

Video Session 1: Pediatric Urology, Stones

Monday, November 2,
10:45-11:45

VID-01.01

Laparoscopic Utilization of Intestinal Segments in the Management of Different Pediatric Genitourinary Diseases: Preliminary Report

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Introduction and Objectives: Intestinal segments are being commonly used in reconstructive genitourinary surgery in children. Children with Myelomeningocele and those with valve bladder syndromes might need Mitrofanoff appendico-vesicostomy for clean intermittent catheterization. The technique is a highly demanding procedure to be performed by laparoscopy; however, it has been reported by both laparoscopy and robotic assisted techniques. The former group in plus may need antegrade continence enemas for the management of bowel disorders which can be carried out by laparoscopy. Adolescents with complete androgen insensitivity syndrome reared as females need to have a vagina for intercourse. The use of different intestinal segments to construct a neovagina is well established; however, laparoscopic reports using intestinal segments for vaginal reconstruction are scarce.

Materials and Methods: From January 2007 till April 2009, 7 patients were operated upon, 5 children with Myelomeningocele underwent laparoscopic antegrade continence enema for management of fecal incontinence. A 3-year-old boy with valve bladder syndrome on clean intermittent catheterization underwent laparoscopic Mitrofanoff appendico-vesicostomy, and a 19 year old patient with complete androgen insensitivity syndrome underwent laparoscopic assisted ileal neovagina.

Results: All children who underwent laparoscopic ACE Malone are continent with excellent cosmetic and functional outcome with no intraoperative or postoperative complications. The child who underwent laparoscopic Mitrofanoff is continent for 3 hours from the Mitrofanoff channel with excellent cosmetic outcome. The adolescent with neovagina from the

ileum has a satisfactory vagina with excellent functional and cosmetic outcome.

Conclusions: laparoscopic utilization of intestinal segments is a feasible procedure carrying high functional outcome with excellent cosmetic results. The need for laparoscopic expertise is crucial but the learning curve is very rapid.

VID-01.02

Retroperitoneoscopic Pyeloplasty in Children and Adolescents:

Presentation of Different Techniques
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Introduction and Objectives: Retroperitoneoscopic pyeloplasty in children and adolescents represents a challenge. Crossing vessel may be encountered in up to 50% of older children and adolescents adding more difficulty to the procedure. In the presence of crossing vessel; both intrinsic and extrinsic obstruction may play a role; however, sometimes it is only the crossing vessel that causes obstruction. Herein, we provide our experience in Retroperitoneoscopic pyeloplasty with and without crossing vessel presenting different techniques for the repair.

Material and Methods: From the period of January 2006 till March 2009; 11 patients with PUJO were operated upon, 6 males, 7 females with a mean age of 10 years (2-19). Crossing vessel was encountered in 4 patients who underwent Retroperitoneoscopic complete dismembered pyeloplasty and anterior transposition to the vessel in 2 and pyeloplasty to the psoas muscle in the other 2 children. The remaining 7 patients underwent complete Anderson Hynes pyeloplasty through Retroperitoneoscopic approach.

Results: The mean operative time is 196 minutes (90-360). The mean hospital stay is 2.1 days (2-3). No conversion to open surgery. No intraoperative or postoperative complications. Retroperitoneoscopic pyeloplasty carries the shortest operative time.

Conclusions: Retroperitoneoscopic pyeloplasty is safe and effective even in very small children. The presence of crossing vessel can be the only cause of obstruction, in this situation our preliminary results of pyeloplasty is encouraging.

VID-01.03

Scrotal Septal Dartos Flap for Neourethral Coverage in Proximal Hypospadias Repair: A Technique to Minimize Urethrocutaneous Fistula

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Introduction and Objective: To reduce the incidence of urethrocutaneous fistula in proximal penile and penoscrotal hypospadias, we describe a new technique of scrotal septal dartos flap for neourethral coverage.

Materials and Methods: Nine patients in study group comprised of 6 proximal penile hypospadias repaired with tubularized incised plate urethroplasty with dorsal plication and 3 penoscrotal hypospadias for second stage surgery earlier grafted with Bracka technique. Using needle tip cautery, from hypospadiac meatus, entire length of median raphe on anterior scrotal surface was incised exactly in midline. Sparing the visible vessels on incised surface of the scrotal septum, it was bisected up to the bulbospongiosus muscle in almost avascular plane. A rectangular sheet of dartos harvested from antero-inferior aspect of scrotum, continuous with bisected septum, provided long wide vascular sheet of septal dartos attached to bulbospongiosus muscle. Its vascular supply with scrotal branch of perineal artery which emerges out of triangle between bulbospongiosus ischio-cavernosus and transverse perineii muscles was preserved. Harvested flap was sufficient to cover up to tip of glans. Neourethra was covered with the scrotal septal dartos flap without adding any other soft tissue.

Results: Scrotal septal dartos flap provided sufficient soft tissue for neourethral coverage in all. Transient scrotal oedema occurred in all patients. There was no scrotal skin necrosis. Subcoronal urethrocutaneous fistula occurred in one. With symmetrical distribution of soft tissue neourethral coverage, aesthetic appearance was gratifying in 8 but mild rotation occurred in one patient. There was no recurrent or residual chordee.

Conclusions: Scrotal septal dartos flap with specific vascular supply and abundant quantity of soft tissue, provides a good alternative for neourethral coverage in proximal hypospadias.

VID-01.04**Sutureless Retroperitoneoscopic Upper Tract Stone Extraction**

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Introduction and Objective: We introduce our experience with retroperitoneoscopic upper tract stone extraction as an alternative to open surgery when endourological procedures are not available.

Materials and Methods: Between May 2008 and March 2009, a total of 22 patients underwent retroperitoneoscopic upper tract stone extraction. The procedure was evaluated regarding operative time, post-operative pain, hospital stay and leakage time.

Results: Mean operative time was 72 minutes. Twelve cases underwent retroperitoneoscopic ureterolithotomy, 9 cases underwent retroperitoneoscopic pyelolithotomy and 1 case underwent retroperitoneoscopic nephrolithotomy. In all cases, no sutures were taken as the ureterotomy, pyelotomy and nephrotomy were left sutureless. In 10 cases, stenting using a ureteric stent was done. Intraoperative hemorrhage was very minimal with an average less than 200cc. Urine leakage mean time was 3 days. Persistent leakage occurred in 1 case that was managed conservatively with a double-J stent. Mean hospital stay was 3.6 days.

Conclusions: Retroperitoneoscopic upper tract stone extraction is technically demanding but yet a safe and reliable modality of treatment. It is a very good alternative to open surgery when needed especially in difficult cases where endourology may be a challenge.

VID-01.05**Modified Technique of Laparoscopic Ureterolithotomy for Lower Ureteric Stone**

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Introduction and Objective: To describe modifications in the technique of transperitoneal laparoscopic ureterolithotomy for the lower ureteric stone.

Materials and Methods: Three patients with lower ureteric stone (below the lower sacroiliac joint) with good renal function were treated with LU. In 45 degree lateral position, location of the stone on the body surface in relation with bony landmark was marked to help place the ports. Due to absence of haptic feedback, locating exact site for incision over the

stone becomes challenging. Ureteral Pinch using Maryland dissector helped in localizing the stone as a non stone bearing part of the ureter could be pinched fully but the stone carrying part could not. Stenting was done laparoscopically. Both the ends of JJ stent were straightened by placing a rigid end of the guide wire cut short of the stent length. A nick was made on the stent at the site corresponding to the distance of the stone from pubic tubercle on X-ray KUB to expose the guide wire. Prolene suture was then tied to the guide wire, which is taken out once the stent was in place. This assembly was passed into the ureter proximally once the stone was taken out and then the distal end was pushed into the bladder before taking the guide wire out.

Results: Mean operative time was 120 (110-130) minutes and EBL was 100 ml. Stones could be retrieved in all 3 cases and there was no intra or post operative complications. Urethral catheter was taken out before the drain. All 3 cases had no intra or postoperative complications. Double J stent was taken out after 6 weeks. At the mean follow up (follow-up was done with assessment of clinical symptoms and ultrasonography) of 5 months all the patients are doing well.

Conclusions: With modified technique of laparoscopic stenting, ureteral pinching and port placement strategy, stones in the lower ureter could safely be removed with transperitoneal laparoscopic approach.

VID-01.06**Laparoscopic Management of Distal Ureteric Stones in Bilharzial Ureter**

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Introduction and Objective: Bilharzial ureters are complicated by distal stricture due to precipitation of Bilharzial ova in ureterovesical junction and distal ureter. These cases are associated with poorly functioning and grossly hydronephrotic kidneys that hinder endoscopic manipulation of the coexistent distal, high burden, long standing impacted stones technically unfeasible. The objective is to define the role and efficacy of laparoscopic management aiming at complete stone clearance with minimal attendant morbidity.

Material and Methods: Transperitoneal laparoscopic ureterolithotomy was performed in 17 bilharzial patients (11 men and 6 women) with distal ureteric stones. The mean age was 41 years, the mean size of stone was 2.3 cm. Intravenous

urography showed grossly hydronephrotic kidney in 15 patients, multiple stones in 3. Eleven patients had previous endoscopic dilation of their distal ureteric bilharzial strictures. Patients were positioned in supine position with table tilted 45 degree. Two 10 mm and two 5mm trocars were used. The ureter was incised directly over the stone longitudinally and the stone was extracted. A double-J stent was inserted into the ureter. Ureteral incisions were closed by 4-0 polyglactin running suture. When stenting failed to pass a bilharzial stricture, laparoscopic ureterovesical implantation was carried out after excision of the strictured segment. Tube drain was left. The D-J stent was taken by cystoscopy after 3 weeks.

Results: Seventeen cases of distal ureteric stones in bilharzial ureters were successfully managed laparoscopically with mean operation time of 1.5 hours (from 1 to 3 hours), tub drain was removed on third day, first stone free rate was 100%. Six patients needed laparoscopic ureterovesical implantation. Zero conversion to open surgery or readmission, and the mean hospitalization time was 5 days. With 3-18 months IVP follow up after operation, hydronephrosis was lightened and kidneys showed better function.

Conclusion: Laparoscopy is safe and effective minimally invasive procedure for distal ureteric stones in bilharzial ureter with heavy hydronephrosis. The predominant feature is that the burden calculi can be wholly taken out and any coexistent stricture can be managed with the advantage of less morbidity, short hospital stay and short convalescence period.

Video Session 2: MIS Monday, November 2, 13:30-14:50

VID-02.01**Non-Functioning Ectopic Kidney: Laparoscopic Nephrectomy and Vaginal Extraction**

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Introduction & Objective: Nephrectomy may be necessary for patients with inflammatory non-functioning kidney when associated with stones, pain or recurrent urinary infection. Generally, this is a difficult procedure and, in such cases, the technique to be used remains controversial. We present our technique and evaluate the experience of

laparoscopic nephrectomy of non-functioning ectopic pelvic kidney with intact specimen extraction through the vagina.

Materials and Methods: We present a 60-year-old female with history of recurrent urinary tract infection due to a right pelvic ectopic non-functioning kidney with lithiasis. A laparoscopic nephrectomy was offered. The patient was placed in a supine position with her buttocks on the edge of the table. The legs were supported by mobile stirrups and the hips were abducted. A transperitoneal access was performed according to Hasson technique, 4 trocars were positioned. The ectopic pelvic kidney was identified between the rectum and right colon. The peritoneum was incised at this level. A dissection of the perirrenal inflammatory tissue was done. Ligation of the renal artery using hem-o-lock clips. After completion of the nephrectomy a 15 mm port was placed through the vagina. The kidney was placed into an Endocatch II bag®. The vaginal incision was extended. Pulling from the vaginal approach, the intact kidney was removed in the retrieval bag. The vaginal incision was closed laparoscopically. A drain was placed in the perinephric space.

