Moderated Video Session
June 29, 2009, 1630–1800

VID-01

Transurethral laser enucleation of the prostate — 2-year experience

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Introduction and Objective: The transurethral PVP has been proven to be a safe and effective procedure for treating BPH. In this video we describe a new PVP technique, the transurethral laser enucleation of the prostate (TLEP). Our objective was to demonstrate the technique, essentially a hybrid between holmium laser enucleation of the prostate (HoLEP) and TURP, and assess long-term safety and efficacy of the procedure in patients with 2 years of follow-up.

Materials and Methods: A 532-nm laser PVP using the TLEP method was performed on 276 evaluable patients between May 2006 and July 2008. Preoperative data were collected including International Prostate Symptom Score (IPSS), maximum flow (Qmax), postvoid residual (PVR), PSA, and prostate volume. All patients also underwent urodynamic testing prior to the procedure. Follow-up visits were scheduled at 1, 3, 6, 12 and 24 months. At each visit, patients provided a uroflow, PVR, and IPSS. Prostate-specific antigen was measured at 12 and 24 months.

Results: Mean patient age was 70.33 (range 38–92) years. At baseline mean IPSS was 17.93 (1–35), mean PSA was 4.48 (0.01–43.5) ng/dL. Mean Qmax was 8.8 (0.9–25) mL/s. And mean PVR was 136.01 (0–838) mL. Mean ASA score was 2.21 (range 1 6). Preoperative mean prostate volume was 90.97 (18.3–288) g. Mean laser time was 62.75 (2–302) minutes. The complication rate for the procedure was very low. Following the procedure 5 patients went into retention, 1 developed urosepsis and 1 patient had bleeding that necessitated a second-look procedure. Not a single patient required blood transfusion. After 2 years, mean improvement in IPSS was 64.25% and in mean Qmax was by 74.46%.

Conclusion: The new TLEP technique of laser PVP is a safe and effective procedure for BPH treatment with durable outcomes.

VID-02

The anterior approach to right retroperitoneoscopic adrenalectomy in children

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Introduction and Objective: Very limited data exists about minimally invasive techniques for adrenalectomy in children. Retroperitoneal adrenalectomy (RPA) has the potential advantage of avoiding intra-abdominal organ retraction but, concerns have been expressed with the lateral RPA on the right side. Zhang and colleagues (*J Urol* April 2007) have described a novel anterior RPA approach which appears to overcome the limitations of the lateral approach. Herein, we describe the second reported experience with the anterior approach to right RPA in a child.

Materials and Methods: An 8-year-old child presented with an incidentally discovered 6-cm right suprarenal mass and elevated serum aldosterone. The patient was placed in the lateral decubitus position with lumbar hyperextension. A 5-mm, 3-port approach was used. The retroperitoneal space outside Gerota fascia is developed under direct vision, from the common iliacs up to the diaphragm. The first fascial plane of dissection is developed anterior to the upper pole of the kidney thus revealing the anterior surface of the adrenal. The second plane of exposure is the inferior surface of the adrenal followed by medial exposure of the vena cava and adrenal vein. After division of the adrenal vein the remaining superior attachments which were suspending the gland are divided. Since the adrenal is suspended by its superior attachments throughout, no manipulation of the gland is required. The gland is placed in an entrapment sac and the posterior port extended to permit intact retrieval of the specimen.

Results: Pathology revealed a 7-cm ganglioneuroma. Operative time with this large mass and first experience with this technique was 5 hours. No intraoperative or postoperative complications were noted, with minimal blood loss and hospital stay of 36 hours.

Conclusion: The anterior approach to right RPA is feasible even in children with a smaller retroperitoneal space and a large adrenal mass. It seems to provide superior exposure of the adrenal gland and vein compared to the lateral RP approach, as suggested by Zhang and colleagues in their experience with 800 cases.

