree of curvature & torsion, size of penis and glans, width of urethral plate, development of spongiosum and complication rate. Patients were classified into five groups by age, Group I 6 months to 2 years, Group II 2 to 5 years, Group III 5 to 10 years, Group IV 10 to 15 years and Group V older than 15 years. Spongiosum was taken a thin fibrous as a poorly developed, a good vascularized as moderate one & a healthy robust as a well developed. Urethral plate was considered wide if tubularized without incision over the urethral size catheter for the age, required superficial incision as an average & deep incision as a narrow.

**Results:** Age range from 6 months to 26 years with a mean of 8.8 years. Number of Patients in Group I were 30, Group II 28, Group III 22, Group IV 20 and Group V 25. Over all complications reported were in 13/125 (10.4%) patients. Complication rate when comparing group V and youngest patients (I & II) was 20% Vs 3.6% (p-0.08) and comparing older children (III & IV) and youngest patients (group I & II) was 15% Vs 3.6% (p 0.135). Severity of hypospadias did correlate with rate of complications (30% in proximal, 5.7% in distal & 11.1% in mid penile hypospadias (p-0.001). The complication rate was 3.6% in mild, 38.8% in moderate & 35.7% in severe curvature cases (p 0.001). Complication rate in poorly developed spongiosum patient of group V were very high (p-0.001). Complications were 41.2% in narrow urethral plate cases and 8.3% in average width cases (p-0.0001). Follow up period was from about 10 months to 2 years (mean 16 months).

**Conclusions:** Urethral fistula and stricture were most common reported complications. Important factors in outcome of TIPU repair were degree of curvature, width of urethral plate and development of spongiosum, age of child and severity of hypospadias. Urethral plate and spongiosum development is inversly proportional to complications. Complication rate in adult patients was significantly higher than in youngest patients. Risk score is a guideline for new
surgeons to select case for surgery/ referral.

21  
**Ileo-caecal 'DOUGHNUT' Augmentation Cystoplasty for exstrophy bladder: Follow up study of 46 children**  
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**Purpose:** To assess the results of Doughnut Augmentation cystoplasty in cases of Exstrophy bladder- study of 46 children  
**Methods:** Doughnut augmentation is a modified Ileo-caecal augmentation which allows the appendix to be used as Mitrofanoff without reimplantation. This technique was used in 46 Exstrophy children along with continence procedures. Their results were analysed retrospectively.  
**Results:** Of the 46 children followed up, 40 underwent YDL plasty and 35 were dry per urethra with clean intermittent catheterisation, 5 remained incontinent and required bladder neck division. 6 had bladder neck division along with the augmentation itself.  
None of the 46 patients had leak from the Mitrofanoff port. Of the 92 renal units 72 had usg on followup, 68 had no hydronephrosis. Reflux was assessed with MCU in 72 units and 60 units had no reflux. Urodynamic study was done in some children and pressures were found to be adequate.  
**Conclusion:** Doughnut augmentation is a simple and effective method of augmenting exstrophy bladder which does not need reimplantation of the appendix for Mitroffanof.

22  
**The spinal abnormality in patients with hypospadias**  
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**Background:** We sometimes see patients who have trouble of urination after urethroplasty for hypospadias. The reasons were not only complications of urethroplasty but also dysfunctional voiding. In those who had difficulties of urination, we found some abnormalities of the spinal cord.  
**Purpose:** We evaluated the spinal abnormalities in patients with hypospadias.

**Methods:** Primary hypospadias patients who visited our department from March 2009 to February 2013 were investigated. We evaluated spinal abnormalities by two methods. In babies under 3 months, spinal ultrasound was performed. In case they were positive for spinal abnormalities, MRI was done. In older than 3 months, spinal MRI was performed under general anesthesia. Those were diagnosed by paediatric radiologists.  
**Results:** We found 46 cases with spinal abnormality in 115 primary hypospadias. The morbidity rate was 40%.  
**Conclusion:** We consider that there is a possibility that spinal abnormalities may be common in patients with hypospadias.

