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1

HISTOTRIPSY FOR BPH: CHRONIC CANINE STUDY

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Introduction: Histotripsy is an experimental extracorporeal ultrasound technology that produces non-thermal mechanical fractionation of tissues. We sought to demonstrate the feasibility of histotripsy treatment for benign prostatic hyperplasia (BPH) by assessing the chronic tissue response in normal prostate tissue in an in-vivo canine model.

Methods: Fourteen canine subjects were anesthetized and treated with histotripsy of the prostate. Following treatment, the dogs were recovered and survived for 2, 7, 20, 28, or 56 days.

Results: Transrectal ultrasound at euthanasia reveals a hypoechoic area corresponding to the targeted treatment volume. Histologically, at 7 days, coagulative, liquefactive, and hemorrhagic necrosis surrounding the treatment cavity is seen with mixed inflammatory response consistent with wound healing. By 28 days, urothelialization is apparent on the border of the cavity as well as collagen deposition in nearby tissue (Figure). Results from 56 days are pending.

Conclusions: Histology produces mechanical fractionation and debulking of prostate tissue. Tissue response at 28 days is consistent with wound healing. Histotripsy is a promising technology with potential application for treating BPH.

3

QUALITY OF CARE FOR NEWLY DIAGNOSED BENIGN PROSTATIC HYPERPLASIA IN A MANAGED CARE SETTING

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Introduction: Quality of care has an increasingly relevant role in healthcare, yet it has not been evaluated for benign prostatic hyperplasia (BPH). Our objective was to measure the compliance rates to the BPH quality indicators (QI) of the Assessing Care of Vulnerable Elders-3 (ACOVE).

Methods: An explicit chart review of 50 newly diagnosed BPH patients determined compliance to the following ACOVE-3 QI: medication and neurologic reviews, AUA-symptom score, digital rectal exam (DRE) and urinalysis (UA). Bivariate analyses tested for differences in QI compliance by patient age, physician specialty and treatment recommendations.

Results: Forty patients had one or more QI performed at their index visit (80%). The most common QI performed were UA (48%) and DRE (24%), with few visits having reviews of medication (6%) or neurologic system (2%). Poor compliance to the QI was associated with higher rates of observation and referral to urologists, but did not vary by physician specialty (table).

Conclusions: Compliance with these BPH QI was mediocre and provides tangible targets for improvements. Our findings suggest marked variations in performance of QI for BPH, especially among treatment recommendations and referral to urologists.

Table Compliance to ACOVE-3 BPH Quality Indicators by Patient Age, Physician Specialty and Treatment

Number of ACOVE QI	0	1	2	3	4	5	p-value
Age≥65 years	20.5	30.8	38.5	10.2	0.0	0.0	0.36
Specialty							
Family Practice	27.3	27.3	31.8	13.6	0.0	0.0	0.41
Internists	7.1	28.6	57.2	7.1	0.0	0.0	
Urologists	10.0	40.0	20.0	20.0	10.0	0.0	
Treatment							
Observation	14.3	31.4	37.2	17.1	0.0	0.0	0.06
Medication	12.5	25.0	50.0	0.0	12.5	0.0	
Referral to Urology	57.1	28.6	14.3	0.0	0.0	0.0	

2

A PROSPECTIVE RANDOMIZED TWO DOSE LEVEL COMPARISON OF SINGLE-INJECTION TRANSRECTAL INTRAPROSTATIC NX-1207 AND FINASTERIDE IN MEN WITH LOWER URINARY TRACT SYMPTOMS DUE TO BENIGN PROSTATIC HYPERPLASIA

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Introduction: NX-1207 is a novel prostate selective therapeutic protein which has shown positive results in prior BPH trials. A Phase 2 multi-center prospective randomized trial evaluated NX-1207 2.5 mg in comparison to finasteride 5 mg and NX-1207 .125 mg.

Methods: 85 men with BPH-related LUTS were enrolled from 32 U.S. clinical sites. AUASS ≥ 15; Qmax < 15mL/sec; PV 30-70 cc; 3 arms: NX-1207 2.5 mg (N=50), NX-1207 .125 mg (N=10), finasteride 5 mg (N=25). Using TRUS, NX-1207 was injected transrectally into the prostate with evaluations at 30 and 90 days.

Results: Adverse events were minimal, with no sexual side effects. IPSS improvement in NX-1207 2.5 mg intent-to-treat cohort at 90 days was 9.71 points vs. finasteride 4.13 points (p=.001), and low dose NX-1207 4.29 points (p=.034). PV loss for NX-1207 2.5 mg was 13.1% (-6.11 cc) (vs. +1.32 cc for NX-1207 low dose, p<.001). Qmax improvement was 2.61 mL/sec (vs. 0.36 mL/sec for NX-1207 low dose, p<.001).

Conclusions: NX-1207 therapy is an office based transrectal injection with minimal discomfort and no catheterization requirement. 90 day results indicate significant symptomatic improvement and acceptable safety profile. Further evaluation of long-term outcomes is ongoing.

4

COMPARISON OF THE OUTCOMES OF HOLMIUM LASER PROSTATECTOMY (HOLRP) FOR PATIENTS WITH AND WITHOUT ACUTE URINARY RETENTION (AUR)

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Introduction: Acute urinary retention remains a significant complication for patients with significant LUTS secondary to bladder outlet obstruction (BOO). Holmium laser (HoL) resection potentially offers a less invasive means of removing obstructing prostatic tissue. However, it is currently unknown whether HoL achieves satisfactory results in patients who present with AUR.

Methods: The medical records of 87 patients who underwent HoLRP were reviewed with prospective questionnaires aimed at determining patients' AUA-S scores, QoL scores, and medication usage. Statistical analysis compared the clinical characteristics and outcomes between patients with and without AUR for up to 2 years.

Results: Patients presenting with AUR had greater improvement in average AUA-SI score, QOL score, post-void residual volumes compared to non-AUR patients. There were no significant decreases in the reported post-operative use of BPH-related medications in either group. However, patients without AUR had an increased frequency of post-operative anticholinergic use for irritative symptoms.

Conclusions: HoLRP is an effective surgical therapy for patients presenting with AUR due to BOO.

5

DELAYED CHIP FORMATION FOLLOWING PROSTATIC VAPORIZATION: AN UNDERAPPRECIATED RISK

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Introduction: Delayed postoperative tissue slough causing urinary retention, may not be so uncommon.

Methods: We retrospectively evaluated our last 200 prostatic vaporization procedures (Jan 2006-Nov 2007) to determine delayed post op urinary retention secondary to prostatic tissue slough. Procedures included 155 AMS Greenlight 532nm (100 PV and 55 HPS), 33 Biolitec Evolve 980nm, 12 Luminis HoLAP 2100nm. Four patients had delayed urinary retention. These were all noted to be post 980nm vaporization.

Results: The average day of retention occurred on postop day #49. The mean prostate size was 33cc, and the total joules of energy averaged 118,000. All patients were voiding well prior to their bout of retention. Three patients had their tissue extracted through office cystoscopy and alligator forcep retrieval. One patient required an anesthetic with the tissue fragment looped out through a 28 Fr resectoscope. The largest individual tissue slough fragment was (3.2 x 2.0 x 0.3) with all fragments removed > 1cm in size in all patients.

Conclusions: Once the tissue fragment was removed, all patients had return of strong volitional voiding. The 980nm wavelength appears that it may have a different tissue effect than other lasers currently used.

6

HOLMIUM LASER ENUCLEATION OF THE PROSTATE (HOLEP): EFFICIENCY GAINED BY EXPERIENCE AND OPERATIVE TECHNIQUE

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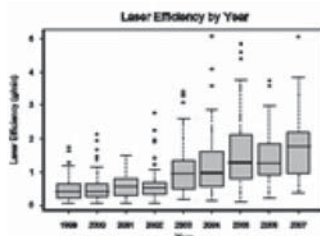
Introduction: HoLEP has been shown to be reproducible and effective, especially for large glands. We have recently described techniques to improve operative time and shorten the learning curve. This abstract assesses the change in efficiency for HoLEP over time at our institution.

Methods: A retrospective analysis of 949 consecutive HoLEP procedures performed over a 9-year period between 1/99 and 10/07 was performed. The cases were completed with differing levels of attending surgeon, fellow, and resident involvement. The enucleation time was recorded and pathologic specimen weight was used for measurement of enucleated tissue. The mean, median, and quartile differences in efficiency were evaluated yearly over an 8-year period for changes in efficiency with increased experience.

Results: The efficiency of enucleation improved over time with 0.55g/min enucleated in the first 4 years and 1.32g/min enucleated in the last five years. This trend continues with an average 1.57g/min enucleated in the last two years.

Conclusions: The efficiency of HoLEP improves with experience and improved techniques over time.



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RANDOMIZED MULTICENTER PILOT TRIAL SHOWS BENEFIT OF MANUAL PHYSICAL THERAPIES IN TREATMENT OF UROLOGIC CHRONIC PELVIC PAIN

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Introduction and Objectives: Manual physical therapy (MPT) is gaining popularity as treatment for Painful Bladder Syndrome (PBS) and Chronic Prostatitis/Pelvic Pain Syndrome (CPPS). Our objective was to determine feasibility of a randomized study of MPT for these conditions and to estimate efficacy.

Methods: We recruited participants with PBS/CPPS at six clinical centers and randomized to treatment with MPT [connective tissue manipulation to abdominal wall, back, buttocks, thighs, pelvic floor] or massage [total body massage without internal treatment]. At study end, patients were considered â ˜responders’ if compared to before treatment, symptoms were either â ˜moderately’ or â ˜markedly’ improved.

Results: 47 participants (23 males, 24 females) were randomized to MPT (n=23) or massage (n=24); 93% had moderate/severe pain and 91% moderate/severe urgency at baseline. In the MPT group 13/23(57%) were responders, compared to 5/24(21%) in the massage group (p=0.03). There were no serious adverse events and 44/47 (94%) completed therapy.

Conclusions: This novel randomized trial suggests that it is feasible to study MPT for treatment of PBS and CPPS, and that MPT is an efficacious treatment for these conditions.

Funding: NIH/NIDDK

8

REFLEX TESTING OF MALE URINE SPECIMENS MISSES FEW POSITIVE CULTURES, MAY REDUCE UNNECESSARY TESTING OF NORMAL SPECIMENS

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Introduction and Objectives: Many institutions have adopted â ˜reflex testing’ of urine samples, in which urine culture is only performed if a threshold number of leukocytes (WBCs) is present. Our aim was to determine the predictive values of WBC count for the presence of a positive urine culture in men.

Methods: We performed a retrospective chart review of all male patients who presented to our tertiary-care urology clinic in 2006 that had both a urinalysis and urine culture obtained. A urine culture was considered to be positive if at least 10,000 colonies of an uropathogen were present. Data was tabulated and analyzed using SPSS V15.0 software.

Results: 20% of 874 urine cultures were positive. WBCs were present at a concentration of at least 5/high powered field (hpf) in 42% of all specimens and in 93% of positive specimens. The presence of >5WBC/hpf had a positive predictive value of 56% and a negative predictive value of 97% for positive culture.

Conclusions: Reflex urine testing, in which cultures are done on urine specimens with >5WBC/hpf, would have missed 7% of positive urine cultures, while avoiding 69% of all cultures. Reflex testing may be appropriate in ambulatory patients in whom urinary tract instrumentation is not planned.

9

CHARACTERIZATION OF URINE CULTURE AND RESISTANCE PATTERNS OF CHRONICALLY CATHETERIZING PATIENTS PRIOR TO UROLOGIC SURGERY

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Introduction and Objectives: To report urine culture findings and resistance patterns in patients with chronic catheterization who underwent urologic surgery.

Methods: From 2002 to 2007, 193 procedures were performed on 139 patients, and the 123 that were preceded by an admission urine culture and medical records were retrospectively reviewed to collect preoperative outpatient (OP) and inpatient (IP) culture results with resistance patterns.

Results: 51% of IP cultures had >100,000 CFU/ml bacteria; whereas 33% had >3 unspeciated organisms. Of the 85 speciated organisms identified, 20% were resistant to empiric coverage with ampicillin and gentamicin and the incidence of multi-drug resistance (MRSA, VRE) was low (3.3%). Of the 72 that had both OP and IP cultures, 42% had speciated organisms in both cultures, including eight (26.6%) with the same organism and resistance pattern, one (3.3%) with different organisms but the same resistance pattern, and 21 (70%) with different organisms and different resistance patterns.

Conclusions: In patients with chronic catheterization, urine cultures obtained one month preoperatively are of limited benefit in predicting bacterial resistance patterns at the time of surgery.

10

ANTIBACTERIAL ACTIVITY OF HYDROPHILIC URETERAL STENTS FOLLOWING IMMERSION IN ANTIBIOTIC SOLUTIONS

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Introduction: To determine antimicrobial activity of hydrophilic ureteral stents after antibiotic immersion.

Methods: Segments of hydrophilic ureteral stents from different manufacturers were immersed in antibiotics (ampicillin, ciprofloxacin, and gentamicin). Normal saline was the control. Segments were incubated in broths of Escherichia coli and Enterococcus faecalis. sonicated to free the bacteria, and colony-forming units were determined after 48 hours. Immersed segments were placed on agar plates of E. coli and E. faecalis and zones of inhibition were measured.

Results: Antibiotics decreased adherence of E. Coli for all stents, with Cook stents performing best. Stents subjected to E. faecalis were heavily colonized at 30 minutes regardless of antibiotics. Stents immersed and placed on agar plates showed inhibition of both bacteria acutely. No stent retained activity against E. faecalis after 24 hours. Ciprofloxacin was most effective against both bacteria.

Conclusion: Hydrophilic ureteral stents immersed in antibiotics show activity against E. coli and E. faecalis acutely. Stent colonization with E. faecalis was not significantly reduced. Ureteral stent immersion in antibiotics prior to placement may prove valuable in patients with urinary tract infection.

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EMPIRIC ANTIBIOTIC TREATMENT OF LOW LEVEL LEUKOCYTOSPERMIA

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Introduction and Objectives: Leukocytospermia (LCS) is usually defined as >1 million (M) leukocytes/milliliter (ml) semen. However, lower levels also correlate with oxidative stress and lower DNA integrity. We report the effects of empiric antibiotics (abx) on unassisted pregnancy rates (PR) for patients (pts) with LCS 1 M/ml or less.

Methods: Of 168 pts seen for infertility with any level of LCS by Endtz test, 29 (21 with follow up) had levels from 0.2 to 1.0 M/ml and received abx. The control group of 24 comprised LCS pts seen before initiating this treatment strategy. Paired t test and logistic regression were used to analyze data.

Results: Except Endtz results, treatment and control groups' initial semen analysis (SA) findings showed no statistical differences. Treated pts had higher total motile counts, but this was not statistically significant. Other changes in SA were minimal. Overall PR was 9/21(43%) for treatment group and 4/24(17%) for controls. Abx treatment improved PR with an adjusted multivariate Odds Ratio of 4.1 (95% CI 0.9-18.6; p=0.06).

Conclusions: Treatment of low level LCS may improve pregnancy outcomes, though SA is minimally changed. Larger studies are needed to confirm these findings.

12

MITIGATING BIOFILMS IN CHRONIC PROSTATO-SEMINAL VESICULITIS

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Introduction: Biofilms are structured microbial communities, enclosed in a polymeric matrix and adherent to an inert or living surface. This contributes to maintenance of the inflammatory processes and hampers local non-specific defenses. The environment of the urinary tract and seminal vesicles (adynamic flow), is conducive to biofilm growth. The loss of mucin producing cells is an important mechanism for colonization of epithelia by biofilms. Agents that facilitate thin mucin production (guaifenesin) have the potential to mitigate biofilm formation.