VID-03

Bilateral laparoscopic ureterolysis: contemporary technique for idiopathic retroperitoneal fibrosis

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Introduction and Objective: Ureteral obstruction secondary to benign disease occurs infrequently. The most common cause of benign extrinsic ureteral compression is idiopathic retroperitoneal fibrosis (Ormond disease). Traditionally, open ureterolysis with or without intraperitonealization of the ureters and omental wrapping was the preferred surgical management option. Laparoscopic ureterolysis has emerged as an attractive treatment alternative for select patients with retroperitoneal fibrosis and subsequent ureteral obstruction. In this video, our contemporary technique of laparoscopic ureterolysis is reviewed.

Materials and Methods: A 53-year-old female presented with bilateral hydroureteronephrosis and renal insufficiency secondary to idiopathic retroperitoneal fibrosis. The surgical technique of bilateral laparoscopic ureterolysis with intraperitonealization of ureters is presented.

Results: Several centers have reported on their experience with laparoscopic ureterolysis for idiopathic retroperitoneal fibrosis. Success rates are similar to open ureterolysis (92%–100%) although long-term follow-up is lacking.

Conclusion: Laparoscopic ureterolysis is technically feasible and offers a minimally invasive alternative for selected patients. This procedure can offer shorter convalescence and reduced patient morbidity with equivalent efficacy when compared to open surgery.

VID-04

Laparoscopic transmesocolic pyelolithotomy

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Introduction and Objective: We describe the case of a 53-year-old man presenting with a 2.5-cm stone in the left renal pelvis and a 1-cm stone in the inferior calyx. The patient required the treatment of the stones in a single procedure.

Materials and Methods: After induction of the pneumoperitoneum with a Veress needle one 12-mm optical trocar and three other 5-mm trocars were inserted. In this case the descending colon was very adherent to the abdominal wall. Therefore a transmesocolic access to the left renal pelvis was preferred. The renal pelvis was isolated from the surrounding fat tissue taking attention to spare the colonic vessels. The renal pelvis was opened and the large stone removed. A flexible cystoscope was inserted into the renal pelvis through a 12-mm trocar to explore the renal calyces. The 1-cm stone in the inferior calyx was then removed with a basket. The stones were finally removed in an endobag. A double J ureteral stent was placed before closing the renal pelvis in an interrupted fashion.

Results: A retrograde cystography on postoperative day 5 showed left

vesicoureteral reflux without leakage of contrast medium. The patient was discharged stone-free on postoperative day 5 and the ureteral stent was removed 20 days after the procedure.
Conclusion: Laparoscopic pyelolithotomy is a procedure to be considered in case of complex or multiple large renal stones. This technique is minimally invasive and allows a complete treatment of the stones in a single procedure.

VID-05

Seeing the light: endoscopic-assisted laparoscopic radical prostatectomy — a novel technique to aid in bladder neck and apical dissection?

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Introduction and Objective: Bladder neck and apical dissection planes can be difficult to identify, with competing goals of achieving negative surgical margins while maintaining neurovascular bundles and continence mechanisms. We theorized that endoscopic visualization of the verumontanum, urethral sphincter and the bladder neck during laparoscopic or robotic radical prostatectomy may facilitate identification of ideal tissue dissection planes to optimize oncologic and functional outcomes. This video is intended to demonstrate feasibility of this concept.
Materials and Methods: Laparoscopic radical prostatectomy was performed using an antegrade, intraperitoneal technique. Using concomitant laparoscopic and cystoscopic visualization and video recording capabilities with separate video towers, we performed bladder neck and urethral dissection after intermittently positioning the cystoscope at the bladder neck and just distal to the verumontanum. During dissection, the laparoscopic light source was dimmed such that the cystoscopic light was well visualized and used to help demarcate dissection margins.
Results: With the laparoscopic light adequately dimmed, identification of the prostatovesical junction was aided by movement of the cystoscope across the bladder neck, resulting in transillumination of the bladder but not the prostate. Similarly the location of the urethral sphincter, verumontanum and prostatic apex relative to the apical dissection was aided by cystoscopic visualization and transillumination of the membranous urethra. This has the potential to aid in difficult cases such as those with prior urethral procedures (TURPs), poor visualization, median lobes or aberrant apical anatomy. This procedure did require an assistant to manoeuvre the cystoscope into the appropriate position during the bladder neck and urethral dissection.
Conclusion: This video demonstrates a novel approach to aid dissection of the bladder neck and apex during laparoscopic radical prostatectomy, which may aid in improving surgical margin rates and postoperative continence. Further studies evaluating these outcomes in a properly designed trial are warranted.