23  
**Treating a difficult cosmetic issue after "Kelly Procedure"**  
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**Introduction:** The Kelly procedure for exstrophy epispadias involves shifting the corpora towards the midline (by subperiosteal dissection) leaving the pubic v separated pubic rami becomes a difficult cosmetic issue to correct. We describe our experience with the treatment of two such patients.  
**Methods:** Two boys 13 years old had undergone the Kelly repair for correction of exstrophy epispadias. Clinical examination showed persistent dorsal chordee and a deep suprapenile depression between widely separated and prominent pubic rami. To fill this defect the rectus muscle was turned down on its blood supply. The level of division was based on the length needed to hinge on the blood supply at the level of the umbilicus. To assess this, the gap between the pubic rami was assessed and an appropriate length was selected above the umbilicus. The muscle after division provided enough bulk to fill the defect and with skin flap adjustment a very pleasing cosmetic outcome could be obtained.  
**Discussion:** To correct this difficult cosmetic issue three options were considered. Tissue expansion and flap cover was considered and given up as it was felt that sufficient expansion of the scar tissue was not possible and bulk would not be provided. A vascularized fibular bone graft with
muscle to bridge the pubic bones was considered and also given up due to its complexity and also doubt about its survival in the scarred poorly vascularized area. The rectus muscle turn down is our procedure of choice as it provides thick vascular bulky tissue with a good cosmetic outcome and is technically simple to understand and execute.

24
Is a flipped bladder tube a good urethral substitute?
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Introduction: Two girls with an absent urethra underwent reconstruction using a flap outlined on the anterior bladder wall. This paper describes the outcome of this procedure.

Methods: A six year old with urethral trauma following a road traffic accident presented to us with a suprapubic catheter which had been in-situ for a year. After bladder enlargement by cycling, a flap 4 cms long and 2.5 cms wide and based on the closed bladder neck was outlined on the anterior bladder wall. This flap was flipped downwards, tubularised and routed under the symphysis pubis. To create a urethrovesical angle a few sutures of 2/0 vicryl was used to cinch this area. Postop evaluation revealed a roomy urethra but a surprisingly normal looking and competent bladder neck. The child also underwent robot assisted laparoscopic reimplantation of a refluxing left ureter. One year later the child has a post void of 25 mls but with double voiding and alpha blocker therapy is dry for at least 2 hours. Another child with caudal regression syndrome and a urogenital sinus presented to us with urine leaking from a patent urachus. A neourethra was reconstructed using the flipped bladder tube principle. A year later though the child is voiding from below persistent large postvoid residue has necessitated an appendico-vesicostomy for CIC.

Conclusion: Urethral reconstruction using a flap of anterior bladder wall and based on the bladder neck was first described by Saeed Ahmed in 1996. We have used it in two children with excellent results. The normal looking and competent bladder neck obtained is a distinct plus point. The patients of the first case were very grateful for the restoration of normal voiding.

25
Primary obstructed megaureter- prospective study of 10 cases
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Purpose: Primary obstructed megaureter has been recorded in approximately 25% of paediatric obstructive uropathies. We aim to study 10 patients of primary obstructive megaureter and predict natural history and identify pt needing immediate intervention and conserting others with watchfull waiting and determining various factors influencing it.

Method: inclusion criteria- all patients with ureters > 7 mm and no reflux were included in the study. Presentations antenatally detected cases of hydroureterosis with UTI with dilated ureters with obstruction at vesico-ureteric junction were studied. Regular follow up with USG, renal scans and blood parameters was done. Retrograde DJ stent insertion was attempted in 1 case. Indications for surgery- ureters >2 cm Differential function> 30% surgical intervention was done in the form of diversion and reimplantaion. Followup-USG and scan

Results: No of cases -10 Male: female- 7:3 Site – bilateral- 8 Definitive Surgical interventions needed in patients 70%.

Conclusion: Most of the cases of primary obstructive megaureter are now discovered prenatally. Our attempt was to evaluate natural history, identify patients needing immediate intervention and follow others conservatively and determine predictors of deterioration. Indications for surgery included recurrent breakthrough urinary tract infections, decreasing renal functions, and increased degree of hydroureteronephrosis.

26
Effect of gabapentine in overactive bladder
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Objective: To determine the effectiveness of gabapentin as an add-on therapy in children with overactive bladder not responding to conventional anticholinergics.