Methods: 43 patients with chronic prostatitis(20) and seminal vesiculitis(20) were given antibiotic therapy. 8/20 UTI, 10/20 seminal vesiculitis patients were given guaifenesin 400 mg t.i.d in addition. 3 patients dropped out of the study early.

Results: After eight weeks, 6/8 chronic prostatitis, and 5/10 seminal vesiculitis patients on guaifenesin showed improvement. Only 3 out of the 22 patients only on antibiotics showed improvement. Increased positive cultures were obtained in patients on guaifenesin with and without massage.

Conclusions: Our investigation proposes the use of guaifenesin to disrupt and isolate biofilms from less accessible sites and to obtain specimens for study.

13

SENIOR MEDICAL STUDENT OPINIONS REGARDING THE IDEAL UROLOGY INTERVIEW DAY

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Introduction and Objectives: Applicant interviews for urology residency positions are a stressful and costly process for students, faculty and staff. We conducted a survey to better determine what urology applicants perceived as an ideal interview day to allow for understanding of a particular urology residency program.

Methods: A questionnaire was given to all urology residency applicants interviewing at the Medical College of Wisconsin in 2007. The results were anonymous and tabulated by an independent third party.

Results: Forty questionnaires were distributed and completed. The vast majority (>80%) of applicants reported they would prefer to partake in 5-7 faculty interviews in an office setting over half to 3/4 of the day. Spending time with current residents was considered the most valuable tool to acquire knowledge about a residency program. The most important criteria when ranking a program were resident satisfaction and resident operative experience. Least important factors included dedicated research time, program reputation and residency duration.

Conclusions: Urology programs may want to consider applicant ideals when organizing residency interviews.

14

UROLOGY RESIDENT GERIATRIC EDUCATION (URGE): A MODEL FOR RESIDENT TRAINING IN GERIATRIC UROLOGY

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Introduction: With an aging general population, geriatric training for future urologists is crucial. To this end, we developed a multi-component model to improve training in geriatric urology.

Methods: The URGE model focuses on didactic learning, learning tools, collaborative clinical experiences, and research. A Learner's Needs Assessment (LNA) identified topics trainees considered important to learn. Funding by the Hartford Foundation.

Results: In response to the LNA and a Visiting Professorship a lecture series was designed to enhance didactic learning. Learning tools included Internet and pocket-card resources, and a PDA geriatrics reference. Experiences in Geriatrics and Urology clinics enhanced collaborative learning. Co-operative research projects complemented education in this model. Evaluation components included topical tests and assessment tools to modify/improve program content and experiences.

Conclusions: Care of the geriatric patient is increasingly important in urology. URGE provides a multi-dimensional model that addresses the need for increased and more codified resident training in geriatrics. Its flexible design based on LNA, learning cases, and evaluative components enhance URGE's applicability to other centers.

15

QUALITY OF LIFE ASSESSMENT OF PATIENTS UNDERGOING LAPAROSCOPIC DONOR OR RADICAL NEPHRECTOMY

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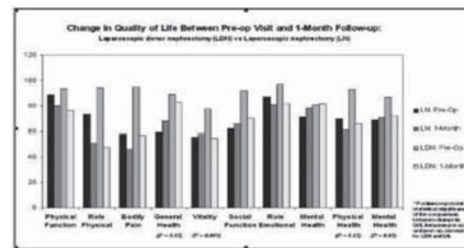
Introduction: A number of studies have evaluated quality of life (QOL) after open donor nephrectomy (ODN), laparoscopic donor nephrectomy (LDN) or laparoscopic nephrectomy (LN). However, there are few comparisons of QOL in patients after LDN to those after LN. We used the SF-36v2 Health survey to compare QOL between these two groups.

Methods: The SF-36v2® Health Survey was given at pre-op and post-op visits. This survey is based on eight domains of health that are summarized into two categories:"Physical Health"and "Mental Health"(see below).

Results: A total of 29 LDN and 28 LN patients completed SF-36v2® Health Surveys. LDN patients had a higher overall QOL when compared to the LN group at the pre-op and the first post-op visit. However, the LDN group had a larger decline from their from their baseline pre-operative QOL when compared to LN patients.

Conclusions: LDN patients had a higher overall QOL both pre-op and post-op. However, the decline in QOL was more dramatic in this group. These differences may be attributable to the fact that the LDN patients are younger, healthier, and have a higher baseline QOL before surgery. The LDN patients may also have higher expectations with regards to their QOL after surgery.



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NINE MONTH EVALUATION OF THE BEAUMONT EXPERIENCE WITH THE XIAO "SKIN-CNS-BLADDER"REFLEX IN SPINA BIFIDA

Benjamin Girdler, MD; Cindy Turzewski, BSN; Ananias Diokno, MD; William Nantau, CNIM, Kevin Feber, MD; Jose Gonzalez, MD; Gary Trock, MD; Juan de Benito, MD; Brian Bush, CNIM; Kenneth Peters, MD

Introduction and Objectives: We report the first early experience in the US with Xiao's Procedure to restore bladder function in patients (Pt) with spina bifida.

Methods: 9 Pt (median age of 8 yrs) qualified for the procedure following rigorous preop evaluation. Postop evaluation included neuro exam at 1 month (mo) and questionnaires and UDTs including attempted stimulation of the reflex arc at 3, 6 and 9 mos.

Results: Mean operative time was 183 min. Length of stay averaged 3.4 days. Periop complications included foot-drop in 1 Pt, wound drainage in 3 Pt and prolonged inability to bear weight in 1 Pt. 8/9 Pt displayed variable weakness of at least 1 muscle group. 8/9 Pt returned to baseline at 9 mos.
Several mos postop, 4 Pt reported sudden worsening of urinary and/or fecal incontinence, improved continence, and then the ability to initiate voiding. By the 9 mo visit, 4 Pt were able to voluntarily void a mean of 155 ccs. Stimulation of the appropriate dermatome caused a significant rise in pDet in 4 Pt. Overall, 6/9 (66%) Pt demonstrated a reflex bladder contraction and/or the ability to initiate voiding by 9 mos.

Conclusions: The ability to initiate voiding can be seen as early as 9 mos after Xiao's Procedure.

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EVALUATION OF THE PROGNOSTIC IMPACT OF ABNORMAL ULTRASOUND IN CHILDREN WITH VESICOURETERAL REFLUX

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Introduction: We previously reported that abnormal renal scan independently predicted failure to resolve vesicoureteral reflux (VUR). We presently evaluate the prognostic significance of renal ultrasound (US) during VUR workup.

Methods: Medical records were reviewed for children diagnosed with primary reflux (1988-2004); those with antenatal hydronephrosis were excluded. We defined abnormal US as hydronephrosis or difference in renal size ≥1cm and abnormal renal scan as differential function ≤40% or renal scarring. VUR outcome was evaluated at 2 years post-diagnosis.

Results: Renal US in 129 children (111 female, 18 male) with VUR showed hydronephrosis in 21% and kidney size discrepancy in 16%. 39 of 129 (30%) had an abnormal ultrasound. VUR resolution was 21% at 2 years in the abnormal US group versus 46% in the group with normal US (p=0.01); however, when controlling for reflux grade the trend was not statistically significant (Table). Of those with an abnormal US, renal scan was abnormal in 60% of children vs. 31% with a normal US (p=0.01).

Conclusions: Abnormal renal US is not an independent predictor of failure to resolve VUR, but abnormal US is associated with abnormalities on renal scan.

VUR resolution rate at 2 years in groups with and without abnormal renal ultrasound, adjusted for reflux grade.

	Abnormal ultrasound	Normal ultrasound	p-value
Grade 2 (n=15 and 52)	40%	54%	0.51
Grade 3 (n=15 and 21)	7%	29%	0.20

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THE OUTPATIENT EXTRAVESICAL URETERAL REIMPLANTATION

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Introduction and Objectives: A critical pathway and modification of surgical technique were developed to determine if extravesical ureteral reimplantation (EUR) can be consistently performed as an outpatient procedure without increased morbidity.

Methods: We evaluated all children undergoing EUR using a modified technique which limits ureteral mobilization, ureteral dissection, and detrusor dissection. Patients follow a strict postoperative critical pathway.

Results: Fifty children (mean of 5.5 years) were evaluated. Twenty-three unilateral and 27 bilateral procedures were performed. Overall, 44 children (88%) were discharged home the same day while 6 children (12%) the next day. All patients undergoing a unilateral procedure and 78% a bilateral procedure were outpatient. When evaluating the last 30 consecutive patients (13 unilateral and 17 bilateral procedures), all patients were discharged home the day of surgery without increased morbidity. None of the children had urinary retention, acute UTIs, or required hospitalization.

Conclusions: Unilateral EUR can be consistently performed as an outpatient procedure without increased morbidity. Most recently, bilateral procedures have resulted in similar results.

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DOUBLE-LAYERED VENTRAL DARTOS FLIP-FLAP FOR NEOURETHRAL COVERAGE AFTER HYPOSPADIAS REPAIR

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Introduction: A technique of using a well-vascularized dartos flap mobilized from the ventral aspect of the penis and rotated over the neourethra after urethroplasty twice to give a double-layered support is described.

Methods: All hypospadias repairs performed by Thiersch-Duplay urethroplasty and a double-layered vascularized pedicle of dartos tissue mobilized from the ventral aspect of the penis were evaluated. This results in the first layer of coverage of the neourethra with redundancy of the flap on one side of the neourethra. This redundant tissue is then folded back over the neourethra and secured laterally to the contralateral side of the neourethra resulting in a double-layered dartos flap.

Results: Ninety-four consecutive boys (median of 10.8 months) underwent this technique for hypospadias: 33 anterior, 57 middle, and 4 posterior. The median follow-up was 8.4 months. Postoperatively, 1 urethrocutaneous fistula (1.1%), 1 urethral diverticulum (1.1%), and 2 meatal stenoses (2.1%) were noted.

Conclusions: The double-layered dartos flip-flap is a straightforward and successful technique to place subcutaneous tissue over the neourethra after urethroplasty for all severities of hypospadias.

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THE SINGLE INSTRUMENT PORT LAPAROSCOPIC (SIMPL) NEPHRECTOMY

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Introduction: We describe a modification of the Posterior Prone Retroperitoneoscopic (PPR) nephrectomy which allows the entire operation to be performed through a single instrument port.

Methods: With the patient prone a retroperitoneal working space is created using a homemade balloon lateral to the sacrospinalis muscle. A single instrument port is placed at the tip of the 11th rib under direct vision. The laparoscope and working instrument can both be held by the operating surgeon. Gerota's fascia is incised and the kidney reflected anteriorly. The vessels are identified and divided. The remaining dissection is completed with a harmonic scalpel and the specimen is placed in an endobag. Care must be taken to avoid even minor oozing in order to keep the field clear.

Results: The technique was successful in 54 children with a median age of 3 years (range 3months -10 years). Median operating time was 52 minutes (range 35-96 minutes). Blood loss was minimal and there were no open conversions. Most children were discharged the day after surgery (51 of 54), and the cosmetic outcome has been excellent in all cases.

Conclusions: This approach avoids instrument crowding and maximizes the restricted retroperitoneal working space.

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FURTHER EXPERIENCE WITH LAPAROSCOPIC TRANSPOSITION OF LOWER POLE CROSSING VESSELS (LTLPV): AN ALTERNATE TREATMENT OF PEDIATRIC URETEROVASCULAR URETEROPELVIC JUNCTION OBSTRUCTION (UPJO)

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Introduction: We report intermediate results on children who underwent LTLPV for ureterovascular UPJO.

Methods: Symptomatic patients with moderate hydronephrosis and preserved renal cortex on renal ultrasound, delayed drainage but preserved split function MAG3 diuretic scan, crossing lower pole vessels on magnetic resonance angiography, with a normal ureter, small renal pelvis, and a normal UPJ with good peristalsis at surgery underwent LTLPV. Patients were followed clinically and with US at 1 month and MAG3 at 2 months. Success defined as symptom resolution with US improvement and improved drainage with preserved renal function.

Results: Eleven girls and 9 boys mean age 12.5 (range 7-16) have undergone LTLPV (3 with robotic assistance). Mean OR time was 90 min. (range 47-140) and length of hospital stay was 24 hrs (range 24-36). No ureteral stents or urethral catheters were placed. In 22 months follow-up (range 12-42), 19 of 20 patients (95%) have been successfully treated. One patient had recurrent pain and underwent laparoscopic pyeloplasty.

Conclusions: In intermediate follow-up, LTLPV has been successful in these select patients and offers a feasible and durable alternative to dismembered pyeloplasty.

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ROLE OF PSA AND SATURATION BIOPSY SCHEMA IN PROSTATE CANCER DETECTION AMONG PATIENT UNDERGOING REPEAT BIOPSIES

Ayman Moussa, MD; Jianbo Li, PhD; Nelly Tan, MD; Brian Lane, MD; J. Stephen Jones, MD

Introduction and Objective: To determine the role of PSA as indicator for repeat biopsy and the best strategy regarding the number of cores needed for those patients.

Methods: We evaluated a total of 996 patients with no history of prostate cancer who underwent repeat TRUS biopsy from 2000-07, and dividing them into those undergoing their initial repeat biopsy (n=668, Group1) and those requiring multiple repeat biopsies (n=328, Group2). We stratified patients according to PSA, either ≤10 or >10, and we considered 8-19 cores as extended biopsy, and 20+ cores as saturation biopsy.

Results: In first group, no significant improvement in cancer detection with saturation biopsy when PSA≤10 (P=0.8). However, if PSA>10 there was a trend towards improved cancer detection, but without statistical significance (P=0.3). The second group shows significant improvement in cancer detection with saturation biopsy when PSA ≤10 (P=0.01), and marked when PSA>10 (P=0.004).

Conclusions: Saturation technique provides limited improvement in cancer detection for the first repeat biopsy. However, if a third or greater biopsy is required based on clinical suspicion, saturation biopsy offers vastly improved cancer detection, in patients with PSA≤ or >10.

	CORES	8-19	> 20	P value
Group 1	PSA≤10	N= 217, Positive 70 (32.2 %)	N=344, Positive 115 (33.4%)	0.845
	PSA>10	N= 51, Positive 9 (17.6 %)	N=56, Positive 15 (26.7 %)	0.368
Group 2	CORES	8-19	> 20	P value
	PSA≤10	N= 95, Positive 13(13.68%)	N=131, Positive 38 (29%)	0.0105
	PSA>10	N= 41, Positive 8 (19.5 %)	N=61, Positive 30 (49.1 %)	0.0047

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DOES TRANSRECTAL ULTRASOUND PROBE REALLY MATTER? END-FIRE VERSUS SIDE-FIRE: PROSTATE CANCER DETECTION RATES

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Introduction: Transrectal ultrasound (TRUS) biopsy of the prostate is a gold standard for diagnosing prostate cancer but still lacks 100% sensitivity. We compared ultrasound probes (end-fire and side-fire) to see if the type of probe affected prostate cancer detection rates.

Methods: We retrospectively evaluated 1563 patients who had undergone TRUS biopsy between 2000 and 2007. Only patients with normal rectal exam undergoing initial prostate biopsy were included. The patients were divided into those whose biopsies were performed with an end-fire probe (n=801) and those whose were with a side-fire probe (n=762). All samples were evaluated for prostate cancer.

Results: There was a significant difference in the overall prostate cancer detection rate in the end-fire arm versus the side-fire arm (45.5% vs. 37.9% respectively, p=0.0026). There was a significant difference in detection rate between end-fire and side-fire in patients with PSA >10 (67.6% vs. 41.2% respectively, p=0.0001) and also in those biopsies with less than 20 cores (45.5% vs. 38.0%, p=0.0082).

