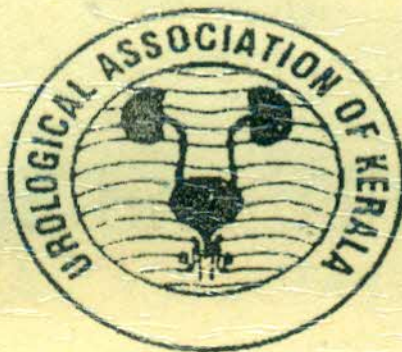


# UROLOGICAL ASSOCIATION OF KERALA



## XIII ANNUAL CONFERENCE

and

CME 99

# SOUVENIR

November 6-7, 1999  
Priyadarsini Planetarium, Thiruvananthapuram.

*With best complements from:*

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and

**NEOPTIC SURGICALS**

# SOUVENIR



## XIII ANNUAL CONFERENCE OF UROLOGICAL ASSOCIATION OF KERALA

Venue: Priyadarsini Planetarium, Thiruvananthapuram.

November 6-7, 1999

Organised by Department of Urology,  
Medical College, Trivandrum.

**UROLOGICAL ASSOCIATION OF KERALA**  
**ANNUAL CONFERENCE 1999 November 6 -7.**

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## EDITORIAL

Dear Colleague,

Welcome to the last conference of the millenium. We have great pleasure in publishing this souvenir as a memento for those who attend this conference. The deliberations and scientific materials presented in the regional conferences form a rich source of information for the budding Urologists and an update of the knowledge for the practicing Urologist.

I hope you will find the scientific papers presented in this volume and the abstracts of the papers definitely useful for following the deliberations of the conference and also for utilising as reference for the future.

I thank the faculty members for giving the papers in time for inclusion in this publication.

I also profusely thank Prof. Y.M. Fazil Marickar and his team for bringing out the publication in record time. I am also indebted to my post-graduate students and colleagues in the Department for all the services rendered in making this publication possible.

Dr. SYAM K RAMESH,  
Organsing Secretary.  
Associate Professor of Urology,  
Medical College Hospital,  
Trivandrum 695 011.

Trivandrum,  
06.11.1999.

**CME & ANNUAL CONFERENCE  
OF UROLOGICAL ASSOCIATION OF KERALA**

**PROGRAMME**

**6<sup>th</sup> November, 1999 (Saturday)**

- |                   |   |
|-------------------|---|
| 8.30 A.M.         | Registration  |
| 9.00 A.M          | Inauguration  |
| 10.00 A.M         | UAK Annual Oration<br><b>Paediatric Urolithiasis – Management</b><br><br>by Prof. Roy Chally  |
| 10.30 A.M         | Tea break   |
| 10.45-11.00 A.M   | Guest lecture –<br><b>“Where has the testis gone?”</b><br><br>by Dr. Venugopal . S,<br>Paediatric Surgeon,<br>S.U.T. Hospital, Trivandrum.                |
| 10.15 – 12.15 P.M | <b>Point - Counter point session</b><br><br>Chair persons: Dr. Abdul Aziz, Dr. Gopinath Menon   |
| 1.                | <b>Ureterocele in duplex system – Reconstructive surgery Vs Endoscopic incision - Kottayam team</b><br><br>Co-ordinator: Dr. Suresh Bhat                  |
| 2.                | <b>Stress urinary incontinence – Open bladder neck suspension Vs Endoscopic/Laposcopic suspension – Calicut Team.</b><br><br>Co-ordinator: Dr. S.P. Rajan |
| 3.                | <b>Intracorporeal lithotripsy – Laser Vs Pneumatic – Trivandrum team</b><br><br>Co-ordinator: Dr. G. Venugopal.   |
| 12.30 - 1.00 P.M  | <b>History of Urology – European condom</b><br>by Dr. Augustine Komaranchath<br><br><b>Chair person - Dr. Y.M. Fazil Marickar</b>                         |
| 1.00 P.M          | Lunch   |

2.00 P.M

**CPC**

Moderators - Dr. Syam K. Ramesh, Dr. Joseph Thomas

Case 1:

Discussant - Dr. Suresh Bhat

Contributor - Dr. Venu Chandran

Case 2:

Discussant - Dr. Darvin Therattil

Contributor - Dr. Appu Thomas.

3 -3.45 P.M.

**Black Pearls**

Chair persons : Dr. Roy Chally, Dr. K.R. Vikraman

Case 1:

Dr. Joseph Thomas

Case 2:

Dr. Joseph Thomas

Case 3:

Dr. Nebu Issac Mamman

4 - 4.30 P.M -

**Guest talk - ICSI**

Speaker: Dr. Ananthanarayanan, Edapal

Chair person: Dr. P.G. Antony

4.30 P.M

General Body - UAK

7.00 P.M.

**BANQUET - GOLF LINKS, TRIVANDRUM**

7<sup>th</sup> November, 1999 (Sunday)

8.30 A.M

**VIDEO SESSION**

Chair persons :

Dr. Joy Jyothis & Dr. N.P. Sasikumar

- I. Retroperitoneoscopy and de roofing of symptomatic peripelvic cyst - Dr. A.S. Albert, Dr. Satheesh Kumar - Kottayam.
- II. Combined laparoscopic ureterolithotomy & PCNL  
Dr. Vijayan, Kochi
- III. Endopyelotomy - Dr. George P. Abraham et al., Kochi

9.00- 9.30 A.M

**Uro Quiz**

Quiz Master - Prof. Appu Thomas

9.45 A.M -

**Guest Lecture - Pre-emptive Renal Transplant**  
**Prof. Padmasree A.P. Pandey, CMC, Vellore**

Chair person

Prof. Ashok Kumar

10.15 A.M

Tea Break

# UAKON 99 SOUVENIR

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## RECENT TRENDS IN MANAGEMENT OF PAEDIATRIC UROLITHIASIS

DR. AV Abdul Azeez, MS; MCh,

In-Charge: Division of Endourology & ESWL, Dr Roy Chally & Associates Urology,  
SCMCCS, Calicut.

### INTRODUCTION

Urolithiasis is a rare disease of the childhood. Most often it is associated with anatomic and/or metabolic abnormalities. Hence the disease tends to be recurrent causing high rate of morbidity apart from being a frequent cause of renal damage in such patients. Endemic urinary calculi especially the lower urinary tract stones continue to be a major health problem in children in nonindustrialized countries, where malnutrition is prevalent. But in other countries, around 66% of the stones in children are seen in the kidneys at the time of diagnosis. Urinary calculi affect children of all ages though it is uncommon below the age of 2 years. Boys and girls are equally affected unlike the marked male preponderance of adult disease.

### PRESENTATION

The symptoms of urolithiasis vary with age of the child. The dramatic presentation of incapacitating flank pain is unusual in children and is seen only in 50%. In infants, pain from urinary calculi may mimic abdominal colic. Haematuria, either microscopic or macroscopic is seen in about 33 to 90% cases. Haematuria may also be seen in children with Hypercalciuria, Hyperoxaluria, and Hyperuricosuria without overt lithiasis. Of the children with haematuria and hypercalciuria, 20% develop stones in 5 years. Urinary infection may complicate stone disease in children, though sterile pyuria is more common. Dysuria and frequency are manifestations of stone in bladder or urethra.