VID-06

Accelerated continence recovery after robotic prostatectomy: lessons learned from 3 techniques in 1294 patients

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Introduction and Objective: The cumulative lessons learnt from our cohort of patients undergoing robotic-assisted radical prostatectomy have led us to develop a paradigm based on anatomical restoration of the bladder neck and key periprostatic support structures for delivering accelerated return of continence. We present a video demonstrating these key principles.
Materials and Methods: Between Jan. 1, 2005, and July, 30, 2008, 1294 consecutive patients underwent da Vinci robotic-assisted radical prostatectomy (RARP) by a single experienced high-volume surgeon. Of these, 214 underwent conventional vesicourethral anastomosis (CA); 303 men underwent anterior reconstruction (AR) only; and 777 men underwent total anatomical restoration (TR). Outcomes data were collected in an IRB-approved protocol using standardized health-related quality-of-life measures, including the EPIC, IIEF, and then reverified by third-party telephone interview with a standardized questionnaire. Patients were followed up at 1-, 6-, 12-, 24- and 52-week intervals. We defined continence as patients requiring no pads or one small liner for occasional dribble.
Results: Continence rates at 1, 6, 12, and 26 weeks following robotic assisted radical prostatectomy were 15.2% v. 29.9% v. 30.8%, 40.8% v. 64.9% v. 70.0%, 58.2% v. 84.7% v. 91.8%, and 72.30% v. 95.2% v. 99.1% in the CA, AR and TR groups respectively ($p < 0.001$). The total reconstruction cohort demonstrated significantly improved continence outcomes in all time periods compared to the control and anterior reconstruction cohorts ($p < 0.01$).
Conclusion: Our anatomical restoration technique aimed at providing circumferential dynamic suspensory support for the urethral sphincter complex, attenuating pelvic prolapse of the bladder and relieving tension off the healing anastomosis for improved healing, delivers significantly accelerated return of continence, with no added morbidity nor prolongation of operative time.

VID-07

AdVance male sling TO: transobturatoric tape to treat mild and moderate urinary stress incontinence in male patients

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Introduction and Objective: The implementation of the AdVance Male Sling TO System as the treatment of stress urinary incontinence (SUI) after radical prostatectomy (RP) extends the therapeutic options for mild and moderate SUI. The presented video illustrates the technique of implantation step-by-step with unique computer animations.
Materials and Methods: To date, 24 patients with SUI after RP (19 patients) or TUR-P (5 patients) received the AdVance Male Sling. The transobturatoric sling is placed in after a perineal incision is performed and the bulbar urethra is exposed to the pelvic floor. Cystoscopy demonstrates the necessary mobility of the membranous urethra and sphincter integrity by an iris-like closure. The sling is introduced transobturatorically though the use of guidance helices and fixed directly to the corpus spongiosum at the circumference of the bulbar urethra. The tightening of the sling results in an elevation of the pelvic floor including the repositioning of the external sphincter, which allows the reaimed circular closure without obstruction. The excessive sling ends were tunneled into the subcutaneous tissue. All steps are visually articulated with the anatomical related animations and make the surgical approach of the AdVance Male Sling self-explanatory.
Results: Investigations of the overall outcome demonstrate continence rates (0–1 pad/d) of 50% and a significant reduction in pads (> 70%) for a further 20% of the patients. Also, patients with SUI after TUR-P showed significant reduction of pad usage. Complications included prolonged wound healing in 25% and hematoma in 10% of the patients without the need of surgical revision.
Conclusion: The video of the AdVance Male Sling TO System with intraoperative and computerized animations will assist the urologist to be better trained using a standardized method to treat mild and moderate SUI which primarily occurs after RP. Also patients with SUI after TUR-P demonstrated benefit after implantation. The sling completes our therapeutic options in addition to the artificial sphincter for the treatment of mild and moderate SUI.