Conclusions: Type of probe does significantly affect overall prostate cancer detection rates, particularly in those with a PSA >10 and biopsies of <20 cores.

Probes	PSA ≤ 10	PSA > 10	Cores < 20	Cores ≥ 20
Side Fire	Total: 636 Positive : 237 Percent .: 37.26%	Total: 126 Positive : 52 Percent .: 41.2%	Total: 628 Positive : 239 Percent .: 38%	Total: 134 Positive : 50 Percent .: 37.3%
End Fire	Total: 699 Positive : 296 Percent .: 42.34%	Total: 102 Positive : 69 Percent .: 67.64%	Total: 639 Positive : 291 Percent .: 45.5%	Total: 162 Positive : 74 Percent .: 45.6%
P value	0.0661	0.0001	0.0082	0.1823

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PROSTATE BIOPSY CLINICAL AND PATHOLOGICAL VARIABLES THAT PREDICT SIGNIFICANT GRADING CHANGES IN PATIENTS WITH INTERMEDIATE AND HIGH GRADE PROSTATE CANCER

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Introduction: A significant proportion of prostate cancer patients with biopsy Gleason score (GS)=or>7 are upgraded or downgraded on interpretation of radical prostatectomy (RP) specimens. As biopsy GS plays a critical role in treatment decisions, we sought to identify the parameters that predict pathological changes in this population.

Methods: We retrospectively evaluated a total of 1129 patients who had undergone TRUS biopsy revealing GS=or>7 and underwent RP at our institution from 2000-07. A multivariable logistic regression analysis was applied.

Results: Surgical GS was upgraded in 296 (26.2%), downgraded in 210 (18.6%), and remained the same in 623 (55.2%). Factors predicting surgical GS upgrade were higher P.S.A (p=0.002), presence of perinureal invasion (p=0.03), absence of inflammation or high grade P.I.N (p<0.0001, p=0.01), and the number of positive cores (p=0.03). While large prostate volume (p=0.0007), low maximum percentage cancer in any core (p=0.001) were predictors to downgrading.

Conclusions: Men with higher P.S.A, having more cancer at biopsy are most likely to be upgraded, while Men with large prostate volume, Low cancer at biopsy are likely to be downgraded.

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DO LATERAL POSITIVE PROSTATE BIOPSIES PREDICT CAPSULAR PENETRATION AND/OR POSITIVE SURGICAL MARGINS IN RADICAL PROSTATECTOMIES?

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Introduction: This study examines whether positive lateral biopsies would predict capsular penetration and/or positive surgical margins on final pathological analysis specimens of radical prostatectomies.

Methods: We conducted a retrospective chart review of prostate biopsies and compared them to the whole mount pathology specimens from 201 prostatectomy patients using the William Beaumont Hospital Prostatectomy Database who underwent double sextant biopsies individually labeled for side and location.

Results: Positive lateral biopsy compared to positive biopsies without lateral involvement did not predict higher capsular penetration rates or higher positive surgical margin rates. Also, having a positive lateral biopsy in the apex, mid or base did not correlate with higher capsular penetration or positive surgical margins. Furthermore, a higher number of positive lateral biopsies were not associated with higher capsular penetration or positive surgical margins. The additional economical impact of separately labeling and submitting lateral biopsies adds a substantial burden of $5320 without explicit benefit.

Conclusions: Submitting separately labeled lateral biopsy specimens for pathological analysis is unnecessary.

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TRENDS IN PSA, AGE, AND PROSTAE BIOPSY DETECTION AMONG BLACK AND WHITE MEN

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Introduction: This is a summary of prostate biopsy data from 1990-2005, comparing differences between the Black and White men evaluated at our tertiary care center.

Methods: Retrospective chart review.

Results: Data reviewed from 3410 white and 635 black men; mean ages 65.9 & 65.8. Mean log PSA in black men was 2.4 and 1.97 in white men ($P \leq 0.01$); median PSA levels were 8.9 mg/ml and 6.9 mg/ml, respectively. A decreasing trend in PSA levels and age over time was NOT observed in either group. Although, prostate cancer was identified more frequently in black men, over time, prostate cancer detection decreased in both groups despite no change in age or PSA level. Gleason's Scores (Gs) were initially higher in black men (P=0.0038), but a significant decrease of Gs was observed over time. Gs for White men, increased. Inflammation was noted with greater frequency in white men, and in both groups, when biopsies were negative for cancer.

Conclusion: Despite screening campaigns, age at the time of diagnosis of prostate cancer has not changed. Though favorable, the decreasing trend of Gs among Blacks is not understood. Analysis of our data is ongoing.

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GLEASON 6 PROSTATE CANCER IN 1 OR 2 BIOPSY CORES CAN HARBOR MORE AGGRESSIVE DISEASE

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Introduction: We sought to characterize the pathologic outcomes and to identify clinical parameters that predict upgrading and upstaging in patients with Gleason 6 prostate cancer in 1 or 2 biopsy cores.

Methods: 443 patients with Gleason 6 prostate cancer in 1 or 2 biopsy cores were identified in our robotic-assisted laparoscopic prostatectomy (RALP) database. Pathologic stage, grade, and % positive surgical margins were evaluated. The ability of age, BMI, # of positive cores, greatest percent of cancer in a core (GPC), clinical stage, and pre-operative PSA to predict adverse pathology was assessed. Adverse pathology was defined as upgrading to Gleason > 7 and/or upstaging to > pT3.

Results: 95 (21.4%) patients were upgraded to Gleason > 7 and 42 (9.5%) were upstaged to pT3. 65 (15%) patients demonstrated + surgical margins. Age > 65 ($p = 0.02$), higher pre-operative PSA ($p = 0.03$), and GPC > 15% ($p = 0.01$) significantly predicted adverse pathology. In a multivariate model, GPC > 15% remained significant.

Conclusions: A significant proportion of patients with Gleason 6 prostate cancer in 1 or 2 biopsy cores are upgraded and/or upstaged. Older age, higher pre-operative PSA, and GPC > 15% can help predict adverse pathology.

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CORRELATION BETWEEN OBJECTIVE AND SUBJECTIVE FINDINGS IN INTERSTITIAL CYSTITIS/ PAINFUL BLADDER SYNDROME

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Introduction and Objectives: We compared symptoms and clinical characteristics in women with IC/PBS stratified by hydrodistention findings.

Methods: A total of 325 women with IC/PBS were recruited from the clinical practices of 24 physicians (8 urologists, 16 gynecologists) who are experienced in managing this condition. Treating physicians provided data about previous cystoscopic findings for each patient. A telephone questionnaire which included questions about symptoms, treatments and quality of life was administered. Patients were stratified into four groups: (1) Hunner's ulcer (n=23), (2) Glomerulations (n=117), (3) Neither ulcers nor glomerulations (n=68), and (4) Hydrodistention not performed (n=117).

Results: Age, symptom duration, degree of bladder pain, daytime frequency, urgency severity, and avoidance of intercourse were the same across the four groups. Patients with ulcers were more likely to have missed work due to their symptoms. Patients with glomerulations were more likely to be taking narcotics for their symptoms.

Conclusions: Cystoscopic findings had little association with patient characteristics. This suggests that the distinction between IC and PBS may have limited clinical relevance.

Funding: NIH/NIDDK

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DOES THE SYMPTOM OF "URGENCY" DIFFER FOR WOMEN DIAGNOSED WITH INTERSTITIAL CYSTITIS/PAINFUL BLADDER SYNDROME AND OVERACTIVE BLADDER?

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Objective: To compare urgency symptoms in women with interstitial cystitis/painful bladder syndrome (IC/PBS) and overactive bladder (OAB).

Methods: Women with IC/PBS (n=236) and OAB (n=125) were recruited from the clinical practices of urologists (n=8) and gynecologists (n=15) with recognized expertise in these conditions. Subjects completed a telephone survey about their current urgency symptoms. Responses were compared between the two groups.

Results: Urgency was commonly reported by women with both conditions (IC/PBS 81%, OAB 91%, NS). Urgency in OAB more often resulted in leakage (89% vs 62%, $p<0.001$) In both conditions, the feeling of urgency occurred both suddenly and gradually. In IC/PBS, the urgency is primarily reported as due to pain, pressure or discomfort (87% vs 42% in OAB, $p<0.001$), while in OAB the urgency is more commonly due to fear of leakage (49% vs 11% in IC/PBS, $p<0.001$).

Conclusions: Although urgency symptoms differ in women diagnosed with IC/PBS vs those diagnosed with OAB, there is significant overlap. These findings reinforce the clinical observation that it is often challenging to differentiate between these two conditions.

Funding: NIH/NIDDK

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A CHARACTERIZATION OF A CLINICAL COHORT OF WOMEN WITH IC/PBS

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Introduction: The purpose of this study was to describe a cohort of women with IC/PBS by their historical and clinical characteristics. This was reported with the NIH chronic prostatitis cohort, but a literature review did not reveal a similar study for women with IC/PBS.

Methods: 87 women with IC/PBS were referred to our facility. A history and pelvic exam was done by a Nurse Practitioner. Data was analyzed using descriptive statistics to describe this cohort.

Results: Most women had "constant>5 years (meanVAS=5/10). 94.2% had levator pain. More than 50% had vulvar pain with exam and reported an abuse history. 76% of patients had a miscarriage, stillbirth or abortion. Lifetime pelvic surgeries equaled a mean of 4 and 48% had hysterectomies, 2/3 done before IC/PBS diagnosis. Pre-menstrual women reported pain throughout the menstrual cycle.

Conclusions: This study describes historical and clinical characteristics of a cohort of IC/PBS patients. This study sheds light on the etiology, prevention and treatment interventions that are effective in dealing with IC/PBS and suggest that a multi-modal plan of care is likely most effective in this patient population.

Funding: Ministrelli Program for Urology Research and Education (MPURE)

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THE SUCCESS OF PHYSICAL THERAPY IN TREATING PATIENTS WITH PELVIC FLOOR DISORDERS

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Introduction: Patients with pelvic floor disorders often present with complaints of urinary urgency, frequency, dyspareunia, vulvadynia, or generalized pelvic pain. Physical therapy (PT) treatments for pelvic floor disorders (PFD) are known to be beneficial, are an important part of a multimodality approach, but are not widely used. Our aim is to quantify the success of PT in patients with various PFDs.

Method: A retrospective chart review was preformed on all women who received PT as a primary or combined modality of treatment for her PFD over an 11 month period. The study group included 37 women. Modality of therapy and objective outcome of treatment were analyzed.

Results: The mean age of the women treated is 44 years. Patient's received a median number of 4 sessions. Twenty seven patients (73%) had significant improvements in symptoms at the completion of their prescribed PT course. Subset analysis reveals that age, number of treatments, or treatment modality did not affect the success of PT.

Conclusions: Our experience shows that PT is an integral part of the treatment of PFD. Success can be achieved in a variety of patients, in a short time. Early PT intervention has a financial and timely advantage.

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SACRAL NEUROMODULATION IN PATIENTS WITH NEUROLOGIC DISEASE AND VOIDING DYSFUNCTION

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Introduction and Objectives: To evaluate the efficacy of sacral neuromodulation (SNM) in patients with neurologic disease and voiding dysfunction.

Methods: This is a retrospective analysis of patients with neurologic disease and voiding dysfunction who underwent evaluation SNM. Results were evaluated by voiding diary and interview.

Results: 43 patients (M=17, F=26; mean age 47.5y) with neurogenic voiding dysfunction were evaluated for SNM. Neurologic diagnoses were: multiple sclerosis=5, CVA=6, Parkinson's disease =1, Cerebral Palsy=2, traumatic brain injury=1, spinal cord injury =22, other=6. Urodynamic diagnoses were: retention (R) =18, urge urinary incontinence (UUI) =19, UUI+R =5, urgency-frequency (U-F) =1. Of those patients tested, 29/43 (67%) had permanent generator placement (R=61%, UUI=68%, UUI+R=80%, U-F=100%). Of those implanted, 7 failed to have a good response, 3 patients had devices removed, and 4 patients fell and broke leads, resulting in loss of efficacy. Success rate in this group was seen in 15/29 (52%) of patients (mean follow-up 19 months).

Conclusions: Neurogenic voiding dysfunction can be successfully treated with SNM.

Funding: Dr. Smith, Medtronic Grant

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A RANDOMIZED MULTICENTER STUDY COMPARING PERCUTANEOUS TIBIAL NERVE STIMULATION WITH PHARMACEUTICAL THERAPY FOR THE TREATMENT OF OVERACTIVE BLADDER

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Introduction and Objective: This multicenter study compared the effectiveness of Percutaneous Tibial Nerve Stimulation (PTNS) versus drug therapy for the treatment of Overactive Bladder (OAB).

Methods: A total of 100 subjects with OAB were randomized at 11 centers to 12 weekly PTNS treatments or tolterodine (Detrol® LA). All subjects completed voiding diaries and global assessments.

Results: Twelve week follow-up data in this ongoing study was available for 44 PTNS and 40 Detrol subjects. Baseline characteristics were comparable. The frequency of voiding episodes was reduced in 73% (30/41) of PTNS versus 75% (30/40) of Detrol subjects. At 12 weeks follow-up, 80% (35/44) of PTNS considered themselves cured or improved versus 58% (23/40) Detrol subjects (p=0.03). Adverse events were similar except a lower frequency of dry mouth (p=0.02) and constipation (p=0.02) in the PTNS arm. Detrol achieved a significant improvement in fatigue from baseline (p=0.03). PTNS achieved significant improvements in both sleepiness and fatigue symptoms from baseline (both p=0.002).

Conclusions: PTNS provides comparable effectiveness to pharmaceuticals and may be considered a first line therapy for the treatment of OAB.

Funding: Uroplasty, Inc.

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COMPARISON OF PATIENTS UNDERGOING A TWO STAGE SACRAL NERVE STIMULATION PROCEDURE: IS THERE SOUND RATIONALE FOR A ONE STAGE PROCEDURE?

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Introduction: SNS is staged to assess outcomes prior to permanent implantation. Stage I involves placement of an external sacral lead tested for 2 weeks and stage II is implantation of a pulse generator in responders (>50% improved). The purpose is to determine the overall response rate, predictors of a positive response and cost of a 2-staged vs. single stage procedure.

Methods: A prospective database of 130 patients who had stage I InterStim® was analyzed. Those with at least 50% symptom improvement in 2 weeks were implanted. Student t-test and Chi square test were used for analysis.

Results: 117/130 (90%) improved and progressed to stage II and13 (10%) had removal. Older age was the only predictor of a poor outcome (69.1 explanted vs. 55.1 yr implanted). Total hospital reimbursement for staging the procedure was $21,184/case. Implanting the lead and generator during a single surgery costs $15,732 (including removal of non-responder's lead), saving $5453/case.

Conclusions: Majority of patients tested with SNS would benefit from a one-stage procedure (90%). This would reduce operative and anesthesia risks, time lost from work, and burden on doctors and staff. Older age is an important predictor of likelihood of Stage I failure.