Methods: The children with refractory OAB were included in the study in a prospective manner from March 2011 to
February 2013. The inclusion criterion was the persistence of symptoms while on conventional anticholinergics for a duration of 6 months. Gabapentin was prescribed as an add-on therapy in these patients. The primary end point was the improvement in bladder dairy data and urodynamic indices while the secondary endpoint was the tolerability and the safety of the drug.

**Results:** 31 children with OAB were enrolled in the study; 25 of neurogenic OAB and 6 of non-neurogenic origin. The mean age at enrollment was 8 yrs (range 4 to 16). Continence improved in overall 16 (53.3%) patients. Of these 3(10%) were complete dry, 6(20%) had significant improvement and 7 (23.3%) had partial response. In 3-day voiding diary the voiding volume improved from 175 +90 to 320 +110 ml. Mean maximum cystometric bladder capacity improved from 210 + 94 to 360 + 110. The maximal detrusor contraction decreased from 95 + to 25 + 15 cm H2o (p < 0.02).

**Conclusions:** Gabapentin gives moderate results in children with over active bladder refractory to conventional anticholinergics. The drug is well tolerated and lacks systemic antimuscarinic adverse effects.

27
**Long-term follow-up in children following testicular sparing surgery**
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**Purpose:** Testicular tumors account for 1% to 2% of all paediatric solid tumors, and benign lesions represent a greater percentage of cases in children than in adults. Prepubertal testicular tumors are distinct from those of adults in histologic characteristics, molecular biology and clinical behavior. Although germ cell tumors are far more common than stromal tumors in both the age groups, the vast majority of adult tumors are malignant with histologic features of either seminoma or mixed germ cells. In contrast, the most common histologic features for prepubertal tumors are pure yolk sac and teratoma. As most tumors in children tend to be benign, testis sparing surgery for these benign lesions appears an attractive proposition. Testicular preservation is possible in most cases of benign lesions. We took up this study to look at long term safety of this procedure and, as well as to study the effects of this procedure on testicular volume.

**Methods:** Children undergoing testis preserving surgery for testicular tumor were prospectively included into the study. All these children were followed up at 3 monthly intervals in the first year, and yearly thereafter following surgery. At follow-up visits the children were questioned regarding pain (orchalgia), appearance of any mass or swelling at the operated site. Physical examination was done in all to rule out abnormalities on palpation. Scrotal ultrasonography was done in all. Testicular size was calculated by using the Lambert formula. An atrophy index for the operated testis was calculated.

**Results:** During the study period Jan 1999 to Dec 2011, a total of 26 children with a mean age of 4.6 years underwent testicular preserving surgery. None of the children had any recurrences. There was no evidence of testicular dysmorphia, although the affected testis was smaller with a mean atrophy index of 15. Ultrasonography confirmed normal appearing parenchyma with no evidence of previous surgery or recurrent lesions.

**Conclusions:** Testicular sparing surgery is an attractive option in the management of benign testicular tumors in children. Long term follow-up confirms safety of this technique and also acceptable atrophy index. Children reported satisfaction with cosmetic appearance.

28
**Nephron sparing treatment for unilateral Wilm’s tumour**
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**Purpose:** Wilm’s tumour is associated with excellent cure rates. Nephron sparing surgery is an established treatment for bilateral tumours. The purpose of this retrospective study is to evaluate the adequacy of nephron sparing partial nephrectomy in cases of unilateral Wilms tumour

**Methods:** 22 patients diagnosed with Wilm’s tumour were treated between 2006 and 2012. Chemotherapy was given after initial evaluation and needle biopsy for 8-10 weeks. 7 children were selected for partial nephrectomy and rest underwent total nephrectomy. Post-operative chemotherapy was given to all children for 8 months.

**Results:** No increased incidence of immediate complications like haemorrhage and urinary fistula or late like local
recurrence or systemic metastasis was noted.

**Conclusion:** Our study shows that partial nephrectomy is equally effective in the treatment of unilateral Wilms' tumour after pre-operative chemotherapy. Nephron sparing surgery is possible in unilateral Wilms' tumour.