VID-08

Vascular anastomosis in renal transplantation

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Introduction and Objective: Prepare an educational video of contemporary technique of vascular anastomosis in renal transplantation and describe methods of minimizing warm ischemia times.
Materials and Methods: An overhead boom camera was used to obtain digital video of the vascular anastomosis of a living related renal allograft.

Footage was edited with iMovie software. The video was then uploaded to the resident, password protected website for resident preoperative review of surgeon specific technique. Detailed sequential steps used to minimize warm ischemia are described including, venotomy, placement of 5-0 non-absorbable monofilament sutures in vein with kidney still on ice, arteriotomy, venous anastomosis, arterial anastomosis, release of clamps and administration of vasoactive medications.
Results: High quality video of open surgery can be obtained with the aid of a boom camera. Easily accessible, narrated and edited video can be used to review critical operative steps prior to performing operations by trainees in an educational setting.
Conclusion: Warm ischemic times can be minimized with specific intraoperative steps used to efficiently complete the vascular anastomoses. Web-based, surgeon specific instructional video is a valuable resource for surgical trainees prior to participating in these time sensitive surgical cases.

VID-09

Laparoscopic orchidopexy preserving the cremasteric vessels and using the inguinal canal as a pathway for testicular descent

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Introduction and Objective: Laparoscopic staged Fowler-Stephens orchidopexy (LFSO) has been used in cases where testicular vessel length is a limiting factor for testicular descent. Although this technique has been widely adopted, its reported atrophy rates can be as high as 25%. In order to improve testis survival rate, a video of a modification of the standard second-stage LFSO technique, in which the cremasteric vessels are preserved and the testis is brought down the inguinal canal via the internal ring is presented.
Materials and Methods: The second stage was undertaken 6 months after the first, in order to allow the collateral blood supply to develop. Initial access for second-stage LFSO was obtained by an umbilical Hasson technique. Mobilization of the testis was initiated after identifying the previous area of testicular vessel ligation and starting dissection laterally and proceeding to the internal ring. Further dissection extended medially along the superior margin of the internal ring. The vas was identified and dissection continued medially towards the bladder. A wide strip of peritoneum between the vas and testis was thus preserved. The distal gubernacular attachments (cremasteric vessels) were not divided. When closed, the internal inguinal ring was opened and stretched with a 5-mm trocar to allow passage of the testis through its normal route into the ipsilateral scrotum. A subdartos pouch was created in the scrotum to lodge the descended testis.
Results: Second-stage LFSO was undertaken in 16 patients, 2 with bilateral and 14 with unilateral cryptorchidism, giving a total of 18 intra-abdominal testes. Mean age at the second stage was 34 (16–60) months. The testis position at initial laparoscopy was high in 10 patients, close to the internal inguinal ring in 4, peeping in 3 and pelvic in 1. The testicular vessels were mainly divided by diathermy at the first stage, but in 5 the vessels were clipped. Follow-up ranged from 6 and 24 months after the second stage. All testes that underwent second-stage LFSO with preservation of the cremasteric vessels have survived on Doppler ultrasound at last follow-up evaluation. Two of the 16 testes were located inthe upper scrotum and 14 were positioned in the lower part of the scrotum.
Conclusion: Second-stage LFSO, with preservation of cremasteric vessels is feasible and may be an alternative to the classic LFSO. Further comparative studies with classic LFSO are needed to establish if this modification will improve testicular survival rates.