Figure 1. Comparison between patients who proceeded to stage II (success) and those who were explanted (failure)

	Implanted		Explanted		
Characteristic	Mean or No.	SD or %	Mean	SD	Significance
Age	55.1	16.2	69.1	15	0.008*
Females	100	85.50%	11	84.60%	0.934**
White race	101	86.30%	13	100%	0.461**
Living with spouse/partner	70	59.80%	11	84.60%	0.243**
Some college or higher	69	59.00%	7	53.80%	0.067**
Retired	28	23.90%	8	61.50%	0.045**
Income ≥$50,000	50	42.70%	7	53.80%	0.05**
Primary diagnosis of					
Interstitial cystitis	37	31.60%	2	15.40%	0.424**
Urgency/Frequency	27	23.10%	2	15.40%	0.424**
Urinary retention	7	6%	3	23.10%	0.115**
Urge incontinence	32	27.40%	3	23.10%	0.933**

* p value for student t-test
** p value for chi square test

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SURIGICAL COMPLICATIONS OF THE ROBOTICALLY-ASSISTED SACROCOLPOPEXY (RAS) VERSUS THE ABDOMINAL SACROCOLPOPEXY (AS)

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Introduction: The AS is considered the gold standard for repair of vaginal vault prolapse. This study concentrates on the post-operative complications of the RAS compared to the reported complications for the AS.

Methods: From 2002 to 2008, 53 consecutive females with symptomatic high-grade post-hysterectomy vaginal vault prolapse underwent RAS at in the Department of Urology. Complications were collected prospectively along with patient demographics, and length of hospital stay. Complications from AS were compiled by reviewing studies attained via both MEDLINE and PubMed.

Results: With an average follow-up of 35.8 months, 53 females had 14 surgical complications after RAS (Table 1). Table 1 details the compiled percentages of major complications found on review of 3549 patients undergoing AS with an average follow-up of 35.6 months.

Conclusions: The complications in this initial series of RAS are similar or better than the AS. This report supports that a RAS should be considered as an option for vaginal vault prolapse repair, not only because of comparable success rate and decreased hospital stay, but also due to the declining amount surgical complications.

	% Transabdominal	% Robot-assisted
Cystitis	10.9	0
Wound infection	4.6	3.8
Hemorrhage	4.4	0
Cystotomy	3.1	3.8
Ileus	3.6	0
Incisional dehiscence	5.5	1.9
Convert to open	–	9.4
DVT/PE	3.3	0
Mesh erosion	3.4	3.8
Reoperation for mesh	3.0	1.9

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COMPARISON OF PROLAPSE REPAIR DURABILITY BETWEEN THE ROBOTICALLY-ASSISTED SACROCOLPOPEXY (RAS) AND 3400 ABDOMINAL SACROCOLPOPEXIES (AS) IN THE LITERATURE

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Introduction: The AS is the gold standard for repair of vaginal vault prolapse in terms of durability. This study concentrates on the recurrence of prolapse after RAS compared to the reported prolapse recurrence with AS.

Methods: From 2002 to 2008, 48 consecutive females with high-grade post-hysterectomy vaginal vault prolapse underwent RAS in the Department of Urology. Prolapse recurrence included vaginal vault, cystoceles and rectoceles. Prolapse recurrences from AS were compiled by reviewing historical studies attained via MEDLINE and PubMed.

Results: With an average follow-up of 35.8 months, 48 females had 3 prolapse recurrences after RAS (Table 1). Review of the AS in literature demonstrated 539 prolapse recurrences in 3459 patients with an average follow-up of 35.6 months (Table 1). The average success rate of the AS on review was 91%.

Conclusion. Prolapse recurrences in RAS are similar to or better than the AS. The durability of our repair is 94%, which is comparable to the historic success rate of 91% in 3459 patients after AS. Despite the need for follow-up in more patients to confirm the durability of the RAS, this report supports that the RAS should be considered as an option for vaginal vault prolapse repair.

Table 1. Prolapse Recurrences in Abdominal vs. Robotically-Assisted Sacrocolpopexy

	Abdominal Approach		Robotically-assisted	
	n=	%	n=	%
Total Recurrence	539	15.6	3	6.2
Vault Recurrence	325	9.2	1	2.1
Cystocele	108	3.0	0	0
Rectocele	106	3.0	2	4.2

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SACROCOLPOPEXY AND TOTAL TRANSVAGINAL PROLENE INTERPOSITION FOR ADVANCED PROLAPSE WITH MINI SLING: MINIMUM 1 YEAR FOLLOW-UP

Serge Marinkovic, MD

Introduction: Sacrocolpopexy (SC) is the standard for the long-term management of vault prolapse (VP). Recently minimally invasive total transvaginal techniques sacrospinous (SS) with Polyprophylene have gained advocates and increased usage. We describe our results.

Materials and Methods: A retrospective, double cohort study was conducted between January 2005 and March 2007 were 88 patients underwent SC with MS and 54 patients SS with MS. All patients had complete history and physical examination, completed UDI-6, 2Q-7 and Pelvic Distress Inventory (PDI), videourodynamics, follow-ups (6 weeks, 6 months and 1 year). Failure was defined as a return of Stage 2 POP.

Results: SC patients had a 91 percent success rate with 2 cystocele and 7 rectocele's failures (median follow-up was 19 months) while no VP occurred. SS had a success rate of 85 percent (6 recurrent cystocele's and 2 VP, VP occurred in concomitant cystocele failure patients, median follow-up was 17 months) (p=0.09). UDI-6, 2Q-7 and PFDI were statistically improved and equal (p=0.001). Mesh erosion was 0 percent in SC while it was 7 percent in SS (p=0.03).

Conclusions: SC and SS with 1-year follow-up had comparable anatomical and SUI results with minimal mesh erosion.

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USE OF THE MID-URETHRAL SLING TO TREAT STRESS URINARY INCONTINENCE IN WOMEN WITH MULTIPLE SCLEROSIS

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Introduction: Urinary incontinence among women with multiple sclerosis (MS) is often due to neurogenic detrusor over activity however this population is also at risk for stress urinary incontinence (SUI). Little is known about the use of mid-urethral slings (MUS) in patients with MS. We performed a retrospective study to review outcomes of MUS placement in MS patients with SUI.

Methods: We identified all women with MS who underwent a MUS procedure from 2002 to present. A chart review was performed and standardized telephone calls were used to administer questionnaires. We used the global assessment of severity and improvement (PGI-S and PGI-I) to assess patient determined outcomes. The urogenital distress inventory-6 (UDI-6) was used to assess current symptoms.

Results: We identified seven women who had a MUS procedure with urodynamic (N=4) or subjective (N=3) SUI. Six (86%) women reported no further SUI. Two women with bothersome urge incontinence preoperatively reported no change in their symptoms and no patient had de novo urge incontinence. Median score was 2 for PGI-S, 3 for PGI-I and 8 for UDI-6.

Conclusions: Use of the MUS to treat SUI in women with MS can be successful. However it does not appear to address urge symptoms or cause global symptom improvement.

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HOME IN 3 HOURS: CONTEMPORARY LENGTH OF STAY WHEN USING A PERI-OPERATIVE CARE PATHWAY FOR MID-URETHRAL SLING SURGERY

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Introduction and Objectives: Despite the minimal morbidity of the mid-urethral sling (MUS), several authors advocate routine post-operative labs. We evaluated the safety profile and length of stay when the MUS was performed according to a strict care pathway.

Methods: The care pathway is comprised of pre-op education, IV sedation and local, no catheter or vaginal pack post-op, and post-op patient estimation of their force of stream. A retrospective chart review of all patients presenting between 2/2005 and 7/2007 for surgery with a single surgeon was performed. Extracted data points included: length of stay (LOS), age, anesthetic, post-op labs, transfusion, emergency room (ER) visits within 30 days, readmissions within 7 or 30 days, and discharge with or without a catheter.

Results: 86 cases met inclusion criteria. The median age was 52 years. The median LOS was 2:15 hours. No post-op labs or transfusions were required. 1 patient was admitted within 30 days for chest pain. 92% were discharged without a catheter.

Conclusions: When the above care pathway is followed, the tensionless MUS can be performed safely in the outpatient setting with a median time from arrival in the recovery area to discharge of less than 3 hours.

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LONG-TERM OUTCOME OF URETHROLYSIS AFTER ANTI-INCONTINENCE SURGERY

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Objective: To determine the long-term outcome of urethrolysis (UL) in relief of bladder outlet obstruction (BOO) due to anti-incontinence surgery (AIS).

Methods: The study included 70 women who had UL from January 2001 to August 2004. Predictive value of type of AIS or UL, time to UL, age, and follow-up was determined for symptom relief and UDI-6 scores. T-test, ANOVA and the Chi-square test were used.

Results: Mean age was 56.1 years. Mean questionnaire follow-up was 4.5 years. Retention resolved in 85% whereas irrigative symptoms (IS) improved or resolved in 47% (p=0.002). 69% had improvement or resolution of obstructive symptoms (OS). Patients who did not improve had a longer mean length of office follow-up ($p<0.05$). The response rate was 58%. IS were more bothersome than OS or stress incontinence on the UDI-6. None of the variables had any association with symptom relief or UDI-6 scores. 62.5% stated that their urinary condition was moderately or significantly better; 31.3% moderately or significantly worse; 6.25% the same.

Conclusions: UL is successful in relieving BOO in most patients. IS are most bothersome at long-term follow-up. None of the variables studied had any predictive value for outcome.

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VALSALVA VOIDERS ARE AT INCREASED RISK OF URINARY RETENTION AFTER MID URETHRAL SLING PLACEMENT FOR STRESS URINARY INCONTINENCE

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Introduction and Objectives: Mid urethral slings have become the gold standard treatment for female stress urinary incontinence (SUI). We retrospectively determined the incidence of postoperative urinary retention in Valsalva and non-Valsalva voiders that underwent mid urethral sling placement.

Methods: Chart review of all patients receiving mid urethral slings from 2002 to 2007 for the treatment of SUI was performed. Women with concomitant hysterectomy, prolapse repair or elevated (>75cc) preoperative post void residual urine volume were excluded.

Results: Eighty-eight patients were available for analysis –28 voided by Valsalva and 60 by detrusor contraction. The rate of post operative urinary retention was 21% and 5% in the Valsalva and non-Valsalva groups, respectively ($p<0.05$).

Conclusions: Women who void by Valsalva are at increased risk of urinary retention following mid urethral sling placement.

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BLADDER HISTOLOGY AND URINARY CYTOKINE RESPONSE TO CHRONIC BLADDER IRRITATION IN A RAT MODEL

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Introduction: Little is known about in vivo urinary cytokine response to inflammation such as that seen in children with neurogenic bladder. Identification of urinary markers associated with urothelial hyperplasia could serve an important clinical role.

Methods: We used a rat model that causes chronic bladder irritation via insertion of a foreign body (FB). Female rats in the control group (N=12) underwent catheterization once. The FB group (N=18) had transurethral placement of plastic FB into the bladder. Urine from voids at 1, 2, 3, 7, and 14 days was assessed by multiplex cytokine assay, with values normalized for urinary creatinine level. Bladders were removed at 2, 4, and 6 weeks.

Results: Figure 1 is the percent change in urinary cytokine levels in the FB group compared to the control group at sequential time points. Bladder tissue weight was heavier in the FB group (400 vs. 100 mg, $p<0.01$) with marked urothelial hyperplasia on histology.

Conclusions: In this model, chronic bladder irritation by an indwelling FB caused urothelial hyperplasia. Cytokine analysis showed this proliferative response was associated with marked (IL-1a , IL-1b) and modest (IL-6, IL-10, IFN-g, TNF) increases in urinary cytokine levels.

Urinary cytokine level in the foreign body group compared to catheterization group (%)

	Day1	Day2	Day3	Day7	Day14
IL-1α	1179%	4215%	5393%	15117%	8573%
IL-1β	327%	815%	832%	6166%	6309%
IL-2	113%	143%	217%	145%	100%
IL-4	99%	73%	107%	46%	38%
IL-6	366%	1569%	969%	661%	170%
IL-10	430%	1140%	1460%	788%	238%
GMCSF	126%	152%	289%	93%	92%
IFN-γ	125%	285%	504%	368%	180%
TNF	730%	2904%	4675%	1444%	926%

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SPATIAL AND TEMPORAL DISTRIBUTION OF SONIC HEDGEHOG DURING BLADDER ORGANOGENESIS

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Introduction and Objectives: Sonic Hedgehog (Shh) is thought to play a role in the development of the urinary tract. The purpose of this study was to elucidate the temporo-spatial distribution of Shh during bladder organogenesis.

Methods: 10 tadpoles of Xenopus laevis at various developmental stages (56 - 61) were dissected. RNA from hindguts and bladders was used for quantitative real-time polymerase chain reaction (qRT-PCR). Whole mount in-situ hybridization was performed using Digoxigenin labeled anti-sense probes for Shh.

Results: At stage 56-58 there is a 2-fold increase in Shh expression in the bladder as compared to the adjacent hindgut. Subsequently, both the bladder and hindgut express similar quantities of Shh. The in-situ hybridization results demonstrate Shh expression in the epithelium of the distal hindgut (stages 53-55, 56-58 and 59-61) and the urinary bladder (stages 59-61).

Conclusions: The data presented demonstrates the spatio-temporal deployment of Shh in the developing hindgut and bladder. This supports the hypothesis that Shh plays a role in the patterning and differentiation of the urinary bladder.

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HINDGUT DIFFERENTIATION –SPATIO-TEMPORAL MAPPING OF THE ACTIVE SIGNALING PATHWAYS DURING BLADDER DEVELOPMENT

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Introduction and Objectives: Organogenesis is regulated by complex signaling pathways. The purpose of this study was to elucidate the temporo-spatial distribution of bone morphogenetic protein (BMP), Hedgehog (Shh), and fibroblast growth factor (FGF) during bladder development.

Methods: 20 tadpoles of Xenopus laevis at various developmental stages (53-63) were dissected and RNA was isolated. Real-time polymerase chain reaction (RT-PCR), Whole mount in-situ hybridization (WISH) and Whole mount antibody staining (WAS) was performed.

Results: The RT-PCR data demonstrates that BMP4 had a two-fold increase in expression in the distal hindgut. The data also demonstrated Shh and patched had a two-fold increase in expression in the bladder compared to the hindgut. WAS and WISH data demonstrate the expression of downstream markers of activity in the BMP, Shh and FGF signaling pathway in the differentiating hindgut.

Conclusions: The data presented indicate that Shh-Ptch, BMP, FGF pathways are involved in hindgut differentiation. Further understanding of these signaling pathways will enhance our understanding of bladder organogenesis.

Funding: NIDDK-NIH (1K08 DK069608) and AUA Astellas Award

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OUTCOMES OF URETHROCUTANEOUS FISTULA REPAIR FOLLOWING HYPOSPADIAS SURGERY

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Introduction: Urethrocutaneous fistula (UCF) is the most common complication requiring re-operation following hypospadias repair. Sound surgical principles minimize risk factors that lead to fistula recurrence. We report our experience with the repair of UCF following hypospadias surgery.

Methods: An IRB approved chart review of patients who underwent UCF repair at our center following hypospadias surgery was performed. There were 26 patients with 28 UCF repairs. The majority of our patients were referred (21/26). We assessed several potential factors contributing to our success.

Results: Overall, 27/28 UCFs were successfully repaired. Most fistulas formed in the distal urethra (22/27). Many patients had prior attempted fistula repairs (12/26), and 6/26 had a distal obstruction. The most prevalent hypospadias repairs were the Mathieu (8/20) Snodgrass (5/20) repairs. The average time elapsed from a previous fistula repair was 55 months.

Conclusions: UCFs seem most likely to occur along the distal urethra and are often associated with distal obstruction. These fistulas are often amenable to successful repair by local excision and creation of a submucosal flap, even when multiple prior operations were performed.

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MODIFIED ANATOMICAL REPAIR FOR BURIED (CONCEALED) PENIS

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Introduction: We present a simple modification for concealed penis repair consisting of anchoring sutures for improved results.