**29**

**Neoadjuvant chemotherapy in inoperable neonatal Wilms tumour**

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**Purpose:** Neonatal presentation of Wilms tumor is rare with an incidence of 0.16%. The treatment protocol has to be tailored to the child. Most studies recommend nephrectomy followed by chemotherapy. We present a child who present in the neonatal period with stage 2 Wilms tumor.

**Method:** This Child presented at 20 days of age with a large abdominal mass. Upon investigation it was found to be a renal mass. The mass was 72 x 71 x 91 mm in size, crossing the midline. It was not invading the vessels. A trucut biopsy was done, which revealed a triphasic Wilms tumor. The mass appeared inoperable; hence it was decided to give neoadjuvant chemotherapy for the child. The child underwent 4 cycles of chemotherapy with Actinomycin-D and Vincristine with 50% dose reduction. The child tolerated chemotherapy well and there was significant reduction in size of the mass. The Child underwent radical nephroureterectomy. Post operative chemotherapy was continued for 24 weeks. The child was not given any radiation. On follow up for one year child is thriving well and has not had any recurrence.

**Discussion and Conclusion:** In literature, the conventional treatment for neonatal presentation of Wilms tumor is radical nephroureterectomy followed by chemotherapy. It has been observed that even aggressive tumors in neonates have a better prognosis than a presentation at an older age. In our patient the mass was rapidly increasing in size and the mass appeared inoperable. Neoadjuvant chemotherapy was given and the child showed a remarkable response. After 4 cycles the tumor size had reduced significantly and a radical nephroureterectomy was done. The child tolerated the neoadjuvant and adjuvant cycles of the chemotherapy well. In conclusion, neonatal Wilms tumor which may appear inoperable can be successfully treated with a combination of neoadjuvant chemotherapy and surgery.

**30**

**Correlation of severity of penile torsion with type of hypospadias and ventral penile curvature**

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**Purpose:** Objective of this study was to evaluate the correlation of the severity of penile torsion with the type of hypospadias and degree of ventral penile curvature.

**Methods:** A retrospective review of 316 hypospadias cases was conducted between January 2006 to October 2011. Among these 100 cases (age 8 months to 26 years (mean 8.37 years)) had penile torsion. Location of meatus, degree of penile curvature, dorsal hood and deviation of median raphe on the dorsal hood were reviewed and noted. Degree of penile torsion to either side of midline and ventral curvature were measured using a sterile small protractor around the penile shaft.

**Results:** The degree of torsion varied from 15 to 110 with an average of 51.98 with 73% on left and 27% towards right side. Severe torsion was seen in 9%, moderate in 40% and mild in 51% cases. The mean torsion in distal penile hypospadias (67 cases) was 62.38 + 23.030, in mid penile (21 cases) 38.04 + 18.50 degrees and in proximal hypospadias (12 cases) 18.25 + 3.33 degrees (p value=0.001). The mean chordee (60 cases) in distal penile hypospadias was 38 + 18.55 degrees, in mid penile 44.28 + 21.11 degrees and in proximal hypospadias 73.58 + 32.96 degrees (p value=0.001).

**Conclusions:** Torsion is more common and severe in distal hypospadias while chordee in proximal hypospadias. Degree of torsion is inversely proportional to the severity of ventral curvature. Degree of rotation fairly correlates with meatus, towards the side of torsion and attachment of median raphe to dorsal hood towards opposite side.
Two cases of postoperative complication as vesicovaginal fistula and urethro rectal fistula - surgical correction
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Patient I: Four year old female child, diagnosed as a case of left ectopic ureter with grade IV reflux, underwent ureteric reimplantation at 6 months of age, following which baby had continuous dribbling of urine. She was evaluated for the same at 4 years of age found to have vesicovaginal fistula with left hydroureteronephrosis.

Surgery: Vesicovaginal fistula repair, with left ureteric reimplantation was done.

Results: post operatively, there was no leak, bladder capacity improved, voiding well with good control.

Patient II: Six year old boy was operated for imperforate anus in the newborn period, as a single stage anoplasty for low ARA. Post operatively he was passing urine from the rectum. Occasionally he was passing urine from the meatus while straining. On evaluation he was found to have urethra rectal fistula.

Surgery: Urethro urethral anastomosis with perineal repair

Results: postoperatively, baby passing urine normally from the meatus, no leak.