Results: Operative time was 190 minutes and estimated blood loss was 200 cc. Postoperative length of stay was 5 days. Pathology revealed nephrolithiasis with severe chronic pyelonephritis. The patient returned to her regular activities on postoperative day 12.

Conclusions: Laparoscopic nephrectomy for pelvic ectopic nonfunctioning kidneys could be an alternative in cases of recurrent urinary infection with the advantages of minimally invasive surgery. The vaginal extraction in these cases is feasible.

VID-02.02

Transvaginal NOTES Nephrectomy Using a Novel Multi-Channel Port

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Introduction and Objectives: Pure NOTES (Natural Orifice Transluminal Endoscopic Surgery) transvaginal radical nephrectomy has been performed only in cadavers and animal models because of technical difficulties in humans. Few cases of hybrid transvaginal radical nephrectomy (using 2 extraumbilical abdominal ports) have been reported with success in humans. In this video we present a novel technique of hybrid transvaginal NOTES radical nephrectomy using a novel multi-channel trocar inserted vaginally and transumbilically.

Materials and Methods: Transvaginal radical nephrectomy was performed in a 66-year-old woman with a left lower pole kidney tumor. A Triport (Advanced Surgical Concepts, Dublin, Ireland) was inserted in the umbilicus and vagina. Effective visualization and dissection were accounted for both ports interchangeable use of a 5 mm flexible-tip endoeye camera (Olympus, Tokyo, Japan) and straight or bent instruments. Specimen extraction was accomplished by the vagina access extending the colpotomy.

Results: Total procedure time was 220 min. Estimated blood loss was 150 cc. The patient had an uneventful postoperative course and was discharged 24 h after

the procedure. Pathology revealed clear cell carcinoma of 6.5 cm in the lower pole of the kidney with no local infiltration.

Conclusions: Pure NOTES transvaginal nephrectomy is still technically demanding because of the absence of adequate instruments and surgical expertise in performing a safe and effective dissection. However, our transvaginal technique assisted by a umbilicus single port is an appealing alternative to further reduce morbidity and obtain a virtually scarless outcome.

VID-02.03

Use of Cold Scalpel in Laparoscopic Partial Nephrectomy

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Introduction: Most of energy-based tumor resection techniques presents the drawbacks of not being effective in coagulating larger vessels and sinuses while causing tissue color alteration and distortion of the resection bed, not facilitating a thorough and clear evaluation neither of cutting margins and bleeding vessels nor of any opening in the collecting system. In this video we show our technique using cold scalpel during laparoscopic partial nephrectomy and report our preliminary results.

Methods: We performed a laparoscopic partial nephrectomy with cold scalpel in 4 patients with incidental small renal masses. After having clamped the artery cold scalpel mass resection was accomplished. Hemostasis was performed by Hem-o-lock (Weck Closure System, Re-

VID-02.03, Table 1

Gender	Male	Female	Male	Male
Comorbidities	None	None	Hypertension	None
Previous abdominal surgery	Hernioplasty Suprapubic prostatectomy	Ovarian cyst resection	None	None
Symptoms	Incidental finding	Incidental finding	Incidental finding	Incidental finding
Tumor side	Left	Right	Left	Right
Warm ischemia time (min)	24	30	20	22
Operatory time (min)	150	190	110	120
Pre-post operative Hct variation	3,3	4,2	8,1	5,9
Pre-post operative Hb variation	1,1 gr	1,3 gr	2,5gr	1,5 gr
Estimated blood loss (cc)	400	300	600	300
Transfusion rate			1 unit	
Tumor size (cm)	3.5 × 2.5	3.5 × 3	4.5 × 3	3.1 × 3.1
Tumor weight (gr)	26	31	40	29
Pathology	Clear renal cell Furhman II	Clear renal cell Furhman III	Clear renal cell Furhman I	Clear renal cell Furhman I
Margins	Negative	Negative	Negative	Negative

search triangle Park NC) and interrupted sutures. Renal parenchyma was repaired over surgical bolsters applying sutures secured to Hem-o-lock clip.

Results: Results, clinical and tumors features are reported in the following table.
Conclusion: Unlike most of energy-based technologies incorporated in laparoscopic partial nephrectomy cold scalpel partial nephrectomy in our preliminary experience accounts for a very precise and smooth cut, quick resection to reduce warm ischemia, reliable grossly detection of tumor margins and optimal visualization of any bleeding and entry in collecting system requiring repair. A limitation is in perihilar tumor where a counting dissection is better provided by curved scissors, not being cold scalpel suitable because of the straight shape

VID-02.04

Chicken Gizzard: A Novel Training Model for Laparoscopic Urethrovessical Anastomosis

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Introduction and Objective: Suturing the urethro-vesical anastomosis is considered one of the most technically complex steps of laparoscopic radical prostatectomy (LRP), and a reason why many urologists abandon the learning process. We describe a simple, economic and reproducible model, resulting in a new training option for conducting urethro-vesical anastomosis during laparoscopic radical prostatectomy.

Materials and Methods: Materials included non-gutted whole chickens weighing more than 2 kilograms, laparoscopic training box, video camera, monitor, needle holder, and sutures. For the anastomosis, a partially sectioned gizzard (anatomically similar to the bladder neck), was sutured to the rectal stump (urethra). Once the model is placed in the box, the anastomosis is performed in anatomical conditions that are very similar to the real procedure performed in humans.

Results: Multiple trial anastomoses were conducted using this model, with several important advantages noted: (1) easily reproducible setup, (2) working area approximates the human pelvis, (3) tissue quality, texture and diameter similar to the urethra and bladder neck, (4) possibility of simulating anterior tennis racket reconstruction, (5) anastomotic integrity can be tested both with catheter flush

and/or transanal endoscopy, and (6) economically affordable.

Conclusion: The gizzard-rectum model for urethro-vesical anastomosis is simple, easy, reproducible, and affordable. The anatomy of the chicken pelvis, and its tissue characteristics enables training under conditions very similar to the human case. Future studies will determine the face, content, and construct validity of this model for learning the techniques for urethro-vesical anastomosis.

VID-02.05

Single Port Laparoscopic Augmentation Enterocystoplasty

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Introduction and Objective: To report on the initial case and surgical technique of laparoendoscopic single site (LESS) subtotal cystectomy and augmentation enterocystoplasty performed through a single multichannel transumbilical port.

Materials and Methods: LESS subtotal cystectomy and augmentation ileocystoplasty was performed in a 20-year-old female with neurogenic bladder. The patient had long history of urinary incontinence, frequent and urgent urination, and repeated urinary infections. Imaging studies and urodynamics revealed 100 cc bladder capacity with thickened walls, countless diverticulae and low compliance. The procedure was performed exclusively via a novel multichannel access port that had four 12 mm access channels (QuadPort). Additional instruments included a 5 mm videolaparoscope, SonoSurge, and flexible scissors. Subtotal cystectomy was initially performed by resecting 70% of the bladder. The ileal loop was exteriorized through the single-port by detaching the valve and the ileal pouch and bowel continuity were restored extracorporeally. The vesico-ileal anastomosis was performed laparoscopically.

Results: Operating time was 300 minutes and blood loss was less than 100 cc. There were no intraoperative or postoperative complications. Hospital stay was 6 days. The drain and the Foley catheter were removed 7 and 21 days after surgery, respectively. Postoperative cystogram confirmed a watertight anastomosis and increased bladder capacity. Patient is performing intermittent self-catheterization to ensure complete emptying.

Conclusions: Our initial experience with LESS subtotal cystectomy and ileocystoplasty through a single port is encouraging, indicating technical feasibility of this approach. Use of the larger diameter QuadPort significantly facilitates extracorporeal bowel reconstruction.

VID-02.06

Bipolar Ureteroscopic Approach in Complete Ureteral Stenosis

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Introduction: The endoscopic approach may be a viable alternative in the treatment of ureteral stenosis. Certain particular situations may impede either retrograde or antegrade approach. The aim of our study was to determine the value of combined bipolar approach of these cases.

Methods: Between January 2004 and January 2009, in our clinical department, 5 cases of complicated ureteral stenosis were treated by bipolar endoscopic approach. We used semirigid ureteroscopes (Wolf and Storz), a 7.5F flexible ureteroscope and cold knife/scissors. The follow-up protocol included ultrasonography, intravenous urography and, in selected cases, renal scintigraphy. The mean follow-up period was 23 months (range between 6 and 37 months).

Results: The mean operative time was 78 minutes (range 45-112 minutes). The mean stenosis length was 0.8 cm (range between 0.3-1.2 cm). We performed retrograde cold-knife endoureterotomy, guided to the light of the antegradely passed flexible ureteroscope (cut-to-the-light technique) in 3 cases, or using the antegradely passed guidewire in 2 cases. An indwelling JJ stent was placed for 6 weeks. We didn't describe major intraoperative complications. All patients were evaluated at 6, 12 and 18 months. The overall success rate was 60%. Two patients developed recurrence at 6 months. In one case, a Memokath metallic stent was indwelled, while the other was treated by retrograde endoincision.

Conclusion: Bipolar endoscopic approach could represent a safe and effective treatment method in selected cases of ureteral stenosis. This approach may be an alternative to open surgery, however requiring an operative team well trained in endoscopic techniques.

VID-02.07

Intravesical Foreign Bodies: Endourological Treatment

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Introduction: The wide variety of foreign bodies purposely or accidentally inserted into the bladder includes a large variety of objects. This study aimed to present our experience in diagnosing and managing such cases.

Methods: Between January 1995 and January 2009, 51 patients (27 females and 24 males) with different types of foreign bodies were admitted into our clinical department. The patients presented dysuria, hematuria, recurrent urinary tract infections, lower abdominal pain, pyuria or excretion of small parts of the foreign body. The investigative protocol included a thorough medical history, clinical examination, abdominal ultrasound, KUB, IVP and cystoscopy.

Results: Our series of patients was represented by 2 groups. The first group included 23 patients (17 males and 6 females) with iatrogenic foreign bodies (15 calcified: migrated double-J ureteral stent, suture material, surgical meshes, fragments of Foley or Pezzer catheters, and 8 non-calcified: stainless steel surgical needles, migrated intrauterine device). The second group was represented by 28 patients (8 males and 20 females) with foreign bodies introduced for autoerotic stimulation: candles, paintbrushes, pencils, electric wires, vinyl tubes etc. 50/51 cases were treated endoscopically: lithotripsy, foreign body removal with the grasping forceps or with the stone basket. Open surgery was necessary in only 1 case.

Conclusion: Bladder foreign bodies are a rare pathological entity. Nevertheless, they may represent an operative emergency. The endoscopic approach is an efficient option in order to minimize the operative trauma. However, surgical retrieval may be required.

VID-02.08

DIT or Endoscopic Finger: A New Device in the Performance of Laparoscopic Surgery

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Introduction: During laparoscopic surgery, blunt dissection by means of surgical instruments placed through a trocar in-

serted in the abdominal wall is sometimes difficult and not satisfactory. Availability of laparoscopic instruments for soft tissue dissection is limited to the use of forceps and scissors, obviously without any option to hand dissection (unless one perform a hand assisted proceeding). We present a new device, DIT, to facilitate intrabdominal manipulation of lax tissues.

Materials and Methods: We present a video showing the use of a new instrument called DIT designed for laparoscopic surgery to facilitate lax connective tissue dissection. In a pilot study that we carried out, we practiced 34 operations in 7 pigs to stand out the usefulness and security of this instrument. In all cases, images from outside and inside were recorded and all incidents were registered.

Results: The urological proceedings done were nephrectomy and prostatectomy. Images displayed focus on the steps in which the DIT is used in this surgical operations. Hysterectomy, iliac lymphadenectomy, gastroesophageal fundoplication and the dissection of the rectum in low anterior resection were also performed by other specialists. In one case there was a mechanical problem of the finger and in five cases latex bundle presented some laceration at the end of the proceeding. Surgeons satisfaction was high in all cases outstanding how intuitive is the manipulation of this instrument. There was no secondary bleeding due to DIT. It was very useful for gentle suspension or separation of any viscera.