Methods: Concealed penis repair was performed on 13 patients with a median age of 18 months (7m –30m). All presented with preputial urine retention. An incision is made between the scrotal and penile shaft skin. Proximal and distal circumferential dissection along Buck's fascia frees the penis from deep tethering. Following a circumcising incision, the preputial skin is split on the ventral surface. Anchoring sutures are placed at the penopubic and penoscrotal junctions between dermis and Buck's fascia to prevent recession. Skin resurfacing is performed by incising the dorsal penile skin and rotating the flaps ventrally.

Results: All patients were found to have a protuberant penis with no evidence of recession and adequate skin coverage with a median follow-up of 8 months. Post op urinary retention developed in one patient who required a dorsal preputial releasing incision to relieve intra-operative tension from skin closure.

Conclusions: This concealed penis repair provides a technically feasible approach with good cosmetic results.

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TECHNIQUE FOR STONE REMOVAL FROM PATIENTS AFTER AUGMENTATION CYSTOPLASTY AND BLADDER NECK RECONSTRUCTION PROHIBITING URETHRAL ACCESS

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Introduction: Bladder calculi after augmentation cystoplasty occurs in 10-50% of patients. We report a technique using a laparoscope or nephroscope placed under direct vision through a fresh tract to avoid the scarred suprapubic (SP) tube tract.

Methods: Six children age 7-14 years old (median 10) with bladder stones after augmentation cystoplasty, bladder neck reconstruction and Mitrofanoff had stones sizes of 3-6cm (median 4). Cystoscopy through the Mitrofanoff is done to visualize the stones and fill the pouch. A 10mm incision is made followed by dissection down to the pouch. Stay sutures are placed to control the tract. An amplatz sheath for passage of the nephroscope or a laparoscopic trocar for a working element with the camera through the Mitrofanoff can be used.

Results: There were no intraoperative complications and no conversion to open. None developed bladder perforation or urine leak and all were stone free at 3-24 months (median 14).

Conclusions: This technique for percutaneous stone removal allows minimally invasive, controlled access to the bladder avoiding potential injury to bowel or the vessels. A site separate from the previous SP tube tract avoids the scarred tissue that may not heal leading to urine leak.

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CONGENITAL ANTERIOR URETHRAL VALVES (AUV) AND DIVERTICULI (CAUD): A SYSTEMATIC REVIEW OF 300 REPORTED CASES FROM 1930 TO 2007

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Introduction: Data on congenital anterior urethral obstruction is based on small case series. We attempt to better describe the presentation and prognosis of (AUV) and (CAUD).

Methods: We systematically reviewed MEDLINE, PubMed and EMBASE for the terms AUV and CAUD in English. Reports were reviewed for patient demographics, symptoms, urinary dysfunction, treatments and outcomes.

Results: 98 English studies representing 308 cases, including three of our own patients, were reviewed. Patients averaged 4 years of age and were diagnosed as having AUV (n=145) CAUD (143) or other (20). AUV presented with cystitis and decreased force of stream, while CAUD presented with dribbling and penile swelling. Azotemia (33%), hydronephrosis (51%) and vesicoureteral reflux (44%) were diagnosed on presentation. VCUG demonstrated lesions of the bulbar (33%) penoscrotal (23%) and penile urethra (44%). Transurethral resection was the initial treatment of AUV while CAUD were often managed by open repair. Of reported outcomes, azotemia (21%) and hydronephrosis (18%) were persistent after treatment.

Conclusions: This review of AUV and CAUD demonstrates that urinary dysfunction may be understated for these lesions. Long-term follow-up of patients is indicated.

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MULTIVARIATE ANALYSIS OF RISK FACTORS FOR URINARY TRACT INFECTIONS AFTER ENDOSCOPIC INJECTION OF DEXTRANOMER-HYALURONIC ACID

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Introduction: Dextranomer-hyaluronic acid (Dx/HA) is an acceptable treatment option in the management of vesicoureteral reflux (VUR). The purpose of this study is to determine prevalence and risk factors for post-operative UTI.

Methods: A retrospective cohort study was performed of children with primary VUR treated with Dx/HA from 2002 to 2007. Demographics and outcomes were abstracted from the medical record. Risk factors including female gender, pre-operative grade, recurrent pre-operative UTI, voiding dysfunction, and persistent VUR were analyzed in a logistic regression model.

Results: 311 children (464 kidneys) were treated. 85% presented with UTI. Mean age 5.7 years. Mean follow-up 2.6 years. Post-op UTI occurred in 12% (3% febrile). 15 patients with a negative VCUG after Dx/HA had a UTI. 8 of the 15 had recurrent VUR and half of these had a febrile UTI. Of the entire cohort, only recurrent pre-operative UTI (O.R. 2.2, p=0.03) and dysfunctional voiding (O.R. 3.3, p=0.001) were significant risk factors. Those with persistent VUR trended towards a higher risk (O.R. 1.4) but missed statistical significance.

Conclusions: In our series, patients with multiple UTI's and voiding dysfunction before Dx/HA treatment for VUR have an increased risk of a post-operative UTI.

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BILATERAL EXTRAVESICAL URETERAL REIMPLANTATION IN TOILET-TRAINED CHILDREN: A SHORT-STAY PROCEDURE WITHOUT URINARY RETENTION

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Objectives: A critical pathway and modification of surgical technique were developed to determine if the bilateral extravesical ureteral reimplantation (BEUR) could be performed in toilet-trained children with discharge after a one-day hospitalization without urinary retention.

Methods: We evaluated all toilet-trained children undergoing BEUR using a modified technique, which limits ureteral mobilization, ureteral dissection, and detrusor dissection. Patients follow a strict postoperative critical pathway.

Results: Eighty-two toilet-trained children (63 girls and 19 boys) between 1.9 to 12.8 years of age (mean of 4.6 years) were evaluated. Seventy-eight patients were discharged on the first postoperative day and most recently 4 patients were discharged on the same day as surgery. All patients were able to void postoperatively without any instances of urinary retention. None of the children had acute urinary tract infections or required rehospitalization.

Conclusions: Therefore, BEUR can be performed in toilet-trained children after a one-day hospitalization without postoperative urinary retention. Most recently, this has been accomplished as an outpatient procedure.

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MULTIVARIATE ANALYSIS OF SURGICAL OUTCOMES AFTER ENDOSCOPIC INJECTION OF DEXTRANOMER-HYALURONIC ACID FOR PRIMARY VESICOURETERAL REFLUX

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Introduction: Dextranomer-hyaluronic acid (Dx/HA) is an acceptable treatment option in the management of vesicoureteral reflux (VUR). The purpose of this study is to review our experience with Dx/HA and determine risk factors that lower outcomes.

Methods: A retrospective cohort study was performed of children with primary VUR treated with Dx/HA from 2002 to 2007. Patient demographics, surgical details, and outcomes were abstracted from the medical record. Risk factors including gender, VUR grade, nephropathy, recurrent UTI, and voiding dysfunction were analyzed in a logistic regression model. Success was defined as no VUR.

Results: 311 children (464 kidneys) were treated. 85% presented with UTI. Mean age was 5.7 years. Mean follow-up 2.6 years. Success rate by patient was 70% after 1 injection and 80% after 2. By renal unit, the success was 79% after 1, 90% after 2. High-grade VUR was a significant risk factor (O.R. 3.2, p=0.002). No learning curve and no differences among surgeons were noted.

Conclusions: Dx/HA management of VUR successfully treats up to 90% of renal units after 1 or 2 injections. High grade VUR is a significant risk factor for treatment failure.

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REDO HYPOSPADIAS REPAIR WHILE SPARING THE URETHRAL PLATE

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Introduction: Failure of attempted hypospadias repair can be devastating to the patient.Methods for redo repair have been described with variable success. Identification of techniques and variables that contribute to the most successful repair could minimize morbidity experienced by these patients.

Methods: After IRB approval, we reviewed the medical records of all patients who underwent redo hypospadias repair performed by a single surgeon (JVK). Successful definitive hypospadias repair was defined as cosmetically acceptable meatus without fistula or stricture.

Results: 48 patients met criteria for this study.Prior to their redo procedure, these 48 patients underwent a total of 72 procedures, mean 1.5 procedures/patient (range 1-5). Vascularized flap or Thiersch-Duplay was used in 97.9% of cases. There were complications in 6 patients.Follow up was a mean of 19.6 months.Initial redo success rate was 87.5%.

Conclusions: Patients can experience a lasting successful outcome after redo hypospadias repair. Complications stemming from our repairs were few, and of low morbidity.Vascularized flaps have often been scrutinized as having a high complication rate. This is a lower complication rate than other outcome data reported in the literature.

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PSEUDO- DISTAL URETERAL STONE RESULTING FROM CALCIFIED DEFLUX IMPLANT

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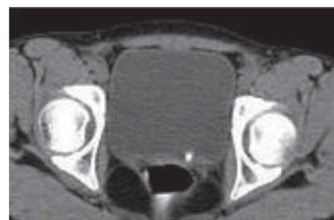
Introduction: Endoscopic injection of Deflux is gaining popularity as a treatment option for vesicoureteral reflux (VUR). Calcification of this injection site may be confused for a ureteral stone in a child presenting with abdominal pain.

Patient Presentation: A 12 year old girl presented to an outside Emergency Department with complaints of left lower quadrant pain, nausea, and emesis. History was significant for Grade II left VUR treated endoscopically with Deflux five years prior. Evaluation with CT showed a calcification in the distal left ureter (Figure 1), interpreted as a ureteral stone. The patient presented to our institution with unresolved symptoms, and repeat US confirmed the CT findings. While this calcification presumably represented the previous Deflux injection, after her pain did not improve with conservative measures, cystoscopy and retrograde pyelogram were performed for confirmation.

Discussion: This is the second reported case in which a calcified Deflux site was mistaken for a ureteral calculus. Microcalcification of the implant has been demonstrated on histologic studies, and we believe that this may correspond to gross areas of calcification on imaging.



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AVAGARD™ IN PEDIATRIC LAPAROENDOSCOPIC SURGERY

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Introduction: Avagard™, chlorhexidine gluconate 1% solution and ethyl alcohol 61% w/w, is a scrubless, waterless, and brushless hand antiseptic in preparation for surgery. We compared hand brush scrub preparation to Avagard in preparation for laparoendoscopic operations in children.

Methods: We evaluated the first 250 patients that we used Avagard as a preoperative hand antiseptic and compared them to the last 250 consecutive patients that we performed traditional antiseptic-impregnated hand brush scrubbing in preparation for laparoendoscopic procedures. Patients and surgeon were monitored for complications. A cost analysis was performed.

Results: There were no wound infections in the Avagard group and 1 in the hand-scrub group, while 1 UTI and none, respectively (not statistically significant). Neither patient nor surgeon experienced any side effects in either group. Avagard use was cost effective (US$0.45 vs. US$1.04, respectively) and more time efficient.

Conclusions: Therefore, Avagard is an effective, safe, and easy to apply surgical hand preparation for pediatric laparoendoscopic surgery. Its use is time efficient and cost effective compared to traditional surgical hand scrub.

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CIRCUMCISION REVISION FOR ASYMMETRIC REDUNDANT SKIN RESULTING IN MINIMAL SUTURE LINES

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Objectives: A technique for circumcision revision for asymmetric redundant penile skin is described that creates a symmetric, circumferential mucosal collar, uniform penile skin, and suture lines only around the mucosal collar and the median raphe.

Methods: All children who underwent circumcision revision using the following technique were evaluated. The penis is degloved and Byar's flaps are created. The flaps of penile skin are rotated ventrally around the penis allowing uniformity of the penile skin and excision of redundant non-uniform skin. The penile shaft skin is sutured to the mucosal collar and the excessive ventral skin is excised with suturing of the flaps ventrally with recreation of the median raphe.

Results: Eighty consecutive boys (median of 1.7 years) underwent this technique of circumcision revision. All patients had a cosmetically acceptable penis with a symmetric, circumferential mucosal collar, uniform penile skin, and suture lines only around the mucosal collar and the median raphe without any complications.

Conclusions: This straightforward technique for circumcision revision allows for a penis with reproducible results that looks similar to a well-performed circumcision.

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LEARNING CURVE FOR ROBOT-ASSISTED LAPAROSCOPIC PROSTATECTOMY DOES NOT COMPROMISE SURGICAL MARGIN OUTCOMES

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Introduction: Robot-assisted laparoscopic prostatectomy (RALP) has been criticized for its slow, steep learning curve. Many purport this curve comes at the expense of decreased oncologic outcome, which has been measured by margin positive rates (MPR). We report the MPR in our early experience.

Methods: The initial 56 cases from a single surgeon were reviewed at a large tertiary referral center. The surgeon had formal fellowship training in urologic oncology, but no formal fellowship training in laparoscopy. MPR were assessed for all patients.

Results: Patients presented at an average age of 59 yrs with an average PSA of 6.19 (range 2.7-11.2). Final pathologic staging was 75% (42/56) for pT2, 23.2% (13/56) for pT3, and 1.8% (1/56) for pT4. MPR was 19.6% (11/56) overall. MPR for T2 and T3 stages was 7.1% (3/42) and 53.8% (7/13), respectively.

Conclusions: Overall MPR in the learning curve of RALP is comparable to published series of both open RRP and experienced RALP series. This is especially notable in those with pT2 disease (MPR 7.1%). The difficulty in acquiring this technique does not seem to negatively affect immediate surgical outcomes.

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TRIFECTA OUTCOMES IN PREOPERATIVELY POTENT AND CONTINENT MEN AFTER NERVE SPARING ROBOTIC LAPAROSCOPIC RADICAL PROSTATECTOMY

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Introduction: We evaluated trifecta outcomes (continence, potency and undetectable PSA) for preoperatively continent and potent men following robotic laparoscopic radical prostatectomy (RLRP) with bilateral nerve sparing technique.

Methods: The prospective RLRP database was analyzed for patients with ≥1 year follow up. Continence and potency were evaluated using both UCLA-PCI questionnaire (no pads, erections sufficient for intercourse) and as reported at patient-surgeon encounter. Trifecta rates were calculated for both definitions. PSA>0.05 ng/ml was defined as biochemical recurrence.

Results: Out of 1348 RLRP patients operated between February 2003 and January 2008, 380 were continent and potent preoperatively (per UCLA-PCI) and had at least 1 year follow up. The subjective (per patient-surgeon encounter) and objective (per UCLA-PCI) trifecta rates were 34% vs 16%, 52% vs 31%, 71% vs 44% and 76% vs 44% at 3,6,12 and 24 months respectively. The differences between the values are statistically significant (P<0.0001).

Conclusions: Trifecta rates following RLRP are similar to previously reported for open radical prostatectomy but vary significantly depending upon definitions applied for postoperative continence and potency.

UCMC trifecta outcomes report

	3 Months	6 Months	12 months	24 months
PSA recurrence free	99% [illegible]	97% [illegible]	96% [illegible]	91% [illegible]
Subjective Continence	57% [illegible]	80% [illegible]	92% [illegible]	98% [illegible]
Subjective Potency	57% [illegible]	63% [illegible]	82% [illegible]	93% [illegible]
Subjective trifecta	34% [illegible]	52% [illegible]	71% [illegible]	76% [illegible]
Objective Continence	33% [illegible]	60% [illegible]	73% [illegible]	80% [illegible]
Objective Potency	44% [illegible]	50% [illegible]	62% [illegible]	69% [illegible]
Objective Trifecta	16% [illegible]	31% [illegible]	44% [illegible]	44% [illegible]

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CRITICAL EVALUATION OF HISTOPATHOLOGIC DIFFERENCES BETWEEN ROBOTIC ASSISTED AND OPEN PROSTATECTOMY SPECIMENS

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Introduction: Few studies have critically evaluated histopathologic parameters that may correlate with margin status for robotic assisted laparoscopic prostatectomy (RALP) vs. open radical retropubic prostatectomy (RRP) specimens.