### MANAGEMENT

Most surgically active or infected stones should be removed. Metabolically inactive or indeterminate stones or stones under effective medical management can be observed. It is estimated that at least 50% of the children with stones pass them spontaneously. Indications for surgical intervention are similar to those in adults: intractable pain, persistent renal obstruction leading to renal damage, documented stone growth and those associated with infection.

Until recently, open surgery was the mainstay of treatment in children. But with the advent of less invasive and noninvasive modalities, the need for open surgery has been reduced to 1-2%. As per the current thinking, open surgery should be reserved for situations when the newer techniques are unavailable, or inappropriate or simultaneous surgical correction of anatomical abnormalities is indicated. This is very important, since, in children, urolithiasis tends to be recurrent because of the basic metabolic causes in the majority and a repeat endourological procedure is far more easier than a repeat open surgery. Given below is a reasoned approach to paediatric urolithiasis with modern modalities.

## ENDUROLOGICAL PROCEDURES

Selection of paediatric cases for endourological procedures should be done very carefully. The paediatric urinary tract is very delicate and can be easily traumatised with instrumentation causing devastating complications. Technical feasibility of an endourological procedure in the given case should be assessed without any bias. Unmatching expertise, experience, confidence and dexterity in adult endourological procedures are prerequisites for applying this modality to the children.

## RENAL STONES

Percutaneous stone management in children has become an established technique as monotherapy or as a part of multimodal approach for children with large stone burden. Other indications are: history of previous renal surgery, presence of orthopaedic rods for spinal stabilisation and certain congenital deformities all of which make other procedures difficult though not impossible. The problems in children are the small size and mobility of the kidney, small size of the collecting system and relatively large size of the available instrument with a higher risk of trauma due to instrumentation-

The procedure is done under General anaesthesia and is essentially the same as that in adults. The system can be opacified for radiological puncture by intravenous infusion of the contrast material, instillation of dye through an already introduced ureteral catheter or by thin needle antegrade pyelogram. I prefer to have a retrograde catheter in almost all cases. This, apart from being used for opacification of the system, help to confirm the placement of needle by instillation of saline after puncture. Selection of entry calyx is done very carefully. It should be such that the access to the stone is rather straight and thus avoiding unwanted intrarenal manipulation of the nephroscope to visualise the stone. Such a manoeuvre is likely to cause alarming intra and post operative bleeding.

The procedure may be done in 2 sessions as described in the literature; track creation in 1 stage and stone manipulation later. Advocates of this staged procedure suggest better haemostasis and hence better visibility for manipulation and reduced risk of inadvertent irrigant absorption and intravascular fluid overload. The irrigant should be warmed to body temperature to prevent hypothermia and acidosis.

But in my personal series, all cases were done as a single stage procedure. Fortunately for me all except one case had only solitary stones in the renal pelvis. In this situation, it is only a 'go-see-get it' strategy. Hence the problems of manipulation, visibility and fluid absorption do not arise at all.

Most of the authors prefer to restrict the size of the track to 24F especially when the child is less than 8 years. This makes the availability of a paediatric nephroscope mandatory. In my department, all cases had a track of 30F so that the adult nephroscope could be used. With this, even larger stones could be picked up if one dimension was 1 cm. Most cost effective and safe mode of lithotripsy is Pneumatic/Ballistic (Lithoclast). This should be done in a controlled fashion so that the fragments do not fly away making the retrieval difficult. Other preferred mode of fragmentation in children is Laser. With flexible scopes if available, laser is very handy in cases of multiple stones, especially when they are scattered in different calyces. But the high cost prohibits it routine use. Ultrasound is a good

alternative, but is not as efficient. Electrohydraulic lithotripsy is better avoided in children because of the higher risk of collecting system injury.

Let me explain why I prefer the use of adult instruments in paediatric setting. In literature, dilatation upto 24 has been considered safe in children. Hence I had reasons to think that an increase in the track diameter by another 2-3 mm is not going to cause much additional trauma, if the initial puncture track goes through the relatively avascular lateral plane. This philosophy was found to be correct in a series of around 20 cases. The advantages of adult sized instruments were:

- # Pick up of the stone was possible in majority of cases
- # Avoidance of long operating times and its complications
- # Minimum intra renal manipulation to retrieve the stone/bits

As said earlier, the case selection is very important for paediatric PCNL. The safety of establishing multiple tracks in this age group is not well established. Hence cases of multiple stone scattered in different calyces are better dealt with flexible nephroscope through a single most strategically placed access.

After the procedure, the kidney is drained by a nephrostomy tube placed in the renal pelvis without causing undue pressure on its medial wall. A plain X-ray KLTB is taken on the 3d day to assess the completeness of destoning. If needed additional endourological procedures or irrigation with calculolytic solutions can be undertaken through the same track. A nephrostogram confirms the collecting system integrity and distal ureteral patency. But in most of the cases it is not needed. Clamping of the nephrostomy tube for a few hours ensures proper distal drainage and it can be removed. Post operative culture specific antibacterials are given as indicated.

Bleeding requiring transfusion and sepsis represent major complications after PCNL in children. But this can be minimised by adhering to the principles detailed earlier. In my personal series, no case needed transfusion, though in one case, two tracks were made at intervals. Other major complications like pneumothorax, pulmonary edema, visceral injury and mortality are not reported in paediatric PCNLs. Most of the patients have mild elevation of the temperature in the postoperative period. This settles by itself and is most often non-infective. Average hospital stay is 4-5 days.

## URETERAL STONES

Stones in the upper ureter with dilated system can be managed percutaneously as for renal stones. Instead of nephroscope, a short ureteroscope can be passed through the nephrostomy track to the ureter and stones can be either grasped/basketed or fragmented with lithotripsy. I prefer to leave a stent in all these cases so that a smooth postoperative period is assured.

Indications for transurethral procedures in children for ureteral stones are the same as in adults. In males, the small size of the urethra is a limiting factor. Gentleness is the key to success. The female urethra is more distensible and permits the use of adult sized instruments without much difficulty. Particular care should be taken in both sexes to avoid urethral injury.

Distal ureteral stones can be basketted out using paediatric panendoscope and various baskets under fluoroscopy control. Though successful stone retrieval has been reported with this method, I personally think that such situations are rather rare. It will be hard to believe that any stone more than 2 mm size caught in the basket can negotiate the undilated vesicoureteral junction and ureteral orifice in a child. So if at all this modality is tried, it is better done after dilatation of the orifice and VUJ.

Ureteroscopy in children is now a standard procedure with the advent of miniscopes or 'viewing catheters'. The thinnest one available is 6 F. While doing ureteroscopy in children, special attention should be paid to the permanent damage that can occur to the vesicoureteral junction consequent to dilatation. The exact incidence of reflux and stricture is not known after the procedure. Hence the aim should be to dilate the ureter just sufficient to accommodate the thinnest scope available.