Conclusions: The DIT is a handling instrument for laparoscopic surgery created to facilitate the dissection of lax spaces. It also can be used as a deflecting probe insight the abdomen. Its mechanical functioning is correct. Its manipulation is easy for the surgeon and save for the patient.

Video Session 3: Adrenal, Kidney, Ureter

Monday, November 2,
15:15-16:15

VID-03.01

Laparoscopic Adrenalectomy for Large Adrenal Masses

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Introduction and Objective: Laparoscopic adrenalectomy (LA) as the gold standard for small adrenal masses. However, the role of LA for large masses (typically considered size > 6cm) has been reported, but is less widely accepted. Current controversies include the appropriateness of LA for large or malignant tumors, particularly when retrocaval dissection is anticipated. We present our contemporary experience with LA in this setting.

Materials and Methods: Three patients underwent laparoscopic adrenalectomy between 2006 and 2008, for adrenal lesions larger than 8 cm. Intraoperative data were collected retrospectively.

Results: Mean tumor size was 10.6 cm (range 8.3 to 14 cm). Mean operative time was 180 minutes (range 120 to 300 minutes), and mean estimated blood loss was 183 ml. There were no intraoperative complications or conversions to open surgery. Surgical margins were negative in one patient with adrenocortical carcinoma. The video demonstrates complete suprarenal inferior vena caval mobilization in one case.

Conclusions: LA for adrenal masses larger than 8 cm is safe and feasible. Open surgical principles are replicated. The inferior vena cava can be mobilized, allowing safe excision when retrocaval dissection is required.

VID-03.02

Retroperitoneoscopic Partial Adrenalectomy for Small Adrenal Tumors (≤1cm): The Rui-jin Clinical Experience in 96 Procedures

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Introduction and Objective: Retroperitoneoscopic adrenal surgery for small adrenal tumors (<1cm) can be challenging for its features and difficulties, and even probably be omitted intraoperatively. This is an attempt to present our experiences in the retroperitoneoscopic partial adrenalectomy for small adrenal tumors.

Materials and Methods: We retrospectively reviewed the records of 389 consecutive retroperitoneoscopic adrenalectomies from September 2005 to March 2009; 96 of them were small adrenal tumors. Ultrasonography and CT scanning were performed on all the cases preoperatively, and MRI or PET/CT was used on some of the patients. We performed partial adrenalectomy for adrenal tumors and

total adrenalectomy for adrenal hyperplasia. During surgery, the internal part of the adrenal gland closing to the retroperitoneum was liberated firstly, and the whole adrenal gland was dissected completely. It was important to take full usage of all preoperative imagings.

Results: Mortality was zero. Conversions to open surgery were necessary in 4 patients (3.5%). Reasons for conversions were: target missing in 2, massive hemorrhage caused by central adrenal vein injury in 1, severe adhesion in 1. Adrenal tumors averaged 0.7cm (range 0.5-1.0cm) including 76 cases of primary hyperaldosteronism (69 adenomas; 7 Hyperplasia), 11 nonfunctional adrenal adenomas, 3 Cushing syndrome, 2 pheochromocytoma, 2 myeloidoma, 1 adrenal metastasis, 1 melanoma). The operative time in our initial 40 cases was significantly longer than that in the subsequent 56 cases ($P < 0.01$). However, no significant correlation was observed between estimated blood loss and the number of procedures.

Conclusion: Retroperitoneoscopic partial adrenalectomy is a safe, effective, and minimally invasive therapeutic option for patients with small adrenal tumors. With improved operative technique, the time required for this procedure has been decreased. Liberating the internal part of the adrenal gland closing to the retroperitoneum firstly and exploring the whole adrenal tissue intraoperatively are the key points of the operations.

VID-03.03

Transperitoneal Laparoscopic Adrenalectomy for Recurrent Adrenal Tumors: Report of 6 Cases

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Introduction and Objectives: To evaluate the feasibility and safety of transperitoneal laparoscopic adrenalectomy for recurrent adrenal tumors.

Materials and Methods: Between Jan. 2006 and June 2008, 5 patients (6 times) with recurrent adrenal tumors were treated with transperitoneal laparoscopic adrenalectomy, with 3 males and 2 females in gender and the average age 43.4 years old (32-62). One patient was diagnosed as adrenal metastasis of liver cancer and was operated laparoscopically for 2 times. The other 4 patients were suffered from recurrent adrenal adenoma postoperatively and all confirmed by CT scan with the adenoma diameter 1.2-3.0cm. Four trocars were used in the operation and placed in the umbilicus, 5cm off the mid-

line at the level of umbilicus by the tumor side, 5cm and 10cm above the umbilicus along the midline respectively. The laparoscope was inserted into the peritoneal cavity through the umbilical trocar. The transmesenteric pathway was used to expose the tumor directly at the medial side and upper pole of kidney.

Results: The mean operating time was 145 (110-215) minutes and the mean blood loss was 85ml (50-150ml). The patient with liver cancer metastasis was proved of ipsilateral recurrence by CT scan 3 months after the operation and operated again. All patients could walk 1 day after operation and the drainage tubes were pulled out 3-5 days post-operation. No complications were noticed during and after the operation.

Conclusion: Transperitoneal laparoscopic adrenalectomy is feasible and safe for recurrent adrenal tumors on skilled and experienced hands.

VID-03.04

Malignant Adrenal Pheochromocytoma with Atriocaval Thrombus

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Materials and Methods: A 47 year-old female presented with dizziness and palpitations. On examination she was hypertensive (BP 220/140 mm Hg) with postural fall (180/110 on standing up). On imaging with USG, CT and MRI she had a giant (16 × 15 × 12 cm) left adrenal pheochromocytoma with inferior vena cava thrombus reaching upto the right atrium. Plasma and urinary catecholamines were raised to 27 times the normal values. After adequate alpha and beta blockade the patient underwent left radical adrenalectomy and nephrectomy and tumour thrombectomy with use of cardiopulmonary bypass and partial circulatory arrest. The video demonstrates all the steps of the operation—supine position, long mid line abdominal incision and later its mid-sternotomy extension, control of the left renal vessels, all the left adrenal vessels, putting the patient on cardio-pulmonary bypass, partial circulatory arrest by cross clamping the supra-coeliac aorta, opening of the IVC and the right atrium, extraction of the thrombus, closure of the IVC and reversal of cardio-pulmonary bypass.

Results: The procedure lasted 310 minutes, bypass time was 42 minutes, partial circulatory arrest time was 16 minutes

with the patient's core temperature at 31 degrees centigrade. The blood transfused was 1200 ml. Post-operative recovery was smooth. She was ventilated for 24 hrs and discharged on the 7th day. She was readmitted six weeks later for a left pleural effusion which required an indwelling inter-costal tube drainage for 9 days. No obvious cause could be established. She has been well subsequently now for further six weeks. Her BP, urinary catecholamines and post op MIBG scan are normal.

Conclusion: Management of pheochromocytoma with cavo-atrial extension is technically demanding, mandates critical assessment, multidisciplinary approach, and has an excellent outcome with good teamwork at a high volume tertiary level hospital.

VID-03.05

Posterior Vertical Lumbotomy, Single Clinic Experience

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Introduction: In this video we present the technique of posterior vertical lumbotomy. Various operations such as pyelolithotomy, ureterolithotomy, nephrectomy, dismembered pyeloplasty for UPJ, nephropexy and renal cystectomy were performed through this approach.

Materials and Methods: 476 patients (264 females and 204 males) were operated at our institution using Gil-Vernet modification of posterior vertical lumbotomy, from September 1986 to November 2008. Mean age of patients was 47.8 years (range 7 to 76). 31 patients were operated bilaterally. On the whole 507 approaches were done. All operations were done by one surgeon. 7 different operations were performed: 265 pyelonephrolithotomy, 85 ureterolithotomy, 57 renal cystectomy, 21 nephrectomy, 35 dismembered pyeloplasty for ureteropelvic junction obstruction, 13 nephropexy. In 67 patients with obstructed upper urinary tract, percutaneous nephrostomy was done preoperatively.

Results: In all patients with posterior vertical lumbotomy, disease was corrected in one procedure. Posterior vertical lumbotomy is much less traumatic incision, with no hernia, with less wound infection and other postoperative complications. It provides shorter postop. hospitalization with short operating time and less need of analgesics.

Conclusion: Our experience shows, that posterior vertical lumbotomy provides

direct approach to the renal pelvis and upper ureter, gives enough possibilities for free manipulation on upper urinary tract and could be considered as an effective alternative to more popular minimal invasive approaches such as laparoscopic techniques.

VID-03.06

Leiomyosarcoma of Inferior Vena Cava Involving the Renal Veins: A Surgical Challenge

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Introduction and Objectives: Primary tumours of the IVC are rare. Leiomyosarcoma is the most common primary malignancy in this rare situation. We encountered two similar patients during work up for right hydronephrosis.

Material and Methods: There were a 48 year-old male with right flank pain and abdominal fullness for 4 months and 45 year-old female with epigastric pain and weight loss for 6 months duration. Imaging studies revealed an IVC tumor encasing the right renal hilum and extending into left renal vein ostium in both the patients. The video demonstrates all the steps of the surgery. The patients were explored with long midline abdominal incisions in supine position. The left renal vein was divided in its pre-aortic position. A long segment of the saphenous vein was harvested. Two equal segments of the harvested vein were opened along one edge and sutured to obtain a conduit of double width. This conduit was sutured to the end of the detached left renal vein. The other end of the conduit was sutured end to side to the normal lower part of the IVC restoring venous drainage of the left kidney. Radical resection of IVC tumor and right radical nephrectomy was carried out. IVC reconstruction was done using a 20mm wide Gore-Tex graft.

Results: Postoperatively, patients were placed on anticoagulant therapy and had an uneventful and smooth recovery. Renal function remained within the normal range. Histopathology report revealed moderately differentiated leiomyosarcoma with negative surgical margins. Both the patients received post-op radiotherapy. The first patient is disease free at one year and the second patient is disease free at 6 months follow-up.

Conclusion: This case highlights the importance of radical resection for long term survival, need of technical expertise and high volume tertiary referral center for managing such complex cases. Further-

more, the importance of restoring left renal outflow in the situation of concomitant right nephrectomy is discussed. To our knowledge, no reports of this particular reconstruction have been published for IVC leiomyosarcoma involving renal veins. We feel that urologists are best equipped to carry out the resection and vascular surgeons are best equipped to reconstruct in such complex situations.

Video Session 4: Andrology, Prostate Cancer Tuesday, November 3, 10:45-11:55

VID-04.01

Peyronie's Disease Treatment by Penile Prosthesis Implantation and Tunica Albuginea Incisions Without Grafting

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Introduction and Objective: We evaluated the technique of using penile prosthesis implantation and tunica albuginea relaxing incisions without its grafting in the treatment of Peyronie's disease with erectile dysfunction.

Materials and Methods: A 55-year-old patient with Peyronie's disease, underwent surgical repair of penile deformities. Plaque was located in the distal third of corpora cavernosa. Erectile dysfunction was confirmed by prostaglandin E1 test. After penile degloving, dissection of the neurovascular bundle was made in Buck's fascia layer starting close to the urethra to prevent injury of its elements. This way very wide neurovascular bundle was lifted from the affected corpora cavernosa. Malleable penile prostheses are inserted into the deformed corporal bodies using standard ventral approach. Tunica albuginea was incised and opened at the plaque region to correct the deformities and to lengthen the penis. Wide neurovascular bundle was replaced and sutured to the corpora cavernosa over the incised tunica albuginea. In this fashion, grafting of the tunica albuginea was avoided.

Results: Three months after surgery good results are achieved. Penis is completely straightened and lengthened. The patient reported satisfactory sexual life.