Methods: A blinded, retrospective analysis was performed of 61 consecutive RALP and 61 RRP cases. Prostate H&E sections were assessed for positive surgical margins (PSM), capsule integrity, cautery artifact, Gleason sum (GS), and pathologic stage. Relevant clinical data was gathered from the medical record.

Results: RALP and RRP groups were well matched for PSA, stage, GS, nerve-sparing, gland size and blocks submitted. Overall and prostatic apex PSM rates were lower in the RALP group (16.4% vs. 27.9%, p=0.19; 6.6% vs. 19.7%, p=0.058). Extensive PSM at the apex were more common with RRP (p=0.011). There were significantly fewer RALP cases with loss of capsule integrity at the prostatic apex and anterior/lateral gland (16% vs. 36%, p=0.023; 3% vs. 23%, p=0.0022), but no differences elsewhere.

Conclusions: The RALP cases showed a trend toward lower PSM rate, particularly at the prostatic apex. This may be correlated with better integrity of the prostate capsule at the apex and anterior/lateral gland.

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RADICAL PERINEAL PROSTATECTOMY: A LEARNING CURVE?

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Introduction: With the advent and emergence of Robotic-Assisted Laparoscopic Prostatectomy, along comes a steep learning curve. Radical Perineal Prostatectomy is another equal alternative for local cancer control, which can be mastered.

Methods: Using the William Beaumont Hospital Prostatectomy database, we analyzed peri-operative data from two surgeons performing radical perineal prostatectomies from their initial 71 cases to determine a learning curve.

Results: Over time, data between the first and last quarters showed consistent, excellent results in terms of skin time (142 SD +/- 26 and 137 SD +/- 24 min), blood loss (426 SD +/- 222 and 368 +/- 221cc), and length of stay (1.4 SD +/- 0.8 and 1.2 SD +/- 0.6 days), without significant change. However, zero positive margins were obtained in the 4th quartile representing a significant change and possibly representing a learning curve.

Conclusions: These data show that excellent, reproducible results can be obtained using basic surgical principles, without incorporating expensive technology and resources.

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EVOLUTION OF THE OPEN RADICAL RETROPUBIC PROSTATECTOMY (RP) IN THE MINIMALLY INVASIVE ERA - HOW HAVE OPEN SURGEONS (OS) RESPONDED TO THE RISE OF MINIMALLY INVASIVE SURGERY (MIS)?

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Introduction: In response to reduced morbidity and convalescence seen in MIS, OS have modified their management of patients undergoing RP.

Methods: A survey to members of the Society of Urologic Oncology assessed competition from MIS, changes in operative technique, peri-operative management, and follow-up. MIS-influence on change was scored from 0-4 (0=no, 1=slight, 2=moderate, 3=great, 4=complete) with major influence defined as scores 3 or 4.

Results: Of 85 surveys returned, 24% report reduced case volume due to competition from MIS, with 32% now performing MIS. OS cite major MIS-influence in reducing incision length-33%, operative time-12%, and blood loss-17%. OS cite major MIS-influence to use new instruments-44% or loupes-9%, alter dissection-31% or anastamosis-12%, and increase hemostatic agent use-19%. Major MIS-influence has reduced length of stay-28%, days to regular diet-18%, days with drain-16% or Foley-15%, days off work-25% or exercise-21%. MIS has increased use of clinical pathways-9% and validated questionnaires-13%.

Conclusions: Formal assessment of OS finds that MIS not only serves as major competition, but has influenced them to improve surgery, alter technique, reduce convalescence, and alter follow-up of RP patients.

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OUTCOMES OF RADICAL PROSTATECTOMY (RP) FOR PATIENTS WITH CLINICAL STAGE T1A AND T1B DISEASE

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Introduction: The appropriate management of patients with clinical stage T1a/b prostate cancer (CaP) is subject to debate with a recent report suggesting that a considerable proportion had adverse pathology features in the RP specimen (*J Urol* 2007; 178: 1277). On multivariate analysis, progression-free survival for these patients was similar to their counterparts with stage T1c disease. Our objective was to re-examine this issue in our surgical cohort.

Methods: 3478 men underwent RP by a single surgeon. From this cohort, we identified 29 men with T1a and 83 men with T1b CaP. Statistical analysis was used to compare these patients to men with clinical stage T1c CaP.

Results: Patients with T1a and T1b CaP were significantly older and a similar racial distribution as the T1c group. Organ-confined disease was significantly more common among men with T1a than T1b/T1c disease. The 10-year progression-free survival rates were similar between the groups. Moreover, on multivariate analysis with other prognostic variables, stage T1a/T1b CaP had a similar risk of progression to the T1c group.

Conclusions: T1a/T1b CaP can have aggressive features and have a similar rate of progression to T1c with the majority curable with RP.

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PROSTATE MONO BRACHYTHERAPY (PMB) IS AN EFFECTIVE TREATMENT OPTION FOR LOW INTERMEDIATE RISK GLEASON 7 PROSTATE CANCER

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Introduction: PMB is an accepted treatment option for Gleason (Gl) 6 prostate cancer. In individual cases, patients with Gl 7 cancer with concerns of erectile dysfunction often elect to undergo PMB. We analyzed our database with the hypothesis that PMB can be an accepted treatment option for Gl 7 cancer.

Methods: We analyzed 61 patients from our database that underwent PMB for Gl 7 cancer and compared to 56 pts with Gl 6 cance r- all with a minimum 4 yrs f/u. We subdivided the Gl 7 cancers into 3+4 (48) and 4+3 (13).

Results: The mean baseline PSA of both the groups were comparable; Gl 6 - 6.67; overall Gl 7 –6.70. In Gl 6 group, the mean PSA at 4 yrs was 0.18±0.20 with 3.5% biochemical failure rate (ASTRO). In Gl 7 group with 3+4 cancer, the mean PSA at 4 yrs was 0.16±0.17 with 6.2% biochemical failure rate; 4+3 group, the mean PSA at 4 yrs was 0.70±0.74 with 23% biochemical failure rate. There were 3 failures in the Gl 3+4, 3 in 4+3 grp and 2 in Gl 6 - all 8 failures occurring between 2 and 3 yrs.

Conclusions: Our intermediate data indicates that PMB is an acceptable treatment option for low intermediate risk Gl 7 cancer. At 4 yrs, our biochemical cure rate for Gl 7 (3+4) cancer (94%) was comparable to Gl 6 (97%).

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RADICAL PROSTATECTOMY AS MONOTHERAPY FOR PATIENTS WITH PATHOLOGICALLY CONFIRMED HIGH GRADE PROSTATE CANCER

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Introduction and Objectives: We report the outcome of high-grade prostate cancer (HGPC) treated with radical prostatectomy (RP) alone and report cancer-related symptoms.

Methods: 144 men who received RP alone for prostate cancer were found to have Gleason 8-10 cancer. Univariate and multivariate analyses assessed the effects of variables on survival and PSA recurrence. Kaplan-Meier analysis was used to calculate event free survival.

Results: The overall median follow-up was 62 months. Nineteen percent had organ confined cancer, 33% had specimen confined cancer, and 90% had no nodal metastasis. Kaplan-Meier analysis resulted an OS of (5-yr, 90%; 10-yr, 75%), CSS (5-yr, 92%; 10-yr, 79%), and BRFS (5-yr, 24%). Using univariate analysis preop PSA, tumor volume, Gleason score, stage, surgical margin status, and specimen-confined status were found to significantly affect BRFS. On multivariate analysis, only preoperative PSA and stage were significant. Cancer-related symptoms were reported by only 9 patients with a median follow-up time of 33 months.

Conclusions: HGPC can be treated with RP with acceptable 10-year CSS (79%). PSA recurrence free follow-up is poor (5-year, 24%). Few patients report symptoms associated with PSA recurrence after RP.

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LONG-TERM OUTCOMES FOR CLINICAL LOW RISK PROSTATE CANCER AT TEN YEARS FOLLOWING RADICAL PROSTATECTOMY

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Introduction: Long-term outcomes for low risk prostate cancer (CAP) after radical prostatectomy (RP) are poorly defined. We sought to determine the clinical relevance of PSA and biopsy Gleason score (GS) on PSA free recurrence (PFR), prostate specific survival (PSS), and overall survival (OS) for patients with low risk disease at ten years following RP.

Methods: We identified 846 CAP cases that were defined as low risk (PSA<10, GS<6, clinical T1c) and underwent RP from 1994-2007. The primary outcomes were PFR, PSS and OS. Kaplan Meier tested the effects of PSA and biopsy Gleason score on these primary outcomes.

Results: The mean age was 59.0 years (range 34-81) with the most common biopsy GS of 6 (89.9%) and PSA of 4-10 (71.4%). At 10 years, the PFR, PSS and OS were 94.5% (SE: 0.02), 99.8% (SE 0.03), and 90.5% (SE: 0.01), respectively (Figure); and did not vary by PSA (PSA<4 vs. 4-10) or GS (<6 vs. 6).

Conclusions: Patients with clinical T1c, Gleason <7, and PSA <10ng/ml CAP have low risk of developing a PSA failure or dying from their cancer after radical prostatectomy. Long-term outcomes at 10 years from these clinical data are irrespective of final pathologic grade, stage or margin status following RP.

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THE EFFECT OF PRE-OPERATIVE FINASTERIDE OR LUPRON ON POTENCY FOLLOWING BILATERAL NERVE SPARING PROSTATECTOMY

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Introduction: Neoadjuvant hormone therapy (HT) has been shown to be associated with a lower positive surgical margin rates. However, less is known about the effects of pre-operative therapy on functional outcomes. Therefore, the purpose of this study was to compare the potency rates in patients who underwent bilateral nerve sparing prostatectomy (RRP) with or without pre-operative HT.

Methods: 511 men underwent RRP who met the following inclusion criteria: (1) potent pre-operatively, and (2) no adjuvant HT or radiation therapy. Pathological and functional outcomes were compared with potency rates calculated for men with at least 18 months of follow-up and all patients were asked to rate their erections on a scale of 1 to 10.

Results: At 18 months post-operatively, the overall potency rates were 11.1% in the finasteride group, 42.2% in the lupron group, and 55% in the control group. The corresponding potency scores for these three groups were 2.0, 3.75 and 5.03, respectively.

Conclusions: Pre-operative use of either finasteride or lupron may be associated with a lower early potency rate. However, patients who were initiated on these therapies tended to have more aggressive clinical characteristics, potentially confounding the results.

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EXTRAFACIAL VERSUS INTERFACIAL NERVE SPARING TECHNIQUE FOR ROBOTIC-ASSISTED RADICAL PROSTATECTOMY: COMPARISON OF FUNCTIONAL OUTCOMES AND SIDE-SPECIFIC POSITIVE SURGICAL MARGINS RATE

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Introduction: We compared pathological and functional outcomes of interfacial (IF) and extrafacial (EF) nerve sparing (NSP) techniques for robotic laparoscopic radical prostatectomy (RLRP) patients.

Methods: A prospective database was analyzed for demographic, clinical, pathologic and functional parameters for men who underwent RLRP with bilateral NSP. UCLA-PCI questionnaire was administered preoperatively and at 1,3,6, 12 month postoperatively. The EF NSP technique has been utilized at our institution since June 2006.

Results: Out of 1225 consecutive RLRPs 95 and 557 men underwent bilateral EF and IF-NSP, respectively. Patients with EF-NSP had higher clinical stage (P=0.001), pathological GS (P=0.001) and a trend toward higher pathological stage (P=0.06). PSM rate was 13.7% for EF NSP and 19% for IF NSP patients (p=0.2) and did not differ while adjusted to clinical (P=0.4) or pathological stage (P=0.6). It was higher for IF group (11.0%vs1.2%, P=0.004) on the left side but not on the right (7.8% vs 3.5%, P=0.1). Postoperative UF, UB and SF,SB were not different except higher 6 month SF(P=0.03) and SB(P=0.01) for IF NSP group.

Conclusions: IF and EF-NSP techniques did not result in different PSM rates and functional outcomes.

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ROBOTIC ASSISTED LAPAROSCOPIC PROSTATECTOMY AFTER TURP: A MULTI-INSTITUTIONAL ANALYSIS OF ONCOLOGIC AND QUALITY OF LIFE OUTCOMES

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Introduction: Surgeons have increasingly tackled complex robotic assisted laparoscopic prostatectomies (RALP), including those with prior transurethral procedures for BPH (TURP). We assessed pathologic and clinical outcomes in these patients.

Methods: Preoperative information, operative statistics, pathologic data, pre-and post operative urinary and sexual function data were prospectively entered into databases at 2 institutions. All patients with a prior history of TURP were included.

Results: 48 patients underwent RALP after TURP. No conversions or transfusions were required. PSMs were seen in 31.3% of patients, specifically in 11.5% and 54.5% patients with pT2 and pT3 tumors, respectively. Overall, 46.8% patients with ≤ cT2c disease had pathologic upstaging. Of 11 patients with cT1a-cT1b disease, 45% had pT3 disease and 36% had PSM. 43.4% of patients potent preoperatively were potent postoperatively. 6 months postoperatively, nearly 90% of patients used ≤1 pad/day for incontinence.

Conclusions: RALP is feasible in patients who have undergone previous TURP. They had higher rates of pathologic upstaging and upgrading, possibly impacting PSM rates. Postoperative continence was excellent and is comparable to historical RALP series.

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BLADDER NECK CONTRACTURE FOLLOWING RADICAL RETROPUBIC PROSTATECTOMY UTILIZING AN INTUSSUSCEPTED VESICO-URETHRAL ANASTOMOSIS: INCIDENCE WITH LONG-TERM FOLLOW-UP

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Introduction: Bladder neck contracture (BNC) is a complication of radical retropubic prostatectomy (RRP). Incidence ranges from 2-5%. Evaluate the incidence of BNC after intussuscepted vesico-urethral anastomosis (IVUA).

Methods: Retrospective chart review was conducted of 406 patients who underwent RRP by a single surgeon for localized prostate cancer from March 1998 through July 2007. All patients underwent IVUA. The technique involves a looped urethral stitch using six double-armed sutures that are drawn inside-to-out through the bladder neck. When the sutures are tied, the urethra is intussuscepted into the bladder neck. BNC was defined as obstructive symptoms with cystoscopic findings.

Results: Follow-up on the initial 26 patients was 1 year. The subsequent 380 patients' average follow-up was 47.8 months. Three patients developed BNC. One patient had a prior TURP. One patient's catheter was removed on post-op day two in the presence of a suprapubic tube and developed BNC at a dry anastomosis. One patient had no known risk factors. The overall incidence of BNC was 0.74% (3/406).

Conclusions: IVUA has a lower incidence of BNC compared to rates cited in current literature.

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PROSTATE CANCER DISEASE-FREE SURVIVAL AFTER RADICAL RETROPUBIC PROSTATECTOMY IN PATIENTS OLDER THAN 70 YEARS COMPARED TO YOUNGER COHORTS

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Introduction and Objectives: Assess RRP for treating men > 70 years with confined prostate cancer, and compare biochemical progression-free survival with younger cohorts.

Methods: 689 consecutive patients (RRP) were categorized: less than 50, 50 to 70,and > 70 years. Pre- & post-operative cancer-specific characteristics were assessed.