For dilatation, a 0.035" or 0.038" guide wire is passed to ureter with a paediatric cystoscope. If the same is not available, a short ureteroscope can be used for this. Under radiology control 5, 6 and 8 F dilators are passed over the guide wire. A 7F ureteroscope can now be passed easily and the stone visualised. Once the stone is seen, it can be removed by baskets or grasping forces. But here also, unless the stone is very small in size, the negotiation of the vesicoureteral junction is difficult and complications of basketing can be disastrous. Hence my preferred way of dealing with ureteral stones in children is fragmenting them with Lithoelast. The fragments are made as small as possible. The size of the lithoclast probe is the reference. No attempt is better made to remove the fragments, as our aim to minimise the ureteral manipulations. All ureters are stented with a 5 F stent and the bladder drained for a day. Unlike adults, problems of intolerance and other morbidity related to the stent were strikingly not seen in children. As in renal stones, electrohydraulic lithotripsy is to be avoided in ureter also. Laser is an alternative. Because of the larger size of the ultrasound probe, its use in paediatric age is very limited. Use of flexible ureteroscopes has been reported in literature. But I do not think there is any advantage for using it. They are bigger in size, difficult to manipulate and has only small working channel.

## **BLADDER STONES**

As said earlier, the incidence is less especially in industrialised countries. Popularity of urinary diversion, bladder augmentation and continent urinary reservoirs has contributed to higher incidence in recent years. The incidence in these situations can be upto 50%

For bladder stones, percutaneous and transurethral procedures are described. Because of the delicate nature of the paediatric urethra, with its potential to get damaged easily with instrumentation, I do not think there is any place for this modality in the male child except in very small stones of 3 mm or less. As said earlier, in female children, larger instruments can be passed and bigger stones treated.

From the available literature and personal experience, it can be said that percutaneous cystolithotripsy is the safe and effective endourological procedure for bladder stones upto moderate sizes. History of previous lower abdominal surgery and open bladder surgery has been described as relative contraindications. But I do not consider them so if you are careful. Only contraindication will be a scarred fibrotic bladder that can not be distended enough for a safe puncture. Of course, very large stones are better removed by open surgery considering the time needed to fragment and evacuate them.

The bladder is distended enough to make it rather visible. It is then punctured with an initial puncture needle used for PCNL and a guide wire passed. Over this guide wire, Alkan metal dilatation cannula is passed and through its sheath, an SF ureteral catheter is introduced to the bladder. Over this 30F Teflon dilator is passed with the Amplatz sheath. Now the track is ready. Rest of the procedure is like that of PCNL. The bladder is drained with a suprapubic catheter and a urethral tube. The SPC is removed the next day and the urethral tube after 72 hours. In my department, only one had procedure related problems. This boy had prolonged track bleeding and had to be taken in again for coagulation of the bleeding points with Resectoscope set. On detailed enquiry this boy of 8 years had prolonged bleeding after ritual circumcision.

## URETHRAL STONES

Most of the cases present with urinary retention and may need trocar cystostomy or needle aspiration as the initial management. Definitive management depends on the site and size of the stone. Literature favours open surgical procedures in children. External meatotomy will be sufficient for stones impacted in fossa navicularis. Others need open urethrotomy and one stage urethroplasty if stricture formation is anticipated. Attempts at manual milking of the stone distally are not advised because the delicate urethral tissue can be damaged predisposing to urethral stricture later. Though endoscopic destruction of the stone is considered to be unwise in the literature, I think, selected cases can undergo Lithoclast fragmentation as that of ureteral stones.

## ESWL

With present day versions of machines, ESWL has become the treatment of choice for more than 80% of symptomatic upper urinary stones in children. Initially the unsettled issues were the shock wave voltage, number of shocks and the effect of the same on developing kidneys. Other issues were the concern about radiation exposure, potential for late complications, alterations in renal growth and function; and alterations in linear growth due to damage to epiphyses growth centres. But studies by Kroovand et al documented not only the effectiveness of ESWL in the treatment of urinary stones without posttreatment complications, but also that the radiation exposure was minimal and comparable with routine diagnostic radiography.

Small stature and orthopaedic deformity are relative contraindications for ESWL. Others include bleeding diathesis, oliguric renal failure, distal urinary tract obstruction or the potential inability to manage the possible Steinstrasse.

Stone composition also has to be taken into account when selecting cases for ESWL. Calcium oxalate dihydrate and Uric acid stones are most responsive. Calcium oxalate monohydrate, Struvite and Brushite are more difficult. Cystine stones are resistant to ESWL.

Latest generation machines have made the positioning easy doing away with water baths. They also use ultrasound for stone localisation so that radiation exposure to the child is minimised/avoided. But because of a smaller focal point, they generally provide less complete stone fragmentation per treatment with raise in retreatment rate.

Though children are supposed to handle stone fragments well and do not need routine stenting after ESWL, large stone burden is better debulked initially with PCNL. Since the

fragmentation rate and the ease of treatment are better in renal pelvis, those of the upper ureter are manipulated up before ESWL.

No intra or postoperative mortality has been reported after ESWL in children. Post treatment morbidity also is minimal. Children with myelodysplasia and orthopaedic abnormality may have haemoptysis. Shielding of lung fields can prevent this. Skin bruising at the shock wave entry is seen in majority. Post ESWL urosepsis should be anticipated in infected stones and culture specific antibacterials started before and continued after treatment. Subcapsular and intrarenal haemorrhage do happen in children but the incidence is less than that of adults. Thomas et al has suggested no statistically significant long-term effect on renal function and growth after ESWL in children.

Present day machines give 70 to 98% stone free rates with renal and 68-100% with ureteral stones. Retreatment rate is between 10-50% cases. Secondary procedures are needed in 2-12% of renal stones and 4-6% of ureteral stones. In a study, Carr et al demonstrated an unacceptable rate of 22% new stone formation after ESWL when compared to PCNL, which had only 4.2% at 1 year. Though many pitfalls have been pointed out in this study, it is a matter of concern.

To sum up, refinements of techniques and technological advances in the field of optics, electronics and imaging has made it possible to treat majority of cases of stones in children without open surgery. Since the incidence of urolithiasis in children is low (only about 1% of total stone cases undergoing surgical intervention), setting up of a paediatric endourology department is not cost effective. But our experience has shown that, no special paediatric instrument is needed to deal with these cases and no additional complications can be attributed to the use of 'adult armamentarium' in children. What you have to invest extra is only extra care and gentleness.

## WHERE HAS THE TESTIS GONE?

Dr. S. Venugopal, Sree Uthradam Thirunal Hospital, Trivandrum

### INTRODUCTION

Descent of the testis into scrotal sac outside the abdominal cavity, one of the advances achieved in the evolution of mammals from the earlier forms of development, is a complex multi-stage process. In humans, who occupy the apex of the evolutionary pyramid, the testis develops from the genital ridge between 8<sup>th</sup> and 11<sup>th</sup> weeks of gestation and remains near the internal ring till the 28<sup>th</sup> week of gestation. After descending through the inguinal canal, it reaches its permanent residence in the scrotum by 35<sup>th</sup> week of gestation. The humoral agents such as androgens, Mullerian inhibiting substance (MIS), Genitofemoral nerve and its release of Calcitonin Gene Related Peptide (CGRP) as well as increase in intra-abdominal pressure are some of the recognised factors aiding this testicular descent.

The scrotum, due to its pigmentation, absence of subcutaneous fat, wrinkled surface due to dartos muscles and pampiniform plexus, provides a specialised low temperature environment (33°C compared to the intra abdominal temperature of 37°C) for the testis and the epididymis which is optimal for its physiological development and function. In addition, the mobility and ability to retract due to the cremasteric reflex provides a safeguard against trauma. Hence permanent location of the testis outside scrotum not only impairs development and functional efficiency but also exposes it to greater risk of trauma.