Conclusions: Penile prosthesis implantation without grafting of the tunica albuginea could be a good alternative to other surgical techniques in the treatment of patients with Peyronie's disease and erectile dysfunction; wide dissection of neurovascular bundle allows an excellent approach to the plaque and good covering of incised and opened tunica albuginea.

VID-04.02

Our Experience with Indian Economical Penile Prosthesis

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Introduction and Objective: In patients who fail on conservative methods, penile implant is offered. Though various malleable and inflatable (two / three piece) are available, affordability is of concern in patients of developing countries. We have reviewed our experience of a Shah's malleable semi rigid Indian penile prosthesis implantation in a general hospital set up in 10 patients.

Materials and Methods: Ten patients underwent implantation of Indian Shah malleable penile prosthesis at Department of Urology at a tertiary care hospital in Mumbai, India, between August 2005 and September 2007. International Index of Erectile Function (IIEF) symptom scale was used to assess preoperative and post-operative erectile satisfaction. The commonest age group was 30-49 yrs. Among 7 patients, etiology was of vascular origin, either arteriogenic or venous leak accounting for 4 and 3 patients respectively. Overall satisfaction rates before starting any treatment was 1.1 in the scale of 1 to 10 on IIEF symptom scale.

Results: All patients underwent Shah Indian penile prosthesis "with hinge" model intracavernosal implantation. Mean corpus diameter measured during implantation was 10.85 mm and average measured intraoperative corporal length was 17.8 cm. Perioperatively, one patient (10%) had cross perforation that was successfully managed intraoperatively. Two patients (20%) had superficial wound infection. No patient had any deformity, penoscrotal hematoma or required any removal/replacement. Seven patients followed up with average follow up of 7.2 months (range - 3 months to 12 months). All patients had high satisfaction with their implant and sexual performance with IIEF score post implant was 7.5 / 10. Concomitant was of major concern in 5 patients

(71%). On a self-designed questionnaire to evaluate patient partner acceptance and satisfaction, six out of seven patients (86%) would recommend the prosthesis to others.

Conclusion: Indian penile prosthesis is associated with low complication rate and high mechanical reliability with high patient-partner satisfaction in terms of prosthesis function. It is technically easy to operate with minimal mechanical problems and economical treatment option (Cost Rs 7500 INR) for patients in lower economic strata who cannot afford imported penile prosthesis. The main drawback was concealment.

VID-04.03

Penile Autotransplantation in the Rat: Technique and Results

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Introduction and Objective: Penile allotransplantation might be a viable option for patients needing penile reconstruction. Basic questions need to be answered before contemplating clinical application. It is not known how transplantation and immunosuppression affect erectile tissue, urethra and penile growth. We herein evaluate autotransplantation of the rat penis cut distal to the urethral bulb as a first step towards proceeding for allotransplantation.

Materials and Methods: Five Sprague Dawley rats weighing 520 gm (SD 19) were used. The procedure was carried out under GA, in a sterile fashion, using heparin 100 iu/kg/ hour i.v. just before transaction of the penis and utilizing a magnification of 6 to 40. Anastomosis of the tunica albuginea, urethra, dorsal vein and nerves was carried out. A vesicostomy was made to divert urine. The glandular skin was sutured to the perineum and the abdominal wall closed in layers. A short video presentation will show the technique.

Results: Surgery time was 8 hours. The first 2 rats had no vesicostomy and died in the second postoperative day from retention and hypothermia. The rest of rats tolerated well the procedure and survived to the end point. One rat was sacrificed at day 10 and histopathology showed 30-50% necrosis of the implanted penis. Another rat was sacrificed at day 20 and showed normal cavernous tissue. The fifth rat was sacrificed 3 months postoperatively and showed evidence of moderate corporal fibrosis.

Conclusions: Penile transplantation in the rat is technically demanding but feasible and provides a viable animal model.

VID-04.04

Radical Prostatectomy with Minimum Blood Loss and No Incontinence

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Introduction and Objective: With the invent and popularity of endoscopic surgery, there are a lot of approaches for total prostatectomy either surgical or endoscopic. Also with the increase in longevity of life, the incidences of malignant prostatic carcinoma discovered are also on the increase.

Materials and Methods: Here the author wants to emphasize that the importance of surgical or endoscopic treatment of this malignant disease, no matter what procedure or approach is selected according to the operator's experience, it must fulfill the requirement of minimum blood loss without transfusion, complete excision of the malignant tumor under direct vision, and have no postoperative incontinence.

Results: Under this requirement in mind, the author has performed 95 cases of this operation with maximum blood loss not exceeding 350 ml and minimum blood loss of as little as 100ml, in recent 20 years.

Conclusion: Herewith the author wishes to share with you the processes with sketch illustration in every step of the operation in carrying out such operation with video presentation. It shows that how the intraoperative bleeding can be brought down to its minimum, and the method of how the bladder neck is re-anastomosed to the urethra for preventing postoperative urinary incontinence.

VID-04.05

Management of Complications During Laparoscopic Radical Prostatectomy

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Introduction and Objective: Rectal and obturator nerve injuries during radical prostatectomy are rare and serious complications. Their management during open surgery has been described. However, data about laparoscopic treatment is scarce. In this video, we describe two different cases of such major complications and their management.

Material and Methods: In one patient rectal injury occurred during postero-

lateral prostate surface detachment from the rectum. In another patient, during lymph node dissection, the right obturator nerve was inadvertently transected with harmonic scalpel.

Results: After identification of the injury, a double layer closure using 2-0 Vicryl suture was carried out. Rectal tube was inserted and sealing test was performed using air insufflation into the rectum. After minor debridement of the transected nerve edges, laparoscopic end-to-end re-approximation with five 5-0 nylon epineural stitches, was performed. The rectal injury repair was completed in 30 minutes and the obturator nerve re-approximation in 70 minutes. The total operative time was 210 and 250 minute respectively. The urethral catheter was removed on the 7 postoperative day in both cases. At 6 months' follow-up, full adduction strength of the right lower extremity was observed

Conclusions: Complications during laparoscopic radical prostatectomy may be managed safely laparoscopically.

VID-04.06

Continuous Watertight Vesico-Urethral Suture in Radical Retropubic Prostatectomy

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Introduction and Objective: The authors demonstrate the use of a continuous watertight vesico-urethral suture as used in Laparoscopic Radical Prostatectomy in a Radical Retropubic Prostatectomy.

Materials and Methods: Twenty-three patients were subjected to radical retropubic prostatectomy by a single surgeon. The mean patient age was 65 years. A 3-0 Monocryl® suture line was used as will be shown.

Results: The mean time to complete the suture was 20 minutes. Surgical drain withdrawal mean time was 24 hours post surgery and urinary catheter withdrawal was on the seventh post-operative day.

Conclusions: A continuous watertight vesico-urethral as is practice in laparoscopy is feasible and brings the advantages of laparoscopic radical prostatectomy to a technique with which most urologists are familiar.

VID-04.07**Impact on Urinary Continence Rates of Using an Open Antegrade Approach for Radical Prostatectomy**

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Introduction and Objective: Urinary incontinence following prostatectomy is a common problem and lowers a patient's quality of life. The early incontinence rates for conventional retrograde approaches have been reported as high as 80% at the day after removal of the urinary catheter. Urinary continence is dependent upon preservation of the sphincter muscle, which is commonly damaged when dissecting the apex of the gland during conventional surgical approaches. Using a non-conventional antegrade approach, careful apical dissection can more easily be performed. Using fine forceps, this approach allows better visualization and dissection of the small clump of the Santorini plexus. This helps avoid damage to the striated sphincter muscle. To measure the functional outcome, especially the recovery of earlier continence after radical prostatectomy using a non-conventional, antegrade approach.

Materials and Methods: A retrospective cohort observational study at a tertiary hospital in Tokyo, Japan was done to characterize mean operative blood loss and the incidence of urinary incontinence following retropubic radical prostatectomy using an antegrade approach on patients between April 2007 and September 2008. Patients previously treated with neoadjuvant hormonal therapy or transurethral surgeries were excluded. Urinary function analysis was abstracted from the medical records of the 124 patients who met inclusion criteria.

Results: The rates of being continence pad-free at 1 month and 3 months after the surgery were 75% and 95%, respectively. The mean postoperative urinary incontinence rate (calculated as (Incontinence volume / Total urine volume for 24 hours) x 100) was 0.42%. Complete urinary continence was achieved in 53 patients (43.8%) the day after removal of the urethral catheter. Mean operative blood loss was 750 ml.

Conclusions: Our technique of open antegrade radical prostatectomy provided higher early continence rates compared to retrograde prostatectomy previously reported. The antegrade approach allows

dissection of the apex to be the last step of gland removal. This may result in lower blood loss as well as more precise identification of the anatomical boundaries of the apex. This precise identification helps to minimize the risk of damaging the striated sphincter muscle. The ultimate result is a successful surgical outcome with a minimum of urinary incontinence.

Video Session 5: MIS, BPO, Reconstructive Surgery Tuesday, November 3, 13:30-15:10

VID-05.01**Robotic Repair of Rectovesical Fistula Secondary To Open Radical Prostatectomy**

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Introduction and Objectives: Rectovesical fistula is a rare entity that can develop after trauma, radiation, congenital diseases, inflammatory bowel disease, and open radical prostatectomy. Herein we present our experience with robotic assisted fistula repair.

Materials and Methods: Three patients were treated. The etiology of rectovesical fistula developed was open radical prostatectomy in all patients. The robotic procedure was preoperative following failed open repair in two patients, and primary in the third. All patients had previously undergone fecal diversion. The operative steps were as follows: (1) cystoscopy, (2) RVF catheterization (3) five-port transperitoneal laparoscopic mobilization of omental pedicle flap, (4) cystotomy extending towards to the fistula tract, (5) robot docking (6) dissection of the rectovesical plane, (7) interrupted rectal closure, (8) omental interposition, (9) bladder closure, (10) suprapubic tube placement (11) drain placement.

Results: Mean operative time was 153 minutes (range 120-180). No intraoperative or postoperative complications occurred. All patients remain free of fistula recurrence by cystographic studies at mean followup of ranging from 2 weeks to 10 months. Bowel continuity has been restored in 2 patients and is planned in 1.

Conclusions: While we await longer followup and experience in larger series, robotic repair of rectovesical fistula appears

feasible and represents an attractive alternative to open or laparoscopic approaches.

VID-05.02**Duplicating Open Principles: Retrograde Robotic Radical Prostatectomy**

Sotelo R¹, Carmona O¹, Astigueta J¹, De Andrade R¹, Canes D², Ramirez D¹, Di Grazia E¹, Fernandez G¹
¹*Instituto Medico La Floresta, Caracas, Venezuela;* ²*Labey Clinic Medical Center, Burlington, MA, USA*

Introduction and Objective: Minimally invasive approaches for treatment of localized prostate cancer are replacing the gold standard open surgical approach, duplicating its results with lower morbidity. Concerns have been raised regarding possible traction injury for an antegrade robotic or laparoscopic approach. To address this concern, we describe our initial experience with retrograde robotic radical prostatectomy. **Materials and Methods:** The steps are: transperitoneal port placement, posterior peritoneotomy, vas and seminal vesicle dissection, and rectum release. The bladder is then released from the anterior abdominal wall, endopelvic fascia and lateral prostatic fascia are incised, beginning the neurovascular bundle (NVB) release starting at the mid gland to the apex. A back-bleeding suture is placed, the dorsal venous complex is then ligated. The urethra is transected, apical dissection is completed and this plane joins the previously performed posterior dissection. The bladder neck is then dissected. The pedicle, now better defined in relation to the distal NVB and prostate contour, is divided. The NVB dissection is then completed. The urethro-vesical anastomosis performed.

Results: The retrograde approach to laparoscopic radical prostatectomy is feasible. Challenges in visualizing the apex can be overcome with a 30 degree down lens, and retraction on the back-bleeding stitch. Potentially, a precise apical NVB dissection is accomplished. The retrograde approach potentially avoids over dissection of the bundle beyond the urethra-prostate junction.