Conclusion: Meticulous dissection and knowledge of anatomy is needed to perform any surgery. The need for proper history, examination, investigation to evaluate to exact problem and perform the surgery makes to correct the most devastating problem

Hypospadias sine hypospadias/ chordee without hypospadias: need to reclassify the entity
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Purpose: To discuss the need for newer classification, and propose a simplified classification of Hypospadias sine hypospadias/chordee without hypospadias (CWH).

Material: The Modified Devine classification suggested cutaneous chordee as type III, Fibrous chordee as type II, Corporocavernosal chordee as type IV, and congenital short urethra as type I and V, which is a little bit confusion. So, we performed observational study on 32 cases of CWH from Jan 2000- May 2012. We excluded cases of recurrent/residual chordee (referred cases). On the basis of step wise surgical procedure needed for chordee correction, we classified patient into 6 groups (A:Cutaneous chordee→ Skin degloving (2/32); B:Fibrous chordee→ Chordectomy (6/32); C:Corporoceleavernoal chordee→ dorsal placation/dorsal Corporoplasty/ventral lengthening/completa corporal disassembly ± Urethral mobilization (5/32); D:Urethral tethering→ Urethral mobilization ± urethroplasty (16/32); E:Congenital short urethra→ Excision of urethra and urethroplasty (2/32); and F:Complex chordee (Association of fibrous chordee ± corporocavernosal chordee ± Congenital Short Urethra)→ Degloving ± Corporoplasty ± urethroplasty (1/32 patients). Follow up over one to nine years were analyzed.

Results: Mean age at surgery was 5.68 ± 0.19 yrs. There were no intraoperative complications. Postoperatively wound infection rate was 18.75% (6/32). Success rate defined on the basis of uroflowmetry and/or voiding cystourethrography on an average 4 months after surgery. Overall success rate was 75.0% (24/32). Urethra-cutaneous fistula (25.0 % (8/32) was associated with metal stenosis in (3/32), and urethral stricture in 1(1/32) patients. All patients needed revision surgery.

Conclusions: Step-wise surgical approach is the best way to treat hypospadias sine hypospadias, our classification may further help in better understanding and management of this entity. In all types of authors' classification except type A and B, mobilization of urethra should be done to decide whether the curvature is due to urethra or not?

Results of TIPU with interposing spongioplasty
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Purpose: The purpose of our study was to evaluate the results of TIPU with interposing healthy tissue spongioplasty alone and spongioplasty with dartos flap as an additional urethral cover.

Methods: A retrospective study was performed on 80 patients, aged 4 months to 27 years who underwent hypospadias repair using the Snodgrass technique. The patients were assigned to two groups. In Group I (40 patients)
the neourethra was covered with spongioplasty only, and in Group II (40 patients) the neourethra was covered with spongioplasty plus dartos flap. Integrity of urethral plate was maintained in all the cases. Results were analysed in view of complication rates. Mean period of hospital stay & follow up were 8–10 days and up to 1 year respectively.

**Results:** In group I, the meatus were distal penile in 31(77.5%), midpenile in 4 (10%) and proximal/penoscrotal in 5(12.5%) patients. Similarly in group II, the meatus were distal in 17(42.5 %), mid penile in 9 (22.5 %) and proximal/penoscrotal in 14(35 %) patients. Good functional results were achieved in 97.5% patients in group I and in 95% patients in group II. Urethral fistula was encountered in, 2.5% in group I & in 2 cases (5%) in group II. Mild meatal stenosis was noted in 7.5% each in both the groups, which responded to urethral dilatation. One patient in group II had complete disruption.

**Conclusions:** Spongioplasty alone with healthy tissue is strong enough as an interposition layer. The use of dartos flap in addition to spongioplasty did not affect the fistula rate in our study, proving effective waterproofing with spongioplasty alone.

**34 Bladder exstrophy: From nightmares to sweet dreams, our experiences**

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**Purpose:** Adequate capacity of the bladder is essential for the continence and to achieve effective ‘Dry period’. But from our retrospective informations and from the experiences of our ancestors, the natural growth of the exstrophic bladder to achieve adequate capacity is inadequate. So we went on bladder augmentation (BA) ‘as and when seen’ basis.