Absence of the testis from the scrotum creates considerable anxiety to the parents and psychological stress to the patients. However, the emptiness of the scrotum can be due to causes other than failure or aberration in the descent of the testis. Hence a careful evaluation is essential to establish the correct diagnosis and provide appropriate management.

### THE CAUSES OF EMPTY SCROTUM

- Retractable testis
- Ascending testis
- Maldescent of the testis
  - arrest in the line of descent (Undescended testis)
  - arrest away from the line of descent (Ectopic testis)
- Iatrogenic high testis
- Atrophic testis / vanishing testis
- Agencies of the testis

#### Retractable testis

A retractile testis is descended testis, which is normally resident in the scrotum but gets transiently pulled up in to the superficial inguinal pouch due to cremasteric muscle contraction.

The cremasteric reflex, produced by stimulation of the genitofemoral nerve, is most pronounced during childhood. As androgen levels rise with the advent of puberty this reflex becomes less active, thus retractile testis is most common in the pre-pubertal boys.

The diagnosis is established by milking the testis down into the bottom of the scrotum without tension. This manipulation is facilitated by examining the child in the squatting position.

Although it is felt that a retractile testis is a normal one with no need for any therapy, the recent reports of a subgroup of patients where the testis tends to ascend up due to inadequate lengthening of the cord with growth, as well as demonstration of degenerative changes, similar to those seen in an undescended testis, in retractile testes, underlines the need to follow up these children well into puberty to ensure that the testis continues to retain its normal residence.

### **Ascending testis**

Testis appear to ascend out of the scrotum after a normal descent, due to failure of the spermatic cord to elongate in proportion with body growth with increasing age. Many of these children had a delayed descent of the testis into the scrotum within the first three months after birth. This is specially common in children with cerebral palsy. Spasticity of the cremasteric muscle as well as persistence of the processus vaginalis which inhibits the elongation of the vas and vessels have been incriminated.

In this group of patients successful orchidopexy may be possible through a scrotal approach.

### **Maldescent of the testis**

#### **Undescended testis (testis arrested in the line of normal descent)**

An undescended testis (UDT) may be located above the internal ring (intra-abdominal), in the inguinal canal (canalicular) or at or just outside the external ring (emergent). The end-organ non-responsiveness to the normal hormonal milieu or hormonal deficiencies, failure of genitofemoral nerve function, inadequate intra-abdominal pressure, mechanical obstructions along the path of descent, mesodermal defects and external compression on the scrotum are possible aetiological factors. In unilateral UDT, poor inherent quality of the testis along with its unresponsiveness to the normal hormonal environment (as evidenced by the descent of the contralateral side) is the most likely cause. This tissue abnormality will also explain the associated reduced fertility and increased risk of neoplasia in the UDT.

The association of UDT with anterior abdominal wall defects, including Prune Belly syndrome and arthrogyposis are probably due to absence of normal intra-abdominal pressure. Association with neural tube defects may be through the malfunction of genitofemoral nerve as well as the abdominal wall. Its association with other syndromes such as Prader Willy, Down, Noonan, Klinefelter, Kallman and Smith Lemb Opitz are well recognized.

The UDT is associated with patent processus vaginalis and short spermatic vessels. The vas deferens is usually of adequate length. Separation of the body of the epididymis from the testis is frequently seen, especially in the testes located at higher levels. Whether this is the cause of the abnormal descent or whether it is due to decreased androgen production in-utero is a

matter of speculation. Associated abnormalities of the vas deferens are also seen. Of special significance is the recurvant vas, where a long loop of vas deferens can descend distal to the testis and may even reach the scrotum. Mullerian derivatives may persist along the cord when there is associated abnormality of the MIS.

### **Ectopic Testis (Testis arrested away from the normal line of descent)**

Once the testis emerges well beyond the external ring, and then fails to descend into the scrotum, it can be considered as an ectopic testes. The common locations of ectopic testes are - *superficial inguinal pouch, femoral, pubic and perineal*. Unlike the UDT, an ectopic testis is likely to be a better quality testis which is capable of responding to mechanisms of descent. The ectopic position is the result of malfunction of the mechanical factors guiding the path of descent.

As a result of the descent, the vessels as well as the vas would have acquired a good length, allowing a comfortable orchidopexy with good results. Processus vaginalis is usually not patent.

An unusual variant of ectopic testis is transverse, or crossed ectopy where the testis goes into the contralateral scrotum.

### **INCIDENCE**

In his classical study, Scorer found that the incidence of UDT was 4.3% in infants which fell down to 0.96 % by one year of age. The John Radewe Hospital Cryptorchidism Study has shown that post - natal descent is likely to occur in the first three months.

As to be expected, the incidence of UDT is significantly higher in the preterm infants. With a birth weight of less than 1500 g. the incidence of empty scrotum is as high as 60% to 70%. But by the time they reach 12 weeks post-expected date, the incidence falls to normal levels.

### **CLINICAL IMPLICATIONS OF UNDESCENDED TESTIS**

Germ cell deficiency seen in cryptorchidism may be congenital. However there is considerable evidence to support the view that these changes are postnatal and progressive, starting as early as few months of age. Transformation of gonocytes to spermatogonia, an early step in germ cell development, is deficient in cryptorchidism.

The germ cell deficiency along with the deleterious effect of the exposure to higher temperature outside the scrotum on the testis and compounded by the possible. In bilateral undescended testes fertility is significantly impaired. However in unilateral UDT paternity rates are not deficient. The current data reflect the results of late orchidopexies since the age of election for surgery was late in the past. The possible benefit from earlier intervention is yet to be documented.

### **Endocrine effects**

Plasma gonadotrophins, testosterone levels and Luteinising Hormone levels have been shown to be lower in cryptorchid infants. But whether this is primary or secondary to non-descend is unclear. The normal post-natal elevation of MIS also appears to be inhibited.

### **Malignancy**

The progressive degeneration of the germ cells and associated dysplasia are related to the increased risk of malignancy in UDT. The risk is highest with intra-abdominal testes, dysplasia and late orchidopexy. The detection of Carcinoma -in-situ in UDT has added support to the view that it is the intrinsic abnormality that is most important.

The risk is calculated to be 35 to 50 times greater than normal. However with revised calculations, the risk is projected as fifteen fold for unilateral cases and unlikely to alter the risk of malignancy due to inherent dysplasia. However by making the testis accessible, occult neoplasia and late detection can be averted. Whether early orchidopexy, by reducing progressive degenerative changes, will reduce the risk of neoplasia is yet to be established.

### **Torsion**

The increased mobility of the testis predisposes to torsion.<sup>23</sup> With earlier orchidopexies the incidence of torsion is coming down.

### **Trauma**

In the inguinal location without the protective cremasteric reflex, the testis has a greater risk of trauma.

### **Testicular-epididymal fusion defects:**

Abnormalities in the connection between the epididymis and the testis is common in UDT, which is related to androgen deficiency in-utero. The higher the level of the testis the greater the degree of fusion anomalies.

### **Inguinal hernia.**

Patency of the processus vaginalis is associated with UDT, although not all become manifest clinically. When symptomatic, the hernia needs immediate surgical intervention and orchidopexy is performed in the same sitting.