Conclusions: The retrograde robotic radical prostatectomy can be accomplished, and subjectively gives a meticulous dissection of structures believed to be important in optimizing the results of radical prostatectomy. Follow up of functional outcomes in patients undergoing this technique will ultimately answer important critiques of the antegrade approach.

VID-05.03**Concomitant Procedures During Robotic Simple Prostatectomy**

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Introduction: Laparoscopic and robotic-assisted simple prostatectomy has been described. However, the presence of associated pathology is traditionally an indication to consider open simple prostatectomy. We have recently performed robotic simple prostatectomy in the settings where ancillary procedures were required, including bladder diverticulectomy and inguinal hernia repair.

Methods: The first patient is a 64 year old man with large volume BPH and bilateral inguinal hernias. Serum PSA was 4.7 ng/ml, and transrectal prostate biopsy was negative for carcinoma. Following simple prostatectomy, bilateral mesh herniorrhaphy was performed robotically, followed by retroperitonealization of the mesh. The second patient developed a large left sided bladder diverticulum from longstanding bladder outlet obstruction. Robotic simple prostatectomy was preceded by bladder diverticulectomy, guided by simultaneous flexible cystoscopy.

Results: Operative time in case 1 was 150 min, and the pathologic specimen weight was 65 grams. The patient exhibited no signs or symptoms of hernia recurrence or mesh infection postoperatively. Operative time for case 2 was 120 min, with a specimen weight of 55 grams. Hospital stay was 2 days in both cases, and no intraoperative or postoperative complications occurred.

Conclusion: Performing concomitant robotic repair of associated pathology during robotic simple prostatectomy is safe and feasible.

VID-05.04**Optimization of Robotic Anatomical Radical Prostatectomy and Preservation of Neurovascular Bundles**

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Introduction and Objectives: Surgery must be carefully planned, going step by step. This is an anatomical and safe way of performing a correct approach from the very beginning. Following this principles, the procedure will be oncologically correct and very precise with the purpose

to preserve the sphincter and the nerves that are responsible of erectile function. Da Vinci robotic technology contributes with 3D vision. Surgical precision, better skills and improved ergonomics offer advantages for the quality of surgery. We have introduced a 3D anatomical map model in order to improve and facilitate surgery.

Materials and Methods: The approach undertaken by Fundació Puigvert is similar to open surgery, with some modifications to adapt prostate dissection to the Da Vinci robot. It has been applied in 250 cases since July 2005. We present a case of radical prostatectomy treated with a 3D anatomical map model.

Results: The surgical technique with the Da Vinci robot, is based on the anatomical optimization offered by the robot's vision as well as on the precision of the instruments when preserving the sphincters and the neurovascular bundles. The surgery is based on athermal and gentle dissection. In this particular patient the operative time was 1 hour and 50 minutes. Blood loss: 125 cc. Pathology was: pT2b, Gleason 3+4, negative margins.

Conclusions: To facilitate sphincter and neurovascular bundles preservation we have developed 3D anatomical map model, which allows standardisation and anatomical optimization of the Da Vinci robotic radical prostatectomy, thus improving both the oncological and the functional results.

VID-05.05**Robotic Prostatectomy with Tension Free Neurovascular Bundle Dissection and Santorini Plexus Preservation: A Better Surgical Alternative To Active Surveillance?**

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Introduction and Objective: The da Vinci robotic assisted laparoscopic radical prostatectomy (RALP) is increasingly performed worldwide, however there is no standard technique and no consensus on how to best preserve the neurovascular bundles. We report a new approach with transperitoneal RALP that aims to optimise preservation of the bundles, improving the continence and potency rates without compromising cancer clearance in a carefully selected cohort of patients.

Materials and Methods: Between July 2008 and January 2009 20 patients with organ confined prostate cancer underwent RALP using the new approach. In-

clusion criteria included a normal baseline 5-item International Index of Erectile Function score of between 22 to 25 and T1c prostate cancer Gleason score \leq 6 and low volume disease, PSA \leq 10, without signs of extraprostatic disease on MRI. Postoperatively pathological specimens were assessed for specimen weight, Gleason score, tumour volume, pathological stage and margin status. The incidence and location of positive surgical margins were recorded. All patients underwent RALP by the same senior surgeon. The operative technique is described step by step. Patients were assessed at 1 and 3 months to assess PSA levels, continence and potency.

Results: Mean age 55 (49-67 range), all were pT1 clinical stage, mean PSA was 7.2 (range 3.45-10). Operation time was 122 mins (range 105 -186 mins). Average blood loss was 150mls. On histology, mean prostate size was 38.5 grams (27-54 range). 50% patients had Gleason 3+3 and 50% were upgraded to 3+4, 90% were margin clear, both patients with positive margins were at the apex. At 1 month follow up 90% were totally continent without any pads. 70% of patients had achieved early erections with or without cialis at 1 month. At 3 months 80% had achieved erections and 95% were continent and pad free. All patients had unrecordable PSA levels.

Conclusion: In a carefully selected cohort of patients we have shown excellent potency and continence rates at 3 months by minimizing neurovascular trauma. We believe that this new approach optimises the advantages of RALP and can improve post-operative quality of life without compromising oncological outcome.

VID-05.06**Single-Port Transvesical Enucleation of Prostate (STEP)**

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Introduction and Objectives: We present the initial series of single port transvesical enucleation of the prostate (STEP) in 22 patients with large volume benign prostatic hypertrophy.

Materials and Methods: Between April and September 2008, 22 men underwent STEP using a transvesical approach under

pneumovesicum. A multichannel single trocar was introduced percutaneously into the bladder through a 2.5 cm skin, fascial and bladder incision under simultaneous cystoscopic vision. The adenoma was enucleated in its entirety transvesically under laparoscopic visualization using standard and articulating laparoscopic instrumentation. The adenoma was extracted through the vesicotomy.

Results: The surgery was technically feasible in all cases. The average age was 69 years old (57-89 years-old); the operative time was 106 minutes (45-360 min); estimated blood loss was 422 cc. (50-1500 cc). Digital assistance for enucleation was required in 42%. Complications included postoperative bleeding requiring reoperation in 2 cases, and bowel injury in one case from trocar injury. The hospital stays averaged 3.2 days (range 1-10), and the Foley catheter was removed on day 7 (range 4-12). The size of the incision was not more than 3 cm. The average adenoma specimen weight was 61.4 grams (range 36.5-212 g). AUA symptom score decreased on average from 19 to 3, and maximum flow rate from 8 to 40.

Conclusions: Our initial series of transvesical single port laparoscopy for simple prostatectomy is encouraging, and the technical problems are progressively being solved. The procedure is technically feasible and reproducible. Longer followup and experience in larger series will help determine the role of STEP in the treatment of BPH.

VID-05.07

How To Move Quickly Forward in Holmium Laser Enucleation Technique

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Introduction: The difficulties of this technique are well-known. Many colleagues take some first steps and then give up as they perfectly master the transurethral resection of the prostate, which in fact is quicker than the enucleation for smaller prostates. Every problem which may arise, will be definitely solved in the first 20 cases, taking into account that no prostate is the same as the previous one by any technique. We therefore present the differences between the first cases in relation with the ones carried out after the 20th, which is considered to be the learning curve.

Materials and Methods: Once the learning curve is over, we consider revising our first cases, to determine the moment

at which we reached it. 12 clips of different steps were selected in this technique, comparing the early cases with those near the 20th.

Results: We start with prostatotomy at seven o'clock. At the beginning it is difficult to distinguish the fibres of the capsule, which we have to reach to guarantee a correct plane. The deepening in the tissue has to be uniform. Doing the same on the other side, the medium lobe has no difficulty. In the first cases there is hardly any contact between fibre and tissue and the fibre is more in parallel to the tissue. Movements are not efficient. Once the medium lobe has been enucleated, the side lobe is delimited, starting from this lower plane with a "J" incision at the Veru level as a continuation of the prostatotomy. The following step is to perform an incision at twelve o'clock with the same features as that made with the prostatotomy. It will be done with reversed resectoscopy and reaching the capsule, which allows us to delimit the lobe by the upper side. Afterwards we turn the resectoscope to descend and contact the incision in "J" we have previously performed at the Veru level and then we complete the enucleation. Morcellation is the only step in which there is no learning curve. The smooth running of the equipment is sometimes the most difficult thing to get right.

Conclusions: Twenty cases are considered to be the standard learning curve for holmium laser enucleation. From then on, we should start increasing the size of the prostate to be enucleated.

VID-05.08

Holmium Laser Enucleation of the Prostate (HoLEP): Modified Technical Aspects

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Introduction and Objectives: Adoption of holmium laser enucleation of the prostate has been limited by its difficult learning curve, a limitation often stated by the urologists. In this video we describe the two lobe and three lobe techniques with emphasis on some technical aspects and the importance of blunt dissection.

Material and Methods: The multimedia description for the technique for HoLEP was recorded using a digital video endoscopic capture system (Stryker Corporation). Video clips from operations on two patients (one using the two-lobe technique and the other using the three-lobe technique for prostate 120 gm and 108

gm by TRUS respectively) were selected and saved in MPEG-2 format, and portions were clipped using Apple final cut pro studio 2 along with professional narration.

Results: HoLEP offers the advantages of less bleeding, decreased irrigation, catheterization and hospitalization times, and can be used to treat glands with no size limitation. It eliminates the risk for TUR syndrome with saline irrigation and can be used on critically ill patients and those receiving anti coagulation therapy. It has been shown to be more cost effective than open prostatectomy. Technical refinements in HoLEP technique described in this video decrease the operative time and the learning curve. HoLEP can be divided into four phases: inspection, enucleation, hemostasis and morcellation. Depending on the anatomy of the prostate, it is best to use one of two techniques for HoLEP. The two-lobe technique is the most frequently used. The three-lobe technique is used only when there is a large median lobe with deep grooves on both sides.

Conclusion: Our institutional experience has demonstrated that 20 cases on average are required for a trainee to feel comfortable with HoLEP. We hope this video will help to reduce the frustrations encountered during the learning curve of HoLEP by understanding the technical aspects of this procedure used for efficient enucleation of the prostate.

VID-05.09

Robot-Assisted Excision of a Mullerian Cyst with Anastomosis of the Vas Deferens to the Seminal Vesicle

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Introduction and Objective: Mullerian cyst of the vas deferens with ipsilateral renal agenesis is a rare condition. The choice of treatment depends on symptoms, which in turn are related to cyst size and location. Only two cases of robotic excision of seminal vesical cysts have been reported, with successful relief of symptoms and minimal morbidity. We report a case of symptomatic mullerian cyst of the vas deferens and ipsilateral renal agenesis that was successfully managed by surgical excision.

Materials and Methods: A 19 year-old man presented with lower urinary tract irritative symptoms. Ultrasonography and abdominopelvic magnetic resonance imaging (MRI) showed a 4 cm right pelvis cystic mass between the bladder and rectum

that was associated with an absent right kidney. Semen analysis revealed oligospermia. We use 3 arms, and one additional port suction, total 4 incision. Transperitoneal approach right mullerian cyst of the vas deferens was resected.

Results: Operative time was 90 minutes. The procedure was technically accessible and minimal blood loss being less than 100cc and a drain was placed for 48 hours. The patient was discharged the next day and he is currently asymptomatic.

Conclusions: Minimally invasive robotic-assisted excision of a mullerian cyst of the vas deferens is technically feasible, and should be considered for the treatment of this rare condition.