**Methods:** Since 2003 we have done BA and Bladder Neck Reconstruction (BNR) in 31 patients. Age ranged from Six months to 35 years. BAs were done with ileum (24), with Sigmoid (6) & with Ureter (1). Primary BA were in 17 patients, Delayed primary BA (i.e. bladder closure failed) in seven and Secondary BA (patients came with inadequate capacity & incontinence for 5 years) in seven patients.

**Results:** All 31 patients ultimately got the adequate capacity. In 13 patients, full continence was achieved both in day & night time with dry period of 4-8 hours (four on voiding per urethra & nine on CIC). Partial continence due to disruption of BNR (night time dryness for 4-8 hours with stress incontinence) was seen in 18 patients. Twelve out of 18 are dry on day-time on External compression device.

**Complications:** Two had Total Wound disruption, fourteen had Juxta Neck Fistulas (that disrupts the BNR), two patients had Intestinal fistulas, two had Vesico-urethral stricture, Effacement of BNR in two. Metabolic complication is absent. Main devastating complication is the wound disruption and Juxta-Neck fistulas that disrupted the BNR. Afterwards that problem was managed by various types of rotational flaps after consultations with plastic surgeons.

**Conclusion:** We have gained experiences from the earlier cases and corrected stepwise in the next and ultimately achieved adequate & effective 'Dry period' in 25 out of 31 patients. We advocate primary BA as a solution for that avoidable incontinence.

**35 Yang-Monti’s catheterizable stoma in children**

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**Purpose:** Since Mitrofanoff described a procedure to create a continent urinary stoma for clean intermittent catheterization, several procedures have been described including Yang-Monti ileovesicostomy for effective catheterization. We report on our experience with the use of Monti’s procedure in children at our center.

**Methods:** Children < 18 years of age and undergoing urinary diversion/reconstruction with Yang-Monti’s procedure for congenital conditions or neuropathic bladder formed the study group. All these children post-operatively were taught clean intermittent catheterization (CIC) and put on regime using a 14/16 Fr catheter every 3 hours. The children were followed regularly at 3, 6, 12, 18 and 24months post-operatively, with special attention to any problems with catheterization and incontinence.

**Results:** During the period Jan 2000 to Dec 2012, 23 children less than eighteen years of age underwent urinary diversion
with Yang-Monti’s catheterizable stoma at our center. The indications for urinary diversion was neuropathic bladder in ten, extrophy bladder in seven, valve bladder syndrome in four and persistent urethral stricture in two. None of the children found CIC difficult in the post-operative period or there was any hindrance to passage of the catheter. **Conclusions:** Although the appendix remains the tissue of choice for creation of catheterizable stoma, the Yang-Monti ileovesicostomy is effective, convenient conduit in children. Long term complications are minimal and the children find this comfortable to do CIC.

**36**

**Auto amputation of penis in children: A report of two cases**

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**Objective:** Auto amputation with infection and strangulation has not been reported. We present two cases auto amputation of penis.

**Case 1:** A 10 years old insulin dependent diabetic male child presented with gradual blackening of penis and ketoacidosis after incision and drainage of abscess at penile shaft under penile ring block with xylocaine with adrenaline. Patient was managed for diabetes, debridement and SPC process of gangrene continued; finally whole penis slough out. Perineal urethrostomy was done and patient was advised for penile reconstruction later on.

**Case 2:** A 5 year old child presented with a darkened and congested glans penis since 7 days. The child had occasional nocturnal enuresis. Parents strongly denied having any knowledge of trauma or abuse initially. On further coaxing the child, while away from the parents, he told us that his sister had tied a thread around the glans around two weeks back. The child had no difficulty in micturition and he did not report any pain. The glans penis was completely separated from the shaft of the penis with a clear cut line of demarcation except for a thin chord of tissue in the center. The darkened glans fell off, leaving a stump of penile shaft with a raw area in the center. The child was still voiding with a reasonably good stream.

**Conclusion:** We report the first case of auto-digestion of penis in a diabetic child with penile infection. Ring block in diabetics with infection may leads to a fatal outcome. Control of diabetes, prevention of infection and avoiding local block with adrenaline is advised to prevent such complication. Penile strangulation should be suspected in children presenting with penile injury involving the shaft.