Results: No statistical significant difference in clinical parameters (PSA, Gleason, stage, percent & number of positive biopsy cores) and pathologic findings (margin, lymph node status, extra-capsular extension, lympho-vascular invasion, and pathologic Gleason score). The rate of seminal vesicle invasion and prostate volume increased with advancing age ($p=0.034$ and $p<0.001$). In multivariate logistic regression analysis, age was not associated with SV invasion. The 5 year PSA progression-free estimates for patients <50, 50-70, and >70 years were 82% (95% CI: 69%-96%), 82% (95% CI: 78%-86%), and 65% (95% CI: 43-86), respectively ($p=0.349$). Overall and cause specific mortalities were not different.

Conclusions: RRP could be considered a standard treatment option in older men - studies are necessary to assess the survival and quality of life after RRP versus watchful waiting, in patients older than 70

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VITAMIN D REPLETION DOES NOT ALTER URINARY CALCIUM EXCRETION IN POSTMENOPAUSAL WOMEN

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Introduction: Vitamin D (VD) is required for calcium absorption and is prescribed to prevent bone loss. However, its potential to promote hypercalciuria is a concern.

Methods: Healthy postmenopausal women (n=19) with VD insufficiency (serum 25(OH)D 16-24 mg/dL) underwent VD repletion (50,000 IU vitamin D2/d for 15 d). During 2 overnight stays in a metabolic unit, subjects ate diets that mirrored the nutrient composition of their usual diets. Calcium intake was 832 mg/d. 24-h urine samples were collected.

Results: All women were VD repleted (25(OH)D pre- and post-treatment, 22 and 63 mg/dL; $p<0.0001$). Of 12 women with paired 24-h urines, calcium excretion did not change (219 pre- vs. 207 mg/d post-treatment; $p=0.60$). Among 4 women with hypercalciuria (>247 mg/d), calcium excretion decreased in 3 (from 377 to 312 mg/d); difference not statistically different.

Conclusions: VD supplementation did not increase urinary calcium in healthy postmenopausal women. Stone formers are at risk for premature bone loss and/or VD insufficiency. Appropriate VD supplementation, along with general stone prevention measures, may be safe in stone formers.

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EFFECT OF DIETARY CHANGES ON URINARY OXALATE EXCRETION IN HYPEROXALURIC CALCIUM OXALATE STONE FORMERS

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Introduction: Diet is a factor in calcium oxalate (CaOx) urolithiasis, yet controversy exists regarding clinical recommendations. Approximately 20% of CaOx stone formers have hyperoxaluria (≥45 mg oxalate/d). Calcium supplementation to bind gastrointestinal (GI) oxalate has been suggested, but evidence of therapeutic efficacy is lacking.

Methods: Of 144 adult stone formers seen by a Registered Dietitian between 09/06 and 09/07, 26 (18%) had hyperoxaluria. Of those with ≥2 analyses, 22 patients were identified and retrospectively separated into groups of diet changes alone (diet group) or calcium citrate with meals in addition to diet changes (Ca-cit group). Comparisons within and between groups were made.

Results: Urinary oxalate decreased in both groups (from 56 to 42 and 60 to 47 mg/d in the diet and Ca-cit groups, respectively); $p=0.002$ and 0.044, respectively. CaOx supersaturation decreased in both groups (from 2.92 to 1.72 and 2.83 to 1.61 in the diet and Ca-cit groups, respectively); $p=0.047$ and 0.024, respectively. Urinary calcium did not change in either group.

Conclusions: GI binding of oxalate by calcium is an effective strategy for hyperoxaluria whether mediated by calcium citrate or calcium-containing foods with meals.

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RANDALL'S PLAQUE (RP): GROUND ZERO FOR STONE FORMATION IN IDIOPATHIC CALCIUM OXALATE STONE FORMERS (ICSF)

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Introduction: The objective of this study was to test the hypothesis that in ICSF, stones grow on RP; if this were the case we would expect to find that all attached stones are attached to RP.

Methods: ICSF undergoing PNL or URS. All renal papillae were imaged using a digital endoscope. Stones were recorded by the operating surgeon as being attached or unattached; for all attached stones the surgeon determined if the site of attachment was to plaque. Statistical analysis was performed using fixed sample testing and group sequential sampling. We tested the null hypothesis $p=.50$ where p denotes the proportion of removed stones confirmed to be attached to plaque.

Results: There were 12 renal units (7 PNL, 5 URS) and a total of 115 stones. Stones were CaOx. 90 stones were attached; 81 to plaque. For the other 9, the site of attachment could not be visualized with sufficient clarity to judge. The final point estimate for the number of stones attached to plaque was 0.726 with a 95% confidence interval of (0.560,0.892). Put another way the probability that attached stones are attached to plaque at no higher than chance is <0.05.

Conclusions: This data shows that there is a high probability that ICSF stones begin as overgrowth on RP.

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STONE FORMATION DURING PREGNANCY: AN INVESTIGATION INTO STONE COMPOSITION

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Introduction: Although there is a body of literature confirming that different stone compositions predominate for different age and sex cohorts, there have been no similar reports characterizing the nature of stone disease during pregnancy. We performed a multi-institutional study to define the composition of renal calculi diagnosed in the antepartum period.

Methods: We retrospectively reviewed the records from two stone referral centers of all patients diagnosed with a kidney stone during pregnancy from 6/01 through 9/07.

Results: 27 patients were identified, mean age of 26.8 years (21-34). 20 (74%) had no history of prior stones. Stones were removed in the first, second, third trimester, and immediately post-partum in 4%, 48%, 22%, and 26% respectively. 19 stones (70%) were predominantly calcium phosphate (CAP) and 8 (30%) were composed predominantly of CaOx. Of the seven patients with prior stone history, three patients had previously formed CAP stones and four had CaOx stones.

Conclusions: CaOx calculi are the most common stone in non-pregnant women of a comparable age as our subjects. However, our present data suggests that stones detected during pregnancy are most commonly composed of CAP.

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PATIENT FOLLOW-UP AFTER EMERGENCY ROOM (ER) VISITS FOR URETEROLITHIASIS

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Introduction: To determine patterns of follow-up for patients diagnosed with ureterolithiasis in the ER.

Methods: An IRB approved retrospective chart review identified 556 patients diagnosed with ureterolithiasis in the ER at our institution over a two year period. Patient demographics, clinical data, and physician notes were reviewed. A telephone survey was performed for all patients to obtain missing and confirm previously recorded data.

Results: 198/556 patients were identified as first time stone formers; 132 agreed to participate in the study. Of these132 patients, 116 were discharged without urologic consultation. Of these, 71 patients (61%) followed-up with a urologist, and 27 (23%) followed-up with a primary physician. There were 44 patients with ureterolithiasis greater than 4 mm, and 38 (86%) patients either received urologic consultation in the ER or followed-up with a urologist as an outpatient ($p<0.05$).

Conclusions: A majority of patients seen in our ER for ureterolithiasis follow-up with a urologist as outpatients. This percentage increases with greater stone size. Multi-institutional studies are required to confirm this data.

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STAGED URETEROSCOPIC TREATMENT OF LARGE RENAL CALCULI IN MORBIDLY OBESE PATIENTS

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Introduction and Objectives: We sought to establish the safety and efficacy of planned multi-session staged ureteroscopy (URS) for large renal calculi in morbidly obese patients.

Methods: We retrospectively analyzed patients who underwent multiple URS procedures. Inclusion criteria included body mass index (BMI) > 30, stone size > 1.5cm, and those with a pre-operative plan to perform multi-session URS. End points were residual stone burden, additional procedures, and complications. Stone free was defined as no stone visualized on postoperative imaging.

Results: A total of 7 patients underwent 16 procedures. Mean BMI was 46.8 (SD=6.6). Mean stone size was 3.77 cm (SD=1.99). 3 of 7 patients (43%) were stone free. Mean decrease in size was 1.98cm in those with residual stone. 3 patients required readmission (two for fever, one for pain control). Mean follow up was 0.66 years (range 0.05 to 3.17 years). No patients required follow up procedures for stones.

Conclusions: Staged URS is a safe alternative for obese patients with large stones who are not candidates for other procedures due to obesity. Although the stone free rate in this series is lower than percutaneous nephrolithotomy, overall stone burden was reduced with minimal morbidity.

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IS THE CHARLSON COMORBIDITY INDEX CORRELATED WITH THE STONE-FREE RATE AFTER EXTRACORPOREAL SHOCK WAVE LITHOTRIPSY?

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Introduction: We examined whether the Charlson comorbidity index (CCI) predicts the stone-free rate after extracorporeal shock wave lithotripsy (ESWL).

Methods: 226 adults underwent 241 ESWLs for a renal or ureteral stone(s). Age, gender, race, body mass index, CCI, comorbidities, stone size and location, shocks and power level were determined. Treatment efficacy was evaluated at a mean of 56.1 days.

Results: Stone-free rates for patients with a CCI of zero, one, and two or greater were 44.7%, 27% and 41.2% respectively. Patients with a CCI of one were 2.1 times more likely to have a residual stone burden (RSB) than patients with a CCI of zero after adjusting for location (95% CI 0.99-4.42, $p=0.05$). Patients with one comorbidity were 2.4 times more likely to have a RSB than patients with none after adjusting for location (95% CI 1.04-5.72, $p=0.04$). Patients with ureteral stones were less likely to have a RSB than patients with renal stones after adjusting for comorbidities.

Conclusions: This study demonstrates that stone location and comorbidities are significant predictors of ESWL outcome. The CCI and number of comorbidities are similar methods for the prediction of the stone-free rate after ESWL.

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RISK FACTORS FOR STONE RECURRENCE AFTER PERCUTANEOUS NEPHROLITHOTOMY

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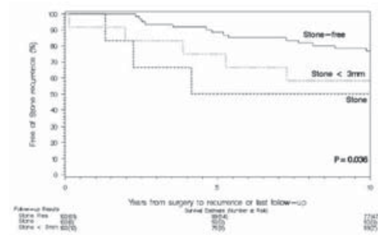
Introduction: The goal of our study is to evaluate risk factors for stone recurrence after percutaneous nephrolithotomy (PCNL).

Methods: We identified 80 patients undergoing PCNL from 1983-1985.

Results: Average follow-up was 19.2 years. 30(37.5%) had at least 1 stone recurrence. There was no difference in preoperative BMI (p=0.453) or BMI change (p=0.964) between patients that did and did not recur. Stone location (p=0.605) and stone size (p=0.238) were not predictive of recurrence. Patients with calcium oxalate monohydrate stones were less likely to recur (38.7% vs 41.6%, p=0.004) and those with calcium oxalate dihydrate (COD) were more likely to recur (31.1% vs 19.6%, p=0.006) compared to other compositions. Diabetes mellitus was not associated with recurrent stones (p=0.810). Patients with residual stones or fragments < 3 mm were more likely to recur earlier than those rendered stone free (Figure 1) p=0.015. Stone recurrences were associated with the development renal insufficiency (25% vs 2.1%,p=0.002).

Conclusions: COD stones were more likely to recur and residual fragments were associated with early stone events. Recurrent stone events increased the risk of developing renal insufficiency, stressing the need for removal of all stone material at PCNL.



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USE OF A NON-INVASIVE MONITORING SYSTEM TO IMPROVE FLUID INTAKE IN NEPHROLITHIASIS PATIENTS

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Introduction: We hypothesize that the ability to self monitor ones own hydration status (urine specific gravity) using StoneGuard II Test Strips (UriDynamics Inc., Indianapolis, IN) will improve urine volume, thereby reducing the risk of future stone events.

Methods: We prospectively randomized 29 adult patients into our IRB approved protocol. Stone forming patients with an average urine volume <2L on two consecutive 24-hour urine collections were eligible. Control group and test strip (TS) patients were given the same verbal and printed materials on increasing fluid intake. The TS group received additional materials and instructions to monitor their urine specific gravity (SG) twice a day and adjust their fluid intake to maintain a SG of 1.010 or less. At the end of three months, all patients had a single 24-hour urine. Exclusion criteria included: diuretic therapy, pregnancy, renal insufficiency, infectious stone disease, and known bowel disease.

Results: Table 1 summarizes the baseline to 3-month follow-up data.

Conclusions: The StoneGuard II Test Strips appear to be effective in helping patients to increase their fluid intake.

	Control n=15	Test Strip (TS) n=14
Male:Female	6:9	5:9
Baseline		
Volume (L)	1.05	1.42
Calcium	215	196
Oxalate	29	32
Sodium	146	155
3-month follow-up		
Volume (L)	1.72	2.41
Calcium	221	312
Oxalate	38	44
Sodium	171	234
Average age	41.4	50.37
Average baseline creatinine	1.0	0.98

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FLEXIBLE URETEROSCOPY FOR PROXIMAL URETERAL STONES: 2 YEAR SINGLE SURGEON EXPERIENCE

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Introduction: We report a series of proximal ureteral stone ureteroscopies (URS) presenting data in the format recommended by the AUA Ureteral Stone guideline panel.

Methods: A retrospective review of a single surgeon's 2 year URS experience was performed. Of the 236 URS, 55 of these involved a proximal ureteral stone.

Results: Mean age was 57 years and average BMI was 32. Average ureteral stone size was 9.4mm. 53% had been preoperatively stented. 93% were stented postoperatively. If only a ureteral stone was treated, in 92% of cases the ureter was stone free. In the 12 cases where both proximal ureteral and renal calculi were treated, in 83% the ureter was cleared, and 33% required a second procedure. 3 patients (6%) developed post-operative UTIs. One patient came to the ER for stent-related discomfort. One patient treated in a staged setting for bilateral ureteral calculi developed UTI and SIRS complicated by alcohol withdrawal requiring a 3 day non-ICU admission.

Conclusions: Proximal ureteral calculi can be successfully treated with URS the majority of the time, but the risk for persistent renal calculi and fragments exists. The complication rate is low. Obese patients (BMI>30) can also be successfully treated ureteroscopically.

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VARIATION IN THE TREATMENT OF SYMPTOMATIC UROLITHIASIS ACCORDING TO THE DAY OF HOSPITAL ADMISSION

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Introduction: Weekend hospital admission is associated with poor quality care in many clinical settings. For symptomatic urolithiasis (SU), thresholds to intervene and procedures selected may vary for weekends and weekdays.

Methods: From the 2005 Florida State Inpatient Database, we identified admissions (n=8529) to the hospital for SU using ICD-9 diagnosis codes. A logistic model was fit measuring the association between weekend admission and surgical intervention controlling for patient factors. In patients with surgery, the relationship between weekend admission and definitive surgery was assessed.

Results: We identified 6309 (73%) weekday and 2280 (27%) weekend admissions for SU. 57% underwent surgery and 30% had definitive management. Weekend admission was associated with a lower likelihood of surgery (OR 0.88, 95% CI 0.80-0.97), but was not associated with decreased use of definitive therapy (OR 1.02, 95% CI 0.90-1.17).

Conclusions: Patients with SU admitted on the weekend receive a lower intensity of care than do those admitted during the week. Rates of definitive therapy did not vary. This suggests that physicians have consistent practice styles, but lower therapeutic thresholds for intervention during the week.

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PHYSICIAN PRACTICE STYLE INTENSITY AND THE MANAGEMENT OF SUPERFICIAL BLADDER CANCER

John Hollingsworth, MD, MS; Zaojun Ye, MS; Brent Hollenbeck, MD, MS
University of Michigan

Introduction: Surveillance is important in the care of superficial bladder cancer, owing to the disease's chronicity; however, data are lacking to guide surveillance practices for it. As such, the intensity of follow-up for the disease is discretionary, translating into physician practice style variation.

Methods: Using SEER-Medicare data, we identified 27979 patients with superficial bladder cancer (1992-2005). A bladder cancer provider was linked to each patient (n=2625). These providers were sorted into 5 groups of practice intensity for surveillance patterns and use of ancillary services. We measured the relationship between practice intensity and disease outcomes.