### **Psychological factors**

The obvious abnormality of the genitalia causes considerable psychological stress in addition to the anxiety regarding fertility.

### **Gender Ambiguity**

When associated with hypospadias, especially in bilateral UDT, the possibility of ambiguous genitalia should be considered and gender ascertained by appropriate investigations. Gender assignment is a neonatal emergency and should be done expeditiously.

### **DIAGNOSIS**

A careful physical examination in a congenial environment with warm hands, with attention to the possible ectopic sites is the first step to diagnosis. The size and development of the scrotum will give a clue as to whether the testis has occupied it. The inguinal canal needs to be milked out to make an intra-canalicular testis palpable. The ability to bring the testis down into the scrotum is best assessed in the squatting position. The maldescent can be unilateral or bilateral and when unilateral right side is more common.

Imaging is required when the testis is not palpable. An Ultrasound is the most non-invasive step. Other methods of imaging such as Gadolinium enhanced Magnetic Resonance Angiography<sup>26</sup> allows more precise pre-operative localization of testis, allowing better planning of surgical approach. These imaging modalities have outdated other diagnostic tests such as testicular venography, CT and isotope scans. If the testis is impalpable and not visualized in the inguinal canal by imaging the most valuable diagnostic cum therapeutic intervention will be laparoscopy.

### **MANAGEMENT**

#### **Hormone Therapy**

The basis for hormonal therapy in UDT is the possible underlying deficiency of the hypothalamic pituitary-gonadal axis. Hence its application is more logical and success more likely, in bilateral UDT. It is most likely to benefit 'Ascending testis' and persistent retractile testis. Even when such therapy fails in achieving complete descent partial descent which facilitate subsequent orchidopexy is beneficial.

Human Chorionic Gonadotrophin (HCG) and Luteinising Hormone Releasing Hormone (LHRH) are the two useful agents. Direct use of testosterone is unacceptable due to the side effects, especially precocious puberty. HCG is usually given at 100 IU /kg given intramuscularly twice a week for 3 - 4 weeks. LHRH can be administered as a nasal spray at 1 00 micro. in each nostril six times a day for 3-4weeks.

Although success rates as high as 50% have been reported, in true UDT only less than 20% success can be expected. Hormone therapy has the lowest response rate in impalpable testes. Comparative studies have shown that LHRH therapy gives better results than HCG.

However other studies have shown that the response to LHRH is not significantly different from placebo.

### **Surgical management**

Orchidopexy by providing permanent residence for the testis in the scrotum, is the gold standard for the management of maldescent of the testis. Whereas the need for surgery universally accepted, the optimum timing is still evolving. The demonstration of progressive degenerative changes in the UDT from as early as few months of age makes a case for early orchidopexy. If there is an associated symptomatic hernia, irrespective of the age, herniotomy need to be done without waiting and orchidopexy will be done at the same time. In this situation successful orchidopexy has been practiced even in young infants. The recent finding that post-natal spontaneous descent is completed by 3<sup>rd</sup> month of life, as against the earlier concept that spontaneous descent may continue until the age of 1 year further justifies earlier orchidopexy.

At present the optimum age for surgical exploration and orchidopexy is in the first year of life. It should not, be delayed till the age of 5 years or puberty as practiced in the earlier years.

The success of orchidopexy is very much dependent on the inherent quality of the tissues especially the length of the spermatic cord. The fixation of testis in the scrotum may be done by placing it in an extra-dartos pouch, by fixing it to the median septum across the scrotum, placing it in the contralateral scrotum across the median septum, using a temporary pocket in the medial aspect of thigh and later placement in the scrotum or by anchoring sutures which are fixed externally for a brief period. The actual technique of fixing the testis in the scrotum is not as important as achieving adequate length of the cord structures, which will permit a tension free positioning of the testis in the scrotum. The cord can only be lengthened by making the testicular vessels run a straight course, from its origin to the scrotum by extensive mobilization, severing all adventitious connections and re routing it medial to the inferior epigastric vessels. In an ectopic testis the length of the cord is usually sufficient and hence the surgical results are better. The higher the location of an UDT, the greater this problem. In those testes located above the level of the internal ring even after extensive dissection as well as repositioning the length of the testicular vessels is likely to remain insufficient. The vas deferens is never a restraint. In such situations the following options are available .

\* The testis may be anchored to the distal most point it can reach comfortably as the first stage and a re-exploration for additional mobilization attempted 6 to 12 months later. Success rate of 70% to 90% have been reported for this two-stage orchidopexy.<sup>33</sup>

\* Fowler -Stephens procedure depends on the collateral blood supply to the testis from artery to the vas and cremasteric vessels so that the testicular vessels can be divided and the testis swung down on the vas deferens. The success of this procedure can be enhanced by improving the collateral supply by initial ligation of the vessels without any dissection of the cord as the first step followed by mobilization of the testis and cord 3 to 6 months later, with due care to preserve all the potential collateral sources. Such two stage Fowler -Stephens is best performed with the aid of laparoscopy. Laparoscopy not only helps to locate the testis but also permits ligation of the testicular vessels without disturbing the inguinal canal. This approach achieves

70% to 90% success compared to the 50% chance of testicular survival in one stage Fowler - Stephens<sup>28,29,34</sup>

\*If there is enough expertise and back-up of resources, microvascular transplantation of the short testicular vessels to the inferior epigastric vessels, will allow the testis to reach the scrotum. However the additional cost and stress does not result in significant improvement in outcome compared to simpler steps such as Fowler - Stephens technique, to justify its routine use.

\* If the testis is dysplastic or hypoplastic and the age is close to puberty then the safest step will be an orchidectomy, in view of the untimely functional benefits and risk of neoplasia.

## RESULTS

The success of orchidopexy is dependent on the type of maldescent and the length of the testicular vessels. Hence a better outcome can be expected in an ectopic testis, compared to. an UDT.

Orchidopexy prevents the problems of trauma, torsion and psychological stress associated with UDT. However its benefit in improving fertility and reducing the incidence of malignancy remains questionable, if the surgery is performed in later childhood. The trend of doing orchidopexy earlier (1 year of age) is a more recent development and only longer follow-up will show us whether this strategy will improve the results.

## MISCELLANEOUS CONDITIONS

### Iatrogenic high testis (Trapped testis)

This is an uncommon and under-recognized complication following surgical correction of hernia. An incidence of 0.2% has been documented<sup>35</sup>. This abnormality occurs either because the testis was not replaced in the scrotum at the end of hernia surgery or because it subsequently retracted. Formal orchidopexy is needed for its connection.

### Atrophic/ Vanishing testis

Testicular atrophy can occur due to vascular impairment, caused by torsion of the spermatic cord, incarcerated inguinal hernia or iatrogenic injury to the testicular vessels, infections such as mumps or trauma. Examination may reveal a well developed scrotum with atrophic remnants of the testis/epididymis or cord.

Ante-natal vascular insult such as intrauterine torsion of the spermatic cord can result in vanishing testis. Surgical exploration will reveal that the vas and vessels ending blindly. The opposite testis is likely to show compensatory hypertrophy.<sup>36,37,38</sup>

**Agenesis of the testis**

True agenesis of the testis is a rare abnormality and is often associated with malformations of the urinary tract. Often vanishing testis is included under agenesis, resulting in a false higher incidence. An incidence of 0.04% has been estimated<sup>1</sup>. Unilateral agenesis should only be entertained after exclusion of all other possibilities by an exhaustive search, including surgical exploration.