VID-05.10

Bulbar Artery Sparing During Reconstruction of Pelvic Fracture Urethral Distraction Defects (PFUDD) Gomez Illanes R, Catalan G, Marchetti P *Hospital Del Trabajador, Santiago, Chile*

Objective: Reconstruction of pelvic fracture urethral distraction defects (PFUDD) requires mobilization of the bulbar urethra to reach the prostatic apex. To achieve this, the bulb of the spongiosum needs to be separated from the perineal body, with division of the bulbar arteries. The distal urethral stump then becomes a flap, with retrograde irrigation from the glans and some perforating arteries. However in some cases, penile arterial supply is compromised by the pelvic fracture, resulting in penile arterial insufficiency. In such cases, ischemic necrotic failure of the urethral reconstruction has been reported. In this video we demonstrate a technique to preserve arterial blood supply to the bulb. **Patient and Methods:** A 23 year-old patient suffered a pelvic fracture after being struck by a bus, resulting in an extraperitoneal bladder rupture and a complete disruption of the posterior urethra. His bladder rupture was managed successfully with a suprapubic catheter and the urethra was reconstructed 4 weeks after injury. Surgical technique included traditional dissection of the bulb, but prior to its mobilization from the perineal body, the paired bulbar arteries were located using a hand-held Doppler ultrasound probe. In this case both bulbar arteries had good doppler signal; for surgical convenience, we elected to reflect the bulb to the left, and the right artery was divided to gain access to the deep perineum. The bulb was dissected and mobilized only from the right side, the scar was removed and the proximal prostatic

urethra was exposed as usual. No dissection was performed on the left side of the bulb to avoid injury to the left artery. The end-to-end anastomosis was then performed as usual. Preservation of bulbar arterial inflow coming from the left spared bulbar artery was proved by intraoperative Doppler ultrasound at the end of the procedure.

Result: Surgical time was 3 hours, and blood loss 150ml. After removing the urethral catheter the patient regained normal continent micturition. Erections were present prior and after the surgery. Follow up is 4 weeks at the time of submission.

Conclusion: Preservation of arterial blood supply to the bulb is desirable and feasible. To our knowledge, this technique has not been reported before; further studies and longer follow up are necessary to evaluate its benefits.

Video Session 6: Reconstructive Urology, Incontinence MIS Tuesday, November 3, 15:15-16:55

VID-06.01

Metoidioplasty as a One-Stage Gender Reassignment Surgery in Female-to-Male Transsexuals

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Introduction and Objectives: Metoidioplasty is a technique for creating small penis out of hormonally hypertrophied clitoris that enables voiding while standing. We present one stage female to male gender reassignment surgery that involves vaginal removal, clitoral lengthening and straightening, urethral reconstruction and scrotoplasty with testicle prostheses implantation.

Materials and Methods: A 31-year-old female transsexual underwent sex reassignment surgery. Vaginectomy is done by complete removal of vaginal mucosa. Following the clitoral degloving, fundiform and suspensory ligaments are completely divided to lengthen the clitoris. Additional lengthening and straightening are

achieved by division of short urethral plate. Bulbar urethra is reconstructed using anterior vaginal wall flap and remaining part of divided urethral plate ventrally. Urethra is lengthened up to the tip of the glans using buccal mucosa graft and labia minora flap. The glans is incised in two parallel incisions and both glans wings are dissected extensively to enable glans closure without tension. The penile shaft is reconstructed using the remaining clitoral and surrounding genital skin. The labia majora are joined in midline to create the scrotum and two silicone testicle prostheses are inserted.

Results: Three months after surgery good esthetic and functional results were gained. Good voiding while standing is also achieved.

Conclusion: Metoidioplasty as a single stage procedure is a time-saving and safe procedure. It is recommended whenever the size of the clitoris is adequate to satisfy the patient's desire to void in standing position and to have masculine-like external genitals.

VID-06.02

Muscle/Tunica Assisted Reconstruction in Complex Urethral Disease

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Introduction and Objective: Complex urethral disease is associated with altered penile and scrotal circulation and lost genital skin with multiple failed prior surgeries. Our objective was to evaluate gracilis muscle/tunica vaginalis as a graft bed and to evaluate buccal mucosa/preputial flap as a graft for neourethra in reconstruction of complex urethral disease.

Material and Methods: Four patients with complex urethral stricture (3 patients- redo end to end urethroplasty, 1 patient- multiple fistulas) were enrolled prospectively from September 2005 to May 2006. In 2 patients, gracilis muscle and in 2 patients tunica vaginalis (50% each) was used for the graft bed, on basis of excised callous tissue. For neourethra, in 1 patient preputial flap (25%), in 1 patient buccal mucosa (25%) and in 2 patients (50%) combined preputial flap and buccal mucosa was used.

Results: The mean age at presentation was 28.3 years. Mean length and breadth of Gracilis flap harvested was 11 cm and 6 cm respectively and of tunica vaginalis flap harvested was 13 cm. Mean harvest-

ing time for Gracilis was 50 mins and for Tunica vaginalis was 20 mins. Mean catheterisation time was 9 days Second stage - Mean time duration between first and second stage was 3.5 months. Mean length of preputial flap harvested was 10.4 cm of buccal mucosa was 12.7 cm. Mean graft harvesting time of buccal mucosa was 15 mins and of tunica vaginalis was 12 mins. Mean catheterisation time was 21 days. There were no significant complications during both stages. Average follow up was 11.5 months (1-21 months). Results were judged on basis of symptomatic improvement, urinary flow rate (UFR), RGU-MCU and urethroscopy and had significant improvement. One patient with preputial flap urethroplasty had anastomotic narrowing, which was managed by endoscopic dilatation.

Conclusion: Gracilis muscle flap and tunica vaginalis are reliable flaps with great potential for salvaging complex strictures and fistulas. They are relatively easy to harvest, possess reliable vascularization and can be transferred easily to perineum without tension or donor site morbidity. Preputial flap and buccal mucosa both are equally efficacious as neourethral plate with good postoperative results.

VID-06.03 Single-Stage Reconstruction of Multiple Urethral Strictures

Tsivian A, Benjamin S, Tsivian M, Sidi A
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Introduction and Objectives: Multiple strictures in different locations along the urethra pose an outstanding reconstructive challenge that requires a careful planning and perfect execution. In this video, we present the surgical technique and report our experience with a single-stage reconstruction of multiple urethral strictures with a systematic retrograde-antegrade approach using different tissue transfer techniques.

Materials and Methods: The phases of the surgical procedure include, in the lithotomy position:

1. Urethroscopy and identification of the distal stricture end.
2. Exposure and opening of the stenotic area.
3. Additional urethroscopy with identification of the proximal stricture end.
4. Exposure of the proximal stenotic area through a perineal approach, repair of the stricture and urethral catheter placement.
5. Repair of the distal stricture.

Results: Five men underwent synchro-

nous reconstruction of two urethral strictures. The age range was 50-79 years. Operative time was 2.5-3.5 hours. The proximal strictures, in the bulbar urethra, measured 1.5-2.5cm and were reconstructed with an end-to-end anastomosis. The distal strictures in the penile urethra measured 0.5-3cm, and were reconstructed by Orandi's technique in 2 cases, with a dorsal skin graft in another 2 and meatal reconstruction in one. During a follow-up period of 3-96 months all patients are satisfied with the outcome. Two patients, after 2 and 5 years, reported weakening of urine flow but did not require an intervention.

Conclusions: Single-stage reconstruction of multiple urethral strictures is feasible, safe and efficacious with a systematic retrograde-antegrade surgical approach. The outcome is similar to that of a single stricture repair of the same length.

VID-06.04 Optimizing Results of Suburethral Sling Operations Among Males Using Suburethral Hyaluronic Acid Injections

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Introduction and Objective: Suburethral sling procedures have become the gold standard therapy for male stress urinary continence resulting after radical prostatectomy or transurethral prostatectomy operations. So far, this technique has succeeded in reducing involuntary loss of urine by anywhere between 50 and 80%. Our aim was to further improve these results by the administration of hyaluronic acid injections in the suburethral region proximal to the external urethral sphincter.

Materials and Methods: This study included a total of 24 male patients who continued to suffer from SUI following radical prostatectomy or TURP despite undergoing suburethral sling procedures. The number of pads required per day by each patient was documented. All these patients were then given suburethral hyaluronic acid injections at the site of the external urethral sphincter in order to reduce the magnitude of their SUI. Clinical assessment was then based upon the number of pads required after the hyal-

uronic acid injections in comparison to the number of pads used before this treatment modality was instituted.

Results: Current literature has shown that male urethral sling procedures improve SUI by anywhere between 50 and 80%. However, by administering an additional treatment of suburethral hyaluronic acid injections, we are able to enhance these results by a further 20%. This means that grade II & III SUI use an average of 0 to 1.5 pads per day after instituting this additional therapy.

Conclusions: Suburethral injections of hyaluronic acid administered to our study group of post-operative male sling procedures have succeeded in reducing the daily use of pads from 5 pads to anywhere between 0 and 1.5 pads per day.

VID-06.05 Uterus-Preserving Sacropexy with Simultaneous Anti-Stress Incontinence Surgery in the Management of Advanced Uterovaginal Prolapse: Our Experience

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Introduction: Vaginal or abdominal hysterectomy is routinely performed in advanced uterovaginal prolapse despite the evidence for increased success of prolapse repair after hysterectomy is lacking. The addition of simultaneous anti-incontinence procedures to prolapse surgery is also debatable. In this study, we described our technique of abdominal sacrouteropexy (ASUP) with anti-incontinence surgery in patients with advanced uterovaginal prolapse and reviewed our mid-term results.

Methods: Twenty-one women (mean age: 61) with POPQ (pelvic organ prolapse quantification system) grade ≥ 3 underwent ASUP between 2004 and 2008. Patients were evaluated with history, pelvic examination, uroflowmetric studies, gynecology consultation, and pelvic organ prolapse quality of life (P-QOL) questionnaire. Through a midline vertical or Pfannenstiel incision peritoneum was entered and uterus was recognized. Rectovaginal plane was dissected until the levator plate, followed by interposition and fixation of a 4-5x15 cm prolene mesh to posterior vaginal wall. Vesicovaginal plane was then dissected until the bladder neck, a 4-5x15 cm prolene mesh was fixed to anterior vaginal wall, and bivalved at cervical level producing 2 arms, which were transferred

caudally under the uterine mesentery. At posterior cervical level, all meshes were transferred retroperitoneally to the pre-prepared sacral promontorium, and fixation was performed with soft non-absorbable sutures. Sixteen patients received simultaneous anti-incontinence surgery (13 transobturator tape-TOT, 3 Burch). Patients were assessed for voiding symptoms and P-QOL, and examined while standing during maximum strain at days 1, 7, 30, and 6 months thereafter.

Results: Mean operative time was 126 min (range: 110-180), mean hospitalization was 2.3 days (range: 1-4). Three of the five patients who did not receive anti-incontinence procedure initially received TOT for de-novo stress incontinence. Recurrent prolapse, stress incontinence or vaginal mesh extrusion was not evident in any case with a mean follow-up of 28 months (range: 6-52). P-QOL parameters improved significantly in all patients. De-novo urge was diagnosed in 1 patient who received TOT. One patient complained of dyspareunia.

Conclusion: Uterus-preserving ASUP is an effective technique for the management of advanced uterovaginal prolapse. The addition of anti-incontinence procedures seems as a viable strategy to decrease de-novo stress incontinence. Extraperitonealization of the mesh materials is of importance to avoid gastrointestinal complications.

VID-06.06

Robotic Partial Cystectomy with Distal Ureterectomy and Ureteric Reimplantation for Pheochromocytoma of Urinary Bladder

Gupta N, Nayyar R, Singh P

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Introduction: To present our experience with an extremely rare case of atypical bladder pheochromocytoma managed successfully with robot assisted laparoscopic surgery.

Methods: A 59 yrs male presented with constipation and tenesmus with no episodic hypertension, syncope, hematuria or lower urinary tract symptoms. Ultrasound and CECT showed a mass posterior to urinary bladder, indenting its wall and causing left hydronephrosis. Cystoscopic examination was done along with biopsy from the mass during which severe episodic hypertension and tachycardia were noted. Subsequent evaluation with 24 hr urinary metanephrines and normetanephrines confirmed pheochromocytoma.