**37**

**Rare infantile renal tumor, congenital mesoblastic nephroma- a study of 2 cases**

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**Purpose:** Congenital Mesoblastic nephroma (CMN) is the most common benign renal tumor occurring in infants and neonates. It can present as abdominal mass or can have varied presentation because of associated hypertension and paraneoplastic syndromes. We present our experience with 2 cases of CMN, study their clinical behavior and discuss review of literature

**Methods:** Two patients of CMN presented between June 2010 and June 2012. Both the patients were < 6 months old and presented with an abdominal mass. One of them of them had hypertension.

**Results:** Nephrectomy was done in both the patients. Both patients are asymptomatic 2 years post-op.

**Conclusion:** When renal tumors occur in infancy or neonatal age group Mesoblastic nephroma should be kept in mind. Association of hypertension and paraneoplastic syndromes should be looked for. Surgery is usually curative and post op follow up for recurrence is required, more so in cellular variety.

**38**

**“Spongioplasty” – a novel technique to prevent fistula in hypospadias repair**

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**Purpose:** Additional coverage after neourethra formation to decrease fistula has been described with dartos, tunica, denuded skin and spongiosum. Use of corpus spongiosum to
cover the neourethra is undervalued. Our objective was to see the results of TIP urethroplasty with spongioplasty alone.

**Methods:** A prospective study of 113 primary hypospadias cases (average age 11.52 years) undergoing TIPU with spongioplasty was undertaken from June 2010 to March 2012. Correction of chordee was done by penile degloving alone in 5, mobilization of urethral plate with spongiosum in 22 and combination of both in 45 cases. Intraoperatively, spongiosum was taken to be poorly developed if thin and fibrous, moderate if good spongiosal tissue with good vascularisation and well developed if healthy robust spongiosum, which became bulkier than native spongiosum. Spongioplasty was done in a single layer after mobilization of spongiosum starting just proximal to native meatus and into the glans distally.

**Results:** Type of hypospadias were distal, mid and proximal in 81, 12 and 20 cases respectively. Spongiosum was poorly developed in 13, moderate in 53 and well developed in 47 cases. Urethral fistulae were seen in six patients (distal 1, mid 1 and proximal 4) with moderate spongiosum (11.3%); three with poorly developed spongiosum (23.03%); one each in distal, mid and proximal with overall 7.96% fistula rate. None of the patients with well developed spongiosum had fistula. Poorer was the spongiosum, greater was the number of complications (p = 0.011). More proximal was the hypospadias, poorer was the development of the spongiosum (p = 0.05). Meatal stenosis was seen in two patients (1.76 %) with proximal hypospadias. More proximal is the hypospadias, greater are the number of complications (p =0.0019).

**Conclusions:** TIPU with spongioplasty reconstructs a near normal urethra with least complications. Better developed and thicker the spongiosum, lesser is the incidence of fistula. We recommend spongioplasty for all patients undergoing TIP repair for hypospadias.

**40**

**Prognostic significance of cord blood plasma renin activity in PUV**

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**Background & aim:** Posterior urethral valve (PUV) is the most common cause of lower urinary tract obstruction in children. As many as 24% - 33% of these children develop renal failure at varying ages. Natural history of PUV is difficult to determine. Currently accepted criteria of renal damage such as GFR, serum creatinine, grade of reflux and scarring detect it only at an advanced stage. The aim of the study was to evaluate the role of PRA as an early prognostic marker in these cases.

**Methods:** Antenatally diagnosed hydronephrosis cases were included in this study and were followed up with serial ultrasounds till delivery. Cord blood was collected at the time of birth for PRA estimation. Valve ablation was done after confirmation of diagnosis on MCU. Children with postnatal diagnosis other than PUV were managed conservatively or surgically as per indication. Follow up included serial USG KUB, Renal Dynamic Scan, GFR, DMSA, MCU, RFT and PRA estimation.

**Results:** Total number of cases was 27: PUV - 10, PUJO - 8, others- 9. Cord blood PRA levels were significantly higher in PUV cases as compared to other causes of hydronephrosis and reduced subsequently after successful valve ablation.