**Overview**

The many causes for absence of testis in the scrotum needs to be considered when one encounters an empty scrotum. A thorough search for a hidden testis must be made and should either be brought down into scrotum or removed. The following management scheme may give us an opportunity to offer optimum care.

## ROLE OF SONOGRAPHY IN RENAL TRANSPLANT DYSFUNCTION

Dr. N. Roy MD. DNB.

Assistant Professor, Department of Radio diagnosis,  
Medical College, Trivandrum.

### INTRODUCTION

Duplex ultrasound is the most important investigation in the evaluation of renal transplant. Role of ultrasound starts with the evaluation of the donor kidney. The main limitation of Doppler in evaluating the donor kidney lies with the inability to pick up accessory renal arteries. Hence angiographic evaluation of the renal arteries is also needed. Evaluation of ureter is also not adequate with ultrasound. The recipient can be evaluated to assess the iliac arteries and veins. Doppler gives adequate information in the majority of cases.

### THE ULTRASONOGRAM

The normal transplant kidney is evaluated with a **High Frequency Transducer** (5 to 7.5 Mhz). Cortico medullary differentiation is better defined in the transplant kidney than in the native kidney. Minimal fluid in the pelvis or mild separation of calyces is a normal finding in the transplant kidney.

Evaluation of the renal transplant starts with a base line scan performed at 24-48 hours using sterile technique that is with transducer cover and sterile gel. Repeat scan is usually performed in 5 to 7 days and there after follow up scans are done as clinically indicated.

Perioperative **Colour and Spectral Doppler Sonography** and 15 minute post operative scans are also useful in early detection of insufficient graft perfusion and allowing early surgical correction to be done. Resistivity index more than 0.9 can be considered pathological.

Renal grafts are currently assessed by surgeon's observation of organ microcirculation, that is by the appearance of the graft. **Laser Doppler Flowmetry (LDF)** has been suggested as a useful technique for monitoring effectiveness of grafts.

**Power Doppler Sonography** is used to assess the cortical vessel density and can be classified as normal or decreased. This may have a role in the predicting the outcome and correlation was found in a study.

**Power Doppler Imaging** can be used to calculate blood flow area ratio (BFAR) defined as the percentage of the area of colour pixels within a given cross sectional area, The mean BFAR in the normal is 0.68 and is higher than in the complication groups with acute rejection (0.43) and acute tubular necrosis (0.43). Transplant kidneys have a higher intra renal RI (0.67) and PI (1.23) as detected in the interlobar arteries compared to the normal average values of 0.57 and 0.91 respectively.

## COMPLICATIONS OF RENAL TRANSPLANTS

The most common surgical complications are obstruction, fluid collection and vascular compromise. Medical complications include rejection, drug toxicity and ATN

Obstructive renal disease can be easily identified with ultrasound. Presence of caliectasis necessitates further investigation in the form of antegrade pyelography or MR urography. Breakdown of ureter, uretero neocystosomy or the renal pelvis produces a peritransplant urinoma which can be easily detected. Urinomas most commonly develop in the first or second week after transplantation.

The most common peritransplant fluid collection is the lymphocele which is usually localised medial to the transplant and shows thin septations. Lymphoceles are usually noted 2 to 4 months after transplantation.

Vascular complications include renal artery occlusion, renal vein thrombosis, arteriovenous fistula and renal artery stenosis. Renal artery occlusion is easily diagnosed by absence of flow in the main renal artery as well as in the branches. Rarely it may be an associated finding of severe irreversible acute rejection associated with extensive intravascular thrombosis. Renal vein thrombosis is detected by the absence of flow in the renal vein both in spectral and colour flow Doppler. The renal artery shows increased pulsatility index. Transplant Renal artery stenosis (TRAS) usually occurs at the site of anastomosis. Doppler sonogram demonstrates damping of systolic flow proximal to the lesion, marked increase in blood flow velocities across the stenosis both in systole and diastole and with reduction in systolic flow velocities down stream. Kinked renal artery stenosis is a cause of early graft dysfunction which is better identified with Doppler than with arteriography.

Angiography, complimented by carbon di-oxide angiography, still is the gold standard with diagnosis of transplant renal artery stenosis. M.R angiography being a non invasive investigation may replace angiography.

Renal artery stenosis usually occurs month to years after transplantation. Two types of renal artery stenosis occurs, one is a short segment stenosis which occurs at the site anastomosis and the other is a long segment stenosis from the site of anastomosis to the origin of the first branch to the allograft kidney.

Ischaemic damage to the kidney (ATN) presents as primary non functioning with improvement over a period of few days to one month and is secondary to ischaemic insult. Sonologically there is a transient enlargement of the transplant and a transient increase in resistive index.

Rejection of Renal transplant can be:

- a. Hyper acute rejection which occurs within minutes after renal transplantation and Doppler shows complete absence of renal perfusion. These case require immediate reoperation.
- b. Accelerated acute rejection which occurs 2-5 days after transplantation.
- c. Acute rejection occurs within 5 days to 6 months, the usual period of occurrence is 2<sup>nd</sup> to 5<sup>th</sup> week. Sonologically there is transplant swelling and decreased renal sinus fat and increased cortical thickness. Doppler shows an initial decrease in resistive index. With increasing severity R.I increases and R.I more than 0.9 has a 100% positive predictive value. Powerflow Doppler imaging shows vascular pruning in the cortex and medulla, but is not specific.
- d. With chronic rejection the kidney is small and there is decreased number of intra renal vesels with vascular pruning or stenosis or occlusion. Percentage of vessel covered renal parenchyma (POV) is reduced (less than 55%) in chronic rejection.

Cyclosporin toxicity produces no change in renal size and the resistance index and can thus be distinguished from acute rejection. Evaluation of the distance from the most peripherally located vessel to the renal capsule (PVD) may show increased value (more than 3.9mm).

Thus evaluation with colour and power doppler sonography nay help in differentiation of acute rejection, chronic rejection and cyclosporintoxicity.

## CONCLUSION

In conclusion, duplex sonography and powerflow imaging are important investigations for assessing the renal transplant for early and accurate detection of complications enabling prompt and correct treatment.

*With best complements from:*

**DEVON**

## ABSTRACTS OF PAPERS FOR PRESENTATION

1.

### RENAL CELL CARCINOMA-ROLE OF INTERFERONS

**H. Krishna Moorthy, Viju George, Sanal Varghese, John Abraham and George P. Abraham.**  
**Lourdes Hospital and Medical Trust Hospital, Cochin, S.India.**

The aim of the study was to evaluate the response rate of advanced renal cell carcinoma to treatment with 5fu and IFN alpha. 22 Patients with renal cell carcinoma beyond stage A were studied for the response of this adjunctive therapy over the last 3 years. The inclusion criteria were histologically proved RCC beyond stage A and primary tumour resectable. The exclusion criteria were age below 18 yrs and over 75 years, poor cardiovascular / renal / hepatic / CNS status, prior chemo / immuno / hormonal therapy and patients with second primary tumour. The dosage schedule was Intron alpha 2b 3MIU s/c + 5fu 540mg/m<sup>2</sup>/V-Day 1-5 followed by Intron 3MIU s/c TIW x3 weeks. The cycle was repeated for 3-6 months. The follow up protocol included blood count and chemistry every month, USS, CxR every 3 months, CT every 6 months and Bone scan every year.