MRI and MIBG scan were done to rule out other sites of pheochromocytoma. Alpha and beta blockers were started and hematocrit was optimized in preparation for elective surgery.

Results: Cystoscopic deep incision was given to define the margins of resection. 3 robotic ports and 3 assistant ports were placed. Patient position was then changed to steep trendelenberg. Transperitoneal robotic partial cystectomy, left distal ureterectomy and ureteric reimplantation was done using da Vinci-S robotic surgical system. Dissection was done with efforts to minimize tumor handling. Peritumor vessels were identified and ligated. There were no blood pressure fluctuations and it stabilized immediately after complete resection of tumor. Umbilical port was used for retrieval of the specimen in endocatch bag. Operative time was 152 min. Blood loss was less than 50 cc. A pelvic drain was kept for two days. Patient was discharged on third postoperative day and urethral catheter removed after two weeks. Histopathology confirmed pheochromocytoma of urinary bladder. All resected margins were free of tumor. At 6 months follow up, patient remains normotensive with normal MIBG scan and normal drainage on intravenous urogram.

Conclusion: Pheochromocytoma of urinary bladder is extremely rare. Atypical presentation with no hematuria, syncopal attacks or hypertension may occur. Robot assisted laparoscopic surgery provided a good approach for both excision of tumor and reconstruction of urinary tract.

VID-06.07

Robotic Partial Cystectomy for Urachal Adenocarcinoma: Results with Technique of Cystoscopically Optimized Surgical Margins

Nayyar R, Anand A, Gupta N

All-India Institute of Medical Sciences, New Delhi, India

Introduction: Bladder urachal adenocarcinoma is an aggressive disease requiring partial or radical cystectomy. Positive surgical margins increase the chances of local recurrence and effect the overall disease free survival. We present our experience with robotic management of this uncommon tumor, using cystoscopic markings as a guide to ensure 1 cm tumor resection margin.

Methods: Three cases of biopsy proven urachal adenocarcinoma were included in the study. Cystoscopy was done immediately before robotic partial cystectomy, and full thickness deep incision was given all around the tumor with the help of Col-

lin's knife. A trendelenberg position was used to aid in keeping the bowel away. Then 3 robotic ports and 3 assistant ports were placed for partial cystectomy and bladder closure. Position was changed to low lithotomy with steep trendelenberg and robot was docked. After dissecting the entire urachus from the anterior abdominal wall, bladder was opened. Cystoscopically marked incision on the bladder aided in ensuring a wide tumor free margin while saving the ureteric orifices.

Bladder was subsequently closed in two layers over a wide bore urethral catheter. Bilateral pelvic lymphadenectomy was done in all cases and specimen was retrieved in an endocatch bag.

Results: Transperitoneal partial cystectomy was done using da Vinci-S robotic surgical system in 3 cases. Total operative time including cystoscopy was 182 min. Blood loss was less than 100 cc. A pelvic drain was kept for two days. Patients were discharged on third postoperative day and urethral catheter removed after two weeks. Histopathology confirmed urachal adenocarcinoma. All resected margins were free of tumor. At an average follow up of 8 months, patients remains clinically asymptomatic with no recurrence.

Conclusion: Cystoscopic optimization of resection margins may be a useful adjunct for improving margin free rate in robotic partial cystectomy for urachal adenocarcinoma.

VID-06.08

Robotic Adrenal Sparing Surgery for Pheochromocytoma

Nayyar R, Gupta N, Singh P, Anand A
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Introduction: To assess feasibility and efficacy of robotic tumor excision with sparing of normal adjacent adrenal parenchyma for management of pheochromocytoma.

Methods: Three cases (2-right, 1-left) of metabolically active adrenal pheochromocytoma were included in the study. A standard preoperative preparation was done for surgery. All cases were done using 4 ports (3 robotic, 1- assistant) through the transperitoneal route. Colon was reflected down. Dissection was first done on medial side of the tumor and all draining veins were ligated, with minimal tumor handling. Tumor was then excised with an effort to spare the adjacent normal parenchyma, taking care not to breach the tumor pseudocapsule. All intraparenchymal vessels were individually li-

gated with laparoscopic clips. Specimen was removed in an endocatch bag.

Results: 2 female and 1 male patient underwent robotic adrenal sparing excision of pheochromocytoma. Average operative time was 67 min with blood loss of less than 50 cc. Resumption of oral feeds was done after 6 hours in all cases. Mild intraoperative blood pressure fluctuations were noted in one case. There were no perioperative complications. Average hospital stay was 2 days. Average analgesic consumption was 75 mg of Diclofenac sodium. Histopathology confirmed pheochromocytoma in all cases with free surgical resection margins. Average follow up is 5.5 months with no evidence of recurrence or extra-adrenal tumor on 3 month MIBG scan. The repeat functional evaluation was also normal.

Conclusion: Robotic assisted excision of adrenal pheochromocytoma is feasible, safe and efficacious in our early experience. Sparing of the normal adjacent adrenal parenchyma is possible with little detrimental effect on the oncological efficacy of the surgery. Long term studies are needed to further confirm this issue.

VID-06.09

Another Application of Natural Orifice Transluminal Endoscopic Surgery (NOTES): Transurethral Transvesical Approach to a Retrovesical Hydatid Cyst

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Objective: Usually, open surgery is the recommended treatment of hydatid cyst. We present a novel technique for treatment of a retrovesical hydatid cyst using a transurethral transvesical approach.

Material and Methods: Mr. M. A., 57 years, had a retrovesical hydatid cyst diagnosed by ultrasound, for irritative bladder symptoms (LUTS), confirmed by CT scan and serology test. He had received 800 mg daily of albendazole during 3 months prior to operation.

Operative technique: under spinal anesthesia, cystoscopy was performed using a 20.8 Fr nephroscop. The cyst was punctured using 18-gauge needle, passed through the nephroscope operating channel. A 20 % saline solution was used as a scolicidal agent. The tract was dilated using balloon dilation over a guide wire. Then, the nephroscope was introduced into the cyst, and the hydatid material was aspirated. The cystic cavity and the

bladder were drained using respectively a 14 Fr Foley catheter and 18 Fr Foley catheter. Postoperatively, the cystic cavity was treated by instillation of iodine-polyvidone during 5 days.

Results: Endoscopic treatment of retrovesical hydatid cyst was possible in 40 min. no complication was noted postoperatively. The patient had an uneventful discharge and had continued albendazole chemotherapy during 3 months. At 3 months postoperatively, cystoscopy confirmed a complete healing of the communication between the bladder and the cystic cavity. After two years of follow-up with ultrasound and CT scan, the patient was free of symptoms with no evidence of residual or recurrent disease.

Conclusion: This transurethral transvesical approach was effective for the treatment of a retrovesical hydatid cyst with lower morbidity than open surgery, and confirmed that the bladder can be used as a portal to NOTES with no complications.

VID-06.10

Pull-Through Hydrocelectomy: Description of a Novel Minimally Invasive Technique for Idiopathic Hydrocele

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Introduction: Conventional surgical procedures remain the standard of care for management of idiopathic hydrocele, with durable success and low incidence of recurrence. These procedures may however cause postoperative discomfort, temporary limitation of normal activities, as well as hematoma, infection, persistent swelling, chronic pain, and reduced fertility. We herein described a new technique in an effort to reduce these complications.

Methods: Between April 2004 and November 2008, 38 patients (mean age: 46 years, bilateral in 1) with idiopathic uncomplicated hydrocele underwent hydrocelectomy. Under local anesthesia, through a 15 mm transverse scrotal incision dissection was carried until tunica vaginalis parietalis. Tunica was grasped on each side of incision, the sac was minimally punctured and a small volume of fluid was aspirated to relieve the tension of the scrotum. Under gentle traction, the sac was bluntly dissected from adherent tissues, with gradual delivery of the whole sac out of the scrotal incision. During dis-

section, hydrocele sac was aspirated intermittently to facilitate easy delivery of the sac. Tunica vaginalis was then excised circumferentially by electrocautery at its base under full visualization of testicular structures. The wound was closed without leaving any drains and scrotum was elevated by a light scrotal suspensory bandage for 2 days. All patients were discharged within 24 hours and were followed at 6 monthly intervals (mean: 26, range: 6 to 54).

Results: Mean operative time was 34.3 minutes. Mean aspirated fluid volume was 245 ml (range: 120 to 900 ml). Postoperative hematoma or wound infection was not evident in any case. Mild scrotal edema usually subsided within a few days postoperatively. In 5 patients with persistent edema and hardening of the scrotum, the condition was resolved with additional bed rest and anti-inflammatory drugs. Patients could resume their normal daily activity at an average of 6 days after surgery (range: 3 to 21). The procedure was successful in 37 (97%) patients.

Conclusion: The present technique enables to remove large hydrocele sacs through a small incision under direct vision of testicular structures. It is a viable option in the management of idiopathic hydrocele in terms of low risk of complications and early return to daily activities.

Video Session 7: Oncology: Bladder, Kidney Wednesday, November 4 13:30-14:50

VID-07.01

Robotic-Assisted Extrafascial Radical Cystoprostatectomy and Intracorporeal Ureteral Wallace Technique Anastomosis

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Introduction: Radical cystectomy is the gold standard for invasive urothelial cell carcinoma. The benefits of laparoscopic surgery such as decreased blood loss, pain and better cosmetics are pushing urologists to laparoscopy. Short- and intermediate-term oncologic outcomes are comparable to open surgery. The application of robotics in pelvic surgery (radical prostatectomy) has pushed urologists to also perform radical cystectomy. We present a radical cystoprostatectomy, lymphadenec-

tomy and intracorporeal ureteral Wallace technique anastomosis.

Material and Methods: A 77 year-old male, with erectile dysfunction and with an invasive urothelial carcinoma of the bladder high grade stage T2 at TUR. The patient was positioned in a steep Trendelenburg position, as in da Vinci prostatectomy, with similar port placement, but with port of the camera a few cm higher. We performed an incision of the reflection of the peritoneum and the Denonvilliers fascia, once the lateral bladder plane has been opened. We used the ligasure to proceed to the section of the bladder and vesicoprostatic pedicles. Then the neurovascular bundles were completely transected, and the plane between the prostate and rectum was easily obtained until the apex. Control and sectioning of the Santorini's plexus. Closure of the urethra with an Hem-o-lock. A bilateral lymphadenectomy was done. The left ureter was passed under the mesocolon and anastomosed to the right ureter with the Wallace technique. Then we proceeded to an extracorporeal ileal conduit with a small infraumbilical laparotomy (not shown in the video).

Results: Operative time was 5 hours. Blood loss 400 cc. The pathology was pT0, lymph nodes (7) negative, high grade PIN in prostate. The patient was discharged at 8th postoperative day.

Conclusions: Our initial experience with robotic-assisted prostatectomy allowed us to apply the same principles in the management of neurovascular bundles and pedicles in radical cystoprostatectomy. Also allows a good lymphadenectomy and the possibility to perform intracorporeal ureteral anastomosis. Our good short-term clinical outcome, and the technical possibilities allow us to advocate to continue with this approach. Further refinements and experience, and more patients will finally validate this procedure.

VID-07.02

Pre-Peritoneal Laparoscopic Partial Cystectomy of Bladder

Pheochromocytoma

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Objective: The objective of this study was to review the diagnosis and treatment of bladder pheochromocytomas.

Material and Methods: A 34 year-old male presented to our clinic with a 2-year intermittent history of dizziness, palpitation and chest distress after voiding, which got

worse for last 9 days. He had no remarkable past medical history including hypertension and chronic preoperative medication. It was subsequently found that his blood pressure got elevated up to 190/120 mmHg and heart rate rose to 90 /min after voiding. However, after a period of 10 minutes, his blood pressure dropped to 120/70 mmHg and the heart rate decreased to 70 /min and the patient became asymptomatic. Apart from a slightly elevated plasma level of nor-epinephrine 1.957 pmol/ml (range 0.883 - 1.091); plasma epinephrine, dopamine and 24hr urinary VMA were all within normal range. During cystoscopy examination, a 2 cm solid tumor was found protruding from the left posterior wall of the bladder. CT scan of urinary bladder revealed a solid mass within the left posterior wall.