Excellent results (either PR or CR) were observed in 20 out of 22 patients (91%) in our group. No regional or distant metastasis was seen in 8 patients with tumour beyond the renal capsule. Stable disease with no progression was observed in 7 patients who had regional positive lymph nodes, on an average of 1.5 years of follow up. 5 patients with IVC thrombi had no recurrence of disease an 3 years of follow up. One patient with IVC infiltration died after 4 months of treatment while another patient with brain metastasis also died after 2.5 month of treatment. The major side effects of the schedule included high grade fever immediately following injection, nausea, vomiting and tiredness. These were countered by prior injection of steroid / paracetamol. No serious long term side effects were noted.

It is concluded that 5FU with IFM alpha 2b is an excellent adjunctive therapy for advanced RCC. Locoregional recurrence of disease is arrested and metastasis delayed / prevented though regression of tumour positive lymph nodes is doubtful. The efficacy of treatment has also not been proved in brain metastasis, in our limited experience.

2.

### RENAL TRANSPLANTATION - OUR EXPERIENCE

**Dr.K. Mahesh, Dr.G. Venugopal, Dr.Syam K. Ramesh**  
**Department of Urology, Medical College, Trivandrum**

Since renal transplantation was started last year in our institution, 13 cases have been done till now. In spite of being in the infancy stage of the programme, the results achieved were excellent with negligible morbidity and mortality. The operative technique adopted, the intraoperative and post operative complications faced and their management and also the follow up results of these cases will be presented. The aim of presenting this paper is to promote a discussion regarding various aspects of renal transplantation like variations in surgical technique, need for routine ureteic stenting, need for imaging modalities like helical CT angiogram for detection of

abnormal renal vasculature and role of estimation of resistive index by Doppler USS in cases of graft dysfunction, so that the opinion of more experienced transplant surgeons on these points can be put to practice for better results in future.

3.

### **PERCUTANEOUS CYSTOLITHOTRITY**

**Dr. John Abraham, Dr. Sanal Varghese, Dr. George P. Abraham MS Mch.  
Department of Urology, Medical Trust Hospital, Ernakulam.**

A minimally invasive procedure for bladder stone removal is presented. Urinary Bladder calculi are very common in urologic practice. Large bladder stones can be removed by a variety of techniques including transurethral cystolithotripsy, litholapaxy, and open cystolithotripsy. We are presenting our experience in percutaneous removal of bladder stones, especially in children and in conditions where transurethral access to the bladder is not possible.

4.

### **PENILE PROSTHESIS IMPLANT - 12 CASES**

**Dr. John Abraham MS, Dr. Sanal Varghese MS and Dr. George P. Abraham MS MCh.  
Department of Urology, Medical Trust Hospital, Ernakulam.**

Penile prosthesis implant has become an acceptable therapeutic option for the treatment of erectile dysfunction due to various causes. We are presenting our experience in the management of erectile dysfunction using semirigid malleable penile prosthesis -12 cases - 10 of whom had a Shah prosthesis and 2-AMS 600 prosthesis. These patients were evaluated over a period of 5 years. This study highlights the work up of the patient, the surgical technique employed and the post operative complications and follow-up.

5.

### **OUR EXPERIENCE WITH PCNL IN 1ST 100 CASES**

**Dr. Satish Kumar, Dr.A.S.Albert, Bharth Hospital, Kottayam.**

Of the 100 cases studied in a period of July 97 to July 99 of age groups between 21 to 70 years of 5 were staghorns, 10 were multiple calculi and 85 were single calculi too large for ESWL and there were 12 ESWC failed cases. Intercostal, supracostal and even multiple punctures were needed in certain cases. The peroperative complications were ureteric perforation, pelvic wall injury, haemorrhage, parenchymal tear, colonic injury and the postoperative complications were haemorrhage, paralytic ileus, peritonism, urosepsis, hydrothorax, haemothorax. Delayed complications were persistent nephrostomy leak and delayed haemorrhage. The results showed that over 90% stone clearance was achieved. Sandwich therapy was needed for dumbbell extensions. PCNL appears to be the most dependable technique of stone clearance and ESWL appears to be only an ancillary technique suitable for selected cases.

6.

**BLADDER INJURY**

**Dr.V.Satheesh Kumar, Dr.Syam K.Ramesh**  
**Department of Urology Medical College Trivandrum**

We are presenting 16 cases of bladder injury admitted to Trivandrum medical college hospital for the last two years (1997-99). The variables evaluated were the; cause of injury type of bladder injury mode of presentation. Other associated injuries including pelvic fractures most of the cases were due to road traffic accident producing blunt injury to the bladder. 3 cases were due to blow to the lower abdomen 2 cases due to full and iatrogenic cases; in following TUG-BT and extraperitoneal rupture and other occurred during Caesarean section and hysterectomy. Evaluation of patients management and review of literature will be presented.

7.

**COMPLEX CYST**

**Dr.V.Satheesh Kumar, Dr. Syam K. Ramesh, Dr. N. Venugopal**  
**Department of Urology Medical College Trivandrum**

We are presenting 2 cases of complex cyst. Patient evaluation management and HDR and for presented.

Case 1: 68 year old lady was investigated in Surgery department for abdominal discomfort. USS showed a cyst in the left kidney 8x6cm with internal septae and linear calcification. Case was referred to our Department. We investigated the patient further with CT scan, which showed Boasmak class III cyst. We did radical nephrectomy and sent the specimen for HPE. HPR came as multilocular cyst without any evidence of malignancy.

Case 2: 36 year old female presented with right sided abdominal mass gradually increasing in size. No history of haematuria. Old USS guided aspiration of renal cyst three years back. Further investigation showed Boasmak class IV cystic lesions in right kidney. We did radical nephrectomy and HPR came as cystadenocarcinoma.

8.

**A CASE OF MONO NEUROPATHY AFTER RADICAL RETROPUBIC PROSTATECTOMY**

**Dr. R.Vijayan Consultant Urologist, Specialists' Hospital, Kochi.**

A 56 year old male presented with haematuria. He was diagnosed to have organ confined cancer of the prostate. Pre-operative CT scans were negative for metastasis. Standard Radical Retropubic Prostatectomy was done. On withdrawal of epidural analgesia in the post operative period, the patient experienced severe pain in the lower aspect of the right leg especially in the region of L5. He was treated with steroids with partial relief. Dramatic relief followed decompression and biopsy of an osteosclerotic area on the vertebral body of L5 vertebra. The

sclerotic focus was on the Left side and biopsy of the sclerotic lesion was negative. Post operative radiculopathy is a well documented rare complication after surgeries involving exaggerated lithotomy position. It can also be a complication after spinal or epidural anaesthesia. A medline search did not show any references of this phenomenon after radical retropubic prostatectomy.

9.

### **A CASE OF LARGE RETROVESICAL CYST**

**Dr. K. Mahesh, Dr. G. Venugopal, Dr. Syam K. Ramesh,  
Department of Urology, Trivandrum Medical College.**

A 53 year old man presented with complaints of pain in the perineal region and irritative voiding symptoms of long standing duration. He was being treated for 'Chronic prostatitis' without any relief of symptoms. USS abdomen showed a large dumbbell shaped cyst in the retrovesical region which was confirmed by TRUS and CT scan. Exploration revealed a large cyst arising from the seminal vesicle, which was dissected out and excised, resulting in relief of symptoms. The differential diagnosis of a cyst in the retrovesical region as well as a review of literature on seminal vesicle cysts will be presented.

10.

### **VIDEO PRESENTATION - COMBINED LAPAROSCOPIC URETEROLITHOTOMY AND PCNL.**

**Dr.R. Vijayan - Consultant Urologist, Specialists Hospital, Kochi.**

65 years old male patient presented with large upper ureteric and multiple small ureteric and renal calculi. The large ureteric stone was removed laparoscopically by a reteroperitoneal approach. The patient was repositioned and a PCNL performed at the same time, on the same side. 2 different minimally invasive procedures were used to retrieve stones in one sitting. At the same time it showed the role of each procedure. Laparoscopy is a good substitute for open surgery and PCNL holds its place in treatment of renal stones.

11.

### **VIDEO PRESENTATION - RETROPERITONEOSCOPIC AND DEROOFFING OF A SYMPTOMATIC PERIPELVIC CYST**

**Dr.A.S. Albert, Dr.G. Satish Kumar, Bharath Hospital, Kottayam.**

32 year old lady presented with repeated episodes of left loin pain and the CT scan showed an intrarenal clear peripelvic cyst, splaying the pelvicalyceal system and cortical thinning at one or two sites. Retropertoneoscopy was done with one 10 mm primary port and three 5 mm secondary ports. Gerota's fascia was opened and stripped off from the anterior and posterior surface of the kidney. Deroofing of the cysts was done at one point where renal cortex appeared thin and cysts appeared like a blue dome. Margin of the deroofed area was cauterised using bipolar cautery. Perinephric suction drain was kept and brought out through one of the secondary ports. On the next day, drain was removed and patient was discharged from the hospital.

13.

**BLACK PEARL - 1****Dr. Joseph Thomas, Kasturba Medical College, Manipal.**

40-year-old male was diagnosed to have urinary tuberculosis by symptoms, imaging, cystoscopy and bladder biopsy and started on ATT. He had double J stent on the right side. He was reevaluated at 2 months and left nephrostomy was put in for increasing obstruction. The DJ stent right side was removed and repeat IVP and isotope studies were done at 4 months. Both kidneys were functioning well. Only the upper ureter was seen on right side. Bladder was of a thimble size. MCU showed VUG left side. Reconstructive procedure was planned at 4 1/2 months.

Augmentation cystoplasty was done with detubularised sigmoid segment and reimplantation of the left side. There were multiple strictures on the right side upto the infundibular level. A separate ileal segment had to be used as ureter. The anastomosis to pelvicalyceal system was difficult and not watertight. On the 14th postop day the patient had ascites, urinary leak from wound, jaundice and toxemia. A cystogram showed disruption of the augmentation at the site where the ileal ureter was anastomosed to the augmented bladder. The leak at the renal side also was continuing. So nephrectomy with excision of the ileal ureter right side and repair of the augmented bladder disruption was done. The patient had an uneventful recovery. Mistakes are 1. Underassessment of the right side ureteral strictures and 2. Choice of separate intestinal segments for augmentation and ileal ureter. The question is: Should we preserve a functioning kidney, which requires a complex repair.

14.

**BLACK PEARL - 2****Dr. Joseph Thomas, Kasturba Medical College, Manipal.**

A 72-year-old gentleman was taken up for PCNL. He had calculi in the left lower calyx. The procedure went on uneventfully. The system was entered with a single clean puncture without any evidence of contrast extravasation. There was no evidence of any injury to the collecting system during the procedure. After the procedure was over, his abdomen was found to be distended. A Ryle's tube was passed and aspirated, but the distension persisted with some abdominal discomfort to the patient. As there was evidence of shifting dullness, an emergency ultra sound was done in the recovery room itself. This showed fluid in the peritoneal cavity. A laparotomy was done and we found about a litre of clear fluid in the peritoneal cavity. It looked as if most of the saline that we had used for irrigation had come into the peritoneal cavity. There was no bleeding, no evidence of collection of fluid or blood around the kidney except for a small haematoma over the puncture site posteriorly, where the nephrostomy tube was going in. The spleen and the descending colon were intact and there was no fresh bleeding or leakage of urine. The abdomen was closed with a tube drain in the peritoneal cavity. A DJ stent was then passed up.

The drain was removed after two days as there was hardly any drainage and the patient had an uneventful recovery.

The possible cause of this unusual problem is to be discussed. The fact that this has occurred in the absence of any obvious counter puncture of the kidney makes it interesting. Could it have come out around the nephroscope and gone through the peritoneum because of increased

pressure in the retroperitoneum? The possibility of one of the guide wires having moved inadvertently during the procedure and causing a perforation into the peritoneum also is to be considered.

14.

### PERFORATION OF THE URETER (BLACK PEARL III)

Dr. Nebu Issac Mammen and Dr. Bobby Mathew George

A 72-year-old lady, a known diabetic, was admitted with abdominal pain, vomiting and fever. On examination she was toxic, febrile and there was marked tenderness in her left iliac fossa. Her hemoglobin was 62gms, S. creatinine was 2.9, blood urea 120, blood sugar 149, Urine microscopy was within normal limits. Ultra sound scan done on admission showed a few matted loops of bowel in the LIF, but no collection was seen. A repeat ultrasound done after two days showed a large collection in the left iliac fossa and in the left thigh. Both kidneys showed minimal dilation of the collecting system.

She underwent drainage of a parietal abscess in the left iliac fossa and one in the left thigh. Foul smelling pus was drained and a drain was left in. The drainage changed to clear fluid after a few days and then the possibility of urine was considered and a CT Scan was done. This showed evidence of contrast leaking out through an opening in the upper ureter on the left side. The left kidney was functioning well while the right kidney showed poor function.

X-ray review showed a RO shadow in the region of the left lower ureter which appeared to be ureteric calculus with a sharp pointed edge. A left Bulb ureterogram confirmed the presence of the calculus in the lower ureter and showed leakage of contrast through an opening in the upper ureter just below the PUJ. The left ureteric orifice was dilated and the stone was removed using a short ureteroscope. A double J stent was put in after passing a guide wire past the opening into the kidney. The urine leak stopped the next day. The post operative period was uneventful.

Calculus perforation of the ureter into a hollow viscus like the colon, bladder and even the vagina have been reported in the past. But these are all cases where the stone has eroded the neighbouring structures and come out. Unlike these, our case is one where the perforation has occurred at a site away from the stone. Could this have occurred from trauma caused by the sharp edge of the stone as it passed down? The other possibility is that of the ureter having given way due to the back pressure caused by the obstruction. But this sounds unlikely. We feel that this probably occurred following some damage to the ureter caused by the sharp edge of the stone as it moved down, which later gave way due to the back pressure following the obstruction. The fact that she is a diabetic may have predisposed her to poor healing and the consequences mentioned above. To date we are not aware of any report of a similar case where there has been a perforation of the ureter away from the site of a stone, making it appear almost like a spontaneous perforation.

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