Results: Under general anesthesia, the patient was placed in the Trendelenburg position and catheterized. A 4-port extraperitoneal approach was used. A small cystostomy was performed at the posterior aspect of the urinary bladder aiming to inspect the tumor area inside the bladder. The cystostomy was repaired, using a 2-0 absorbable suture in a single layer. Distension of the bladder with fluid at the completion of the repair showed no anastomotic leakage. A 22F Foley catheter was placed transurethrally into the bladder. Total surgical time (including laparoscopic excision of the tumor with bladder reconstruction) was 90 minutes. Estimated blood loss was less than 30 ml. Patient did not complain of micturition induced symptoms like dizziness, palpitation and chest distress following the surgery and his blood pressure and pulse remained normal through out the hospital stay. Final pathology report was consistent with pheochromocytoma of the urinary bladder.

Conclusions: We report a case of pheochromocytoma of urinary bladder managed by LPC (pre-peritoneal approach). Potential advantages of this technique are lower post-operative morbidity, faster gastrointestinal function recovery and faster post operative recovery.

VID-07.03

HAL Blue Light Fluorescence TURB: The "Better Choice" in Non-Muscle Invasive Bladder Cancer?

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Introduction: According to the literature data, hexaminolevulinate (HAL) blue light cystoscopy (BLC) improves the bladder

tumors' detection rate by comparison to white light cystoscopy (WLC). The technological progress in fluorescence imaging is beginning to impose blue light transurethral bladder resection (BL-TURB) as an efficient treatment modality.

Methods: Between December 2007 and December 2008, WLC and BLC were performed in 70 cases suspected of bladder cancer. White light (WL) TURB was performed for all lesions visible in WL, followed by BLC aiming to determine the presence of residual tumors. BL-TURB was performed for lesions only visible in BL. **Results:** BLC provided additional diagnostic information in 42 cases (60%). In 26 patients (37.1%), BLC emphasized 33 additional tumors (16 CIS and 17 pTa). Ten cases (14.2%) presenting 19 tumors (10 CIS and 9 pTa) were diagnosed with bladder cancer only by BLC. After WL-TURB, the residual fluorescent margins of 7 tumors (1 pTa, 5 pT1 and 1 pT2) were identified in 6 cases (8.5%), their complete ablation being achieved by BL-TURB. In 4 patients (5.7%), 8 malignancies (2 CIS and 6 pTa) visible in WL presented no fluorescence in BL.

Conclusion: HAL BLC is a valuable procedure in bladder cancer diagnostic, with a considerably improved detection rate by comparison to WLC. Consequently, BL-TURB significantly increases the accuracy of the endoscopic resection.

VID-07.04

Laparoscopic Nephrectomy in Acute Wunderlich Syndrome

Peña J, Pascual M, Serrano M, Gaya J, Rodríguez Ó, Esquena S, Rosales A, Palou J, Villavicencio H
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Introduction: Wunderlich Syndrome is the presence of spontaneous retroperitoneal hemorrhage. Generally, it is secondary to an angiomyolipoma or a kidney cancer. We present the video of a laparoscopic nephrectomy in an acute Wunderlich Syndrome. As far as we know, there is no previous report of this surgery in the literature.

Materials and Methods: We present the case of a 62 year-old female admitted because of right flank pain for 3 days. She had medical history of iodine contrast allergy, dyslipidemia, laparoscopic hysterectomy and laparoscopic left hemicolectomy 6 months ago. Previous to admission, she had been diagnosed by CT scan of a right upper pole mass of 5.5×5.0 cm of diameter suggestive of angiomyolipoma. At emergency she remained haemodynamically stable but 24 hours later there was a

marked decrease of haemoglobin that needed blood transfusion. Surgical treatment was decided. A laparoscopic transperitoneal approach was performed (4 trocars). The artery was controlled with a hemolock and the vein with an endoGIA. **Results:** Surgical time was 250 minutes and blood loss was 2000cc. The weight of the kidney was of 1500 gr. with an external surface of 14×10 cm. The pathology revealed an angiomyolipoma. She required transfusion of 7 concentrates of erythrocytes during all hospital stay. Blood test at discharge and five days after surgery were hemoglobin 117gr/l and creatinine 93μmol/L.

Conclusions: The laparoscopic approach is feasible in acute Wunderlich Syndrome. Although the surgical time was long, recovery was satisfactory.

VID-07.05

Laparoscopic Nephrectomy in Atrophic Kidney with Perinephritis: Surgical History of Radical Cystoprostatectomy with Ileal Conduit and Radiotherapy

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Introduction and Objective: Perinephritic abscess is usually associated to a corticomedullary intra nephritic abscess rupture. This fact usually can be seen in patients with previous urological surgery or urolithiasis. The most frequent symptoms are fever and flank pain. After a perinephritis abscess diagnosis by ultrasonography or CT scan, patient should receive intravenous broad spectrum antibiotics and percutaneous drainage. Surgical drainage or nephrectomy in non-functional kidney or if severe infection exists, is the election treatment. After the perinephritic abscess has been incised and drained and once patient's performance has improved, is necessary searching for the underlying problem and perform surgery. Laparoscopic approach has been confirmed as the best surgical access for kidney pathology.

Materials and Methods: We present a 64 year-old man who had undergone a radical cystoprostatectomy with ileal conduit in 1999 due to muscle-invasive bladder cancer (PT2G3N1+Cis) with adjuvant radiotherapy and chemotherapy. In July 2008, the patient was admitted because of left flank pain and fever. CT scan showed left multilocular perinephritic collection measuring 13×10 cm. This collection was treated with percutaneous drain-

age and antibiotic therapy. Three months later, a left elective laparoscopic nephrectomy was performed.

Results: Total operative time was 320 minutes with an estimated blood loss of 600 ml. Kidney weight was 1200g. The postoperative period was correct, without complications and patient was discharged 3 days after surgery. Pathology reported chronic inflammation, nephrocalcinosis and lithiasis.

Conclusions: Laparoscopic approach of atrophic kidney with perinephritis is feasible. Previous surgeries or radiotherapy are not a contraindication for laparoscopic approach.

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Methachronous Bilateral Adrenal Metastasis and Retroperitoneal Lymph Node Recurrence of Renal Cell Carcinoma after Right Nephrectomy: Transperitoneal Laparoscopic Approach

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Introduction: Local recurrence or adrenal metastasis of a renal carcinoma is the only curative approach. Since this is an uncommon situation, there are very few cases treated with a laparoscopic approach. We present a double transperitoneal approach to treat a methachronous bilateral adrenal metastasis and retroperitoneal lymph node recurrence of a renal cell carcinoma after right nephrectomy.

Material and Methods: We have treated in our center 18 local recurrences of renal cancer. Four cases have been treated with laparoscopy in the last years. We present a 78 years old female with a past history of hypertension, hyperlipidemia and open colectomy. She underwent an open nephrectomy in December 2001 for a 7 cm mass in the right kidney. The pathology was clear cell renal carcinoma, Fuhrman grade II stage pT2. Six years later, a control CT scan revealed a bilateral adrenal enlargement of 6.6 cm of the right and 4.8 cm of the left one. She also had a lymph node enlargement lateral to the vena cava of 2 cm. We performed a standard left transperitoneal laparoscopic adrenalectomy and secondly, three months later, we removed the right adrenal metastasis and the lymph node recurrence by another transperitoneal laparoscopic approach.

Results: Related to the two surgeries the operative time was 180 and 300 minutes, and the bleeding was negligible and 350 ml respectively. Postoperative stay was 2 and 5

days. Surgery of the right side was more complex due to bowel and liver adhesions from the previous right nephrectomy and colectomy. Trocars were introduced under direct vision using the open technique. Placement of the last trocar required of a right flank access to place the camera and dissect the adhesions intracorporeally, finally we went through the abdominal wall with our grasper using it as a guide for placing the trocar safely. The dissection of the mass, in both sides, was not especially complex as it was not too attached to the adjacent vessels. The result of the pathology was Clear cell renal carcinoma metastasis, Fuhrman II for the left and III for the right side.

Conclusions: Surgery remains the treatment of choice for kidney cancer recurrence. Laparoscopic surgery in small recurrences of renal cell carcinoma is feasible and it can be considered as a treatment option in centers with experience in urological laparoscopy.

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Partial Laparoscopic Nephrectomy in T1a Intrarenal Tumor

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Introduction and Objective: We present the case of a patient with an intrarenal tumor T1a applying the same surgical protocol utilized for more favourable cases or of less complexity.

Material and Methods: A partial laparoscopy retroperitoneal nephrectomy is performed in a patient with a solid 3 cm. tumor in the superior pole in an intrarenal situation of the left kidney. A 54 year-old male patient, asymptomatic whose diagnostic was realized by a routine XR exam. Because of the location of the tumor the access was retroperitoneal with previous ureteral catheterization. Surgical technique: hilar dissection; mobilization and wide exposition of the kidney; delimitation and outline of parenchymal to resect; clamping of renal arterial and vein; resection; repair of urinary tract; frozen biopsy of the tumor bed and haemostatic suture of the kidney.

Results: The surgical procedure took 120 minutes with a warm ischemia of 50 minutes. The frozen biopsy of the tumor bed came negative for tumor. He was hospitalized for 72 hours being discharged with a pigtail ureteral catheter and a Foley for 10 days. The biopsy revealed an hypernephroma of clear cells Fuhrman grade 3, surrounded by 2mm of normal tissue. The

patient has completed 2 years of follow up without evidence of recurrence and with normal kidney function.

Conclusions: The partial laparoscopic nephrectomy is an option for the treatment of T1a renal tumors. In this difficult case, the rigorous surgical protocol standardized by our team that offers similar technique as in open surgery, was very important.

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Laparoscopic Partial Nephrectomy for Tumour in a Transplanted Kidney

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Introduction and Objective: Incidence of tumour formation in a transplanted kidney is higher. The same indications for kidney tumors in lonely kidneys is applied for transplanted kidneys. Kidney dissection is more difficult due to inflammatory reaction and changes around it. We

present the images of a laparoscopic partial nephrectomy for tumour in a transplanted kidney.

Materials and Methods: A 56 year-old female with cadaveric renal transplantation 8 years before, with creatinine levels of 90 mmol/ml, was diagnosed with a tumour in the transplanted kidney by CT scan. Tacrolimus and steroids were her immunosuppressant treatment at that time. Laparoscopic partial nephrectomy was offered; placement of patient in left lateral position, transperitoneal approach, opening of peritoneum at level of upper kidney pole, with progression to dissect ureter, common and external iliac arteries to expose for clamping. Intraoperative ultrasound assessment confirmed cystic and solid components of the tumour not involving the collecting system. Laparoscopic Satinsky renal artery clamping helps in the resection of the tumour with monopolar cautery. Complete renal ischemia was not achieved due to retrograde flow from femoral artery, with constant

bleeding from the incise surface. Collecting system was opened. FloSeal, Bioglue and Surgicel were used for hemostasis. Tumour was extracted using a 10mm EndoCatch.

Results: Total OR time was 160 min. Blood loss was 400cc. Renal ischemia of 32 min. No blood transfusion required. A low-flow urinary fistula appeared but resolved spontaneously. Drain was removed the 5th day. There was a postoperative stay of 7 days. Creatinine at discharge was of 98 mmol/ml. Tacrolimus was changed to Rapamycin and continued on low dose steroids. Pathology specimen showed PT1aG3 type 2 papillary renal cell carcinoma with extensive necrotic component with free margins.

Conclusions: Laparoscopic partial nephrectomy can be an alternative in selected case for renal tumours in transplanted kidneys. The tumour location, size, and amount of perirenal fibrosis are the most important selection criteria.