Results: High and low intensity providers treated similar patients with respect to age, gender, and comorbidity. High intensity providers were typified by greater use of intravesical therapy, endoscopic surveillance, and urinary cytology, among others (all P-values <0.001). Patients treated by high intensity providers had improved 5-year survival (P<0.001). For superficial bladder cancer, the high intensity practice style is typified by a greater use of ancillary and surgical services.

Conclusions: Patients treated by high intensity providers have better outcomes. The underpinnings of this merit further study.

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IMPACT OF DELAY FROM SYMPTOM ONSET TO DIAGNOSIS OF SUPERFICIAL BLADDER CANCER (TA, T1, CIS)

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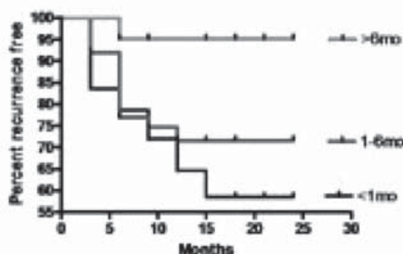
University of Iowa

Introductions and Objectives: Delay from diagnosis to cystectomy in T2 bladder cancer negatively impacts outcome. The impact of delay in superficial cancer has not been reported.

Methods: From a multi-institutional trial of BCG+IFN for superficial bladder cancer, we analyzed delay (<1 mo, 1-6 mo, >6 mo) from first symptoms to diagnosis in 541 BCG naïve patients followed to 24 months.

Results: Delay from first symptoms to diagnosis was <1 mo in 53%, 1-6 mo in 31%, and >6 mo in 16%. Patients <60 yrs had a higher proportion (26%) of longest delay (>6 mo) compared to those 60-69 (16%) and >70 (11%, p<0.001). CIS patients had longer delay (30% at >6 mo) compared to those with T1 and Ta cancer (14-15%, p=0.007). Longer delay was unexpectedly associated with improved disease-free recurrence (p=0.03); this trend persisted when evaluating only T1 patients (figure, p=0.008) in groups separated by delay from symptoms to diagnosis (all groups had similar distribution of high grade disease, 43-52%, p=0.77).

Conclusions: Delay greater than 1 month after symptom onset is common for early stage bladder cancer, but does not appear to have a direct negative impact on recurrence for BCG plus interferon treatment.



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THE ROLE OF PATHOLOGY REVIEW IN TURBT SPECIMENS IN THE ERA OF SPECIALIZED GU PATHOLOGISTS

Michael Lee, MD; Howard Levin, MD; J. Stephen Jones, MD

Introduction: The value of pathological reinterpretation of tissue slides has long been questioned. We evaluated the role of reinterpretation of TURBT slides prior to and after the subspecialization of the Department of Pathology in 2003.

Methods: A total of 78 and 116 bladder cancer patients whose outside biopsies were reinterpreted at our institution during 2002 and 2004 respectively were reviewed. Pathology reports were compared by a board-certified pathologist with GU specialization, and then cases were evaluated for changes in management by a board-certified urologist applying current standards of care. Chi-square statistical analysis was performed.

Results: Reinterpretation differed from the initial report in 27/78 and 31/116 cases in 2002 and 2004 respectively, resulting in changes in 29.5% and 20.7% of all cases (p=0.22). Of the cases that differed, 22.2% in 2002 and 41.9% in 2004 had a less favorable reinterpretation (p=0.01).

Conclusions: Referral centers must assume responsibility for establishing their own diagnosis prior to therapy, as nearly one in four cases mandated change in management. In the era of GU pathology subspecialization, a greater portion of cases was of a less favorable nature, mainly citing the involvement of the muscularis propria.

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LEVEL OF LAMINA PROPRIA INVASION INCREASES RISK OF UNDERSTAGING IN PATIENTS WITH CT1 BLADDER CANCER

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Introduction: Clinical under staging of cT1 bladder cancer potentially delays therapy and undermines survival. We evaluate clinicopathologic features associated with cT1 disease under staging.

Methods: We identified patients initially diagnosed with cT1 bladder cancer who underwent cystectomy within 4 months. Muscularis propria was present and uninvolved in initial biopsies. A logistic regression multivariable model was used for risk of understaging (≥ pT2, N+ or M+ at cystectomy) and a Cox regression model for overall survival.

Results: 26/95 (27%) patients were under staged (median follow-up 24 months). Under staged patients had greater rates of muscularis mucosae invasion (MMI) [54 versus (vs) 19%, p=0.001], mixed histology (42 vs 17%, p=0.02) and urethral involvement (31 vs 10%, p=0.03). MMI increased the risk of under staging 9-fold vs non-MMI (95% CI 1.5-54.5, p=0.01). Median overall survival (years) was lower in under staged patients (1.4 vs 10.6, p<0.001), with MMI (2.2 vs 6.5, p=0.04), and urethral involvement (25th percentiles: 2.0 vs 0.8, p=0.01) vs none.

Conclusions: MMI increases risk of under staging and may be valuable in counseling patients regarding early intervention with cystectomy vs intravesical immunotherapy.

PODIUM SESSION

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DELAYED DIAGNOSIS OF BLADDER CANCER AND SURVIVAL

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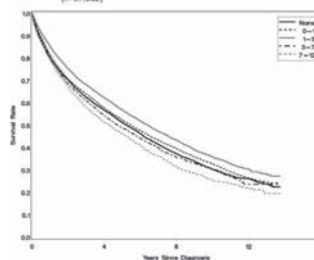
Introduction: Delays in the treatment of bladder cancer (BC) are associated with worse outcomes; however, the impact of delayed diagnosis is unknown. We sought to ascertain whether delaying BC diagnosis influenced overall survival (OS), using a population-based cohort.

Methods: Using SEER-Medicare, we assembled a cohort of 37,982 incident cases of BC diagnosed in 1992-2002. We identified the initial claim for hematuria within the year prior to diagnosis and categorized them into <1 month, 1-3 months, 3-7 months, and 7-12 month intervals. Kaplan-Meier analysis assessed the hematuria intervals on OS.

Results: Among the 37,982 cases, 78% presented with hematuria one year prior to diagnosis. The most common initial hematuria claim was <1 month of diagnosis (38%), but a significant number of cases had hematuria at 1-3 months (21%), 3-7 months (10%) and 7-12 months (9%) before diagnosis. Delaying time to diagnosis from the initial hematuria claim was associated with poorer OS (Figure 1, $p<0.001$).

Conclusions: Hematuria was a common presentation in our cohort, but nearly 1 in 5 patients had delays in diagnosis of their BC of >3 months. Earlier detection (including earlier evaluation for hematuria) may lead to improvements in BC survival.



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REDUCED BLADDER CANCER RECURRENCE WITH CARDIOPROTECTIVE ASPIRIN FOLLOWING INTRAVESICAL BACILLE CALMETTE-GUÉRIN (BCG)

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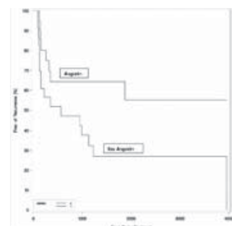
Introduction and Objectives: Non-steroidal anti-inflammatory agents (NSAIDs) have shown promise in bladder cancer chemoprevention. Here we evaluate recurrence free survival of patients taking cardioprotective aspirin following intravesical BCG for high-grade non-invasive bladder cancer.

Methods: 43 patients with high-grade non-invasive bladder cancer were treated with intravesical BCG and stratified according to whether they took cardioprotective aspirin. Kaplan-Meier log rank analysis was performed with multivariate analysis for maintenance BCG, the presence of carcinoma in situ, and smoking status.

Results: Of patients taking cardioprotective aspirin, 5-year recurrence free survival was 65% (13 of 20) versus 26% (6 of 23) without aspirin, which was significantly higher by univariate analysis (p=0.03). Aspirin was also significant in multivariate analysis (hazard ratio=0.183, p=0.0016) as well as maintenance BCG (hazard ratio=0.260, p=.02) and smoking status (hazard ratio=3.119, p=0.05).

Conclusions: Bladder cancer patients taking cardioprotective aspirin had significantly longer recurrence free survival following BCG. Results of this study support further investigation of aspirin and other NSAIDs in bladder cancer prevention.



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EFFECT OF ATORVASTATIN ON PROLIFERATION OF BLADDER CANCER CELLS TREATED WITH BACILLUS CALMETTE-GUERIN (BCG)

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MCW

Introduction: We have shown that urothelial carcinoma (UC) cells exposed to bacillus Calmette-Guerin (BCG) upregulate steroid biosynthesis via cholesterol dependent pathways. The commonly employed class of lipid lowering agents, statins, function by inhibiting the HMG-CoA reductase enzyme critical to cholesterol biosynthesis. Early clinical reports suggest that BCG efficacy may be decreased in patients taking statins. This study examined the effect of statins on the in vitro cytotoxicity of BCG on human UC cell lines.

Methods: The human UC cell lines, 253J and T24, were utilized to determine the effect of a physiologic dose of atorvastatin on cells pretreated with BCG. Cells were incubated with BCG for one hour prior to addition of 10µM of atorvastatin. Cell proliferation was assessed at 24, 48 and 72 hours using the MTT assay.

Results: In both the 253J and T24 UC cell lines, BCG cytotoxicity was found to be significantly decreased by atorvastatin.

Conclusions: Atorvastatin decreases BCG cytotoxicity in UC cell lines. This may have clinical implications for bladder cancer patients who are also taking statins to lower cholesterol.

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ROBOTIC RADICAL CYSTOPROSTATECTOMY: ONCOLOGIC OUTCOMES AT 5 YEAR FOLLOW-UP

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Introduction and Objectives: Robotic radical cystectomy provides superior perioperative outcomes to open cystectomy, however there are no reports of oncologic outcomes. We report our oncologic results at 5 year follow up.

Methods: 23 patients underwent RRC from Aug 2003 to Nov 2007. Demographic, operative and pathologic data were recorded prospectively. Patients were seen post op at regular intervals to assess for local recurrence and development of metastatic disease. Adjuvant radiation and or chemotherapy was instituted as indicated.

Results: 18 male and 5 female patients underwent RRC from Aug 2003 to Nov 2007. Mean operative time was 237 min and mean blood loss was 278 cc. Mean hospital stay was 10.5 days. Pathology revealed TCC in all pts. Pathologic stage was CIS in 5%, pT2 in 30%, pT3 in 55% and pT4 in 15%. Surgical margins were negative in all pts. 40 % pts had N1 disease. 45% patients received adjuvant chemotherapy. 60% pts are cancer free. Cancer specific mortality was 10%, and 30% pts developed metastatic disease.

Conclusions: RRC provides comparable oncologic outcomes to open radical cystectomy in the intermediate follow up. There is a high incidence of post operative upstaging and delayed development of metastatic disease.

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LONG TERM OUTCOMES OF OPEN RADICAL CYSTECTOMY IN THE MANAGEMENT OF NONMETASTATIC UROTHELIAL CARCINOMA

Matthew Tollefson, MD; Sara Farmer, MS; Michael Blute, MD; Igor Frank, MD
Mayo Clinic

Introduction: Radical cystectomy with pelvic lymphadenectomy is the primary treatment modality for most patients with invasive urothelial carcinoma (UCC). We review our experience with the procedure after long-term follow-up.

Methods: All patients treated with radical cystectomy for nonmetastatic UCC from 1980 to 1995 at our institution were reviewed.

Results: We identified 827 patients (82% male) at a median age of 68.0 years. In the 142 patients alive at last follow-up, median follow-up was 15.0 years (range 0.2-28 years). 285 patients (34.4%) died of bladder cancer. 132 patients (16%) had node positive disease at time of cystectomy. The majority of patients were treated without adjuvant therapy. Cancer specific survival at 10 years was 82.6 for pTis, 73.6 for pT1, 60.2 for pT2, 46.4 for pT3, and 26.6 for pT4 UCC. Patients with positive regional lymph nodes had a 10-year cancer specific survival of 40.3%. The majority of patients that died of UCC died within the first 4 years after cystectomy.

Conclusions: This data from a large group of consecutively treated patients supports the early aggressive surgical management of invasive UCC. Excellent long-term survival may be achieved in patients with nonmetastatic disease.

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LONG TERM SIGNIFICANCE OF DISTAL URETERAL MARGIN AT RADICAL CYSTECTOMY FOR UROTHELIAL CARCINOMA

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Mayo Clinic

Introduction: Urothelial carcinoma (UCC) develops from a diffusely susceptible mucosa. Our goal was to determine the significance of a positive distal ureteral margin at time of cystectomy.

Methods: We identified 827 patients who underwent radical cystectomy for nonmetastatic UCC at our institution from 1980-1995. We evaluated the impact of a positive ureteral margin on patient outcomes.

Results: 92 patients (11.2%) were found to have a positive initial ureteral margin. 73 patients (79.4%) with positive initial margins achieved a negative final margin after re-resection. 32 patients (3.9%) experienced an upper tract recurrence at a median of 2.6 years following cystectomy. Positive initial and final margin status were significant risk factors for upper tract recurrence (hazard ratio –4.75 and 6.10, respectively, $p<0.0001$). Of those with an upper tract recurrence, only 5 patients (15.6%) recurred at the ureteral anastomosis. The majority of recurrences occurred in the renal pelvis or ureter.

Conclusions: Positive ureteral margins are a marker for upper tract recurrence following cystectomy. The majority of patients with positive initial margins may be converted to negative margins with sequential sectioning.

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COMPLICATIONS AFTER MALE PERINEAL SLING SURGERY

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Introduction: The perineal sling is an option for men with urinary incontinence due to intrinsic sphincter deficiency.

Methods: We examined the complications associated with perineal sling surgery through a retrospective review of men who underwent a sling at our institution from August 2000 through September 2007. A total of 114 men underwent 149 perineal slings. Mean age was 61.4 years (range 19.0-90.0).

Results: Seventy-nine men developed their incontinence after prostatectomy and/or radiation treatment for prostate cancer. Twenty-two patients had bladder neck contractures after prostate cancer treatment requiring management. Twenty-eight patients had incontinence due to a neurologic condition including spina bifida (10) and spinal cord injury (16). The most common postoperative complications were recurrent stress incontinence (56), urge incontinence (34), urinary retention (24) and wound infection (21). Fourteen patients required removal of the sling. Thirty-one underwent sling replacement or revision. Eight patients proceeded to placement of an artificial urinary sphincter after failed sling. Seven patients were managed with additional collagen injections after sling placement.

Conclusions: The morbidity of perineal sling surgery should be discussed with patients.

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OUTCOMES OF THE OBSTRUCTING SLING FOR TREATMENT OF INCONTINENCE IN WOMEN WITH MULTIPLE SCLEROSIS AND PRIOR URINARY DIVERSION

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Cleveland Clinic

Introduction: Women with multiple sclerosis (MS) and refractory incontinence are challenging patients. We review use of obstructing slings for this problem in the setting of prior urinary diversion.

Methods: We identified women with MS who underwent an obstructing sling procedure from 2002-2007. A chart review was performed along with follow-up telephone calls. The outcome was considered a failure if incontinence was unchanged after surgery or bladder neck closure was required.

Results: Seven women (mean age 52.1 years) had a suprapubic tube (N=4) or an iliovesicostomy diversion (N=3). Most (71.4%) were on anticholinergic medication. Obstructing slings were performed for refractory incontinence despite urinary diversion. Mean follow-up after the obstructing sling was 26.4 months. Three (42.9%) patients required a bladder neck closure. Two (28.9%) patients had leakage that was unchanged postoperatively but declined further intervention. Two women (28.9%) are dry at 31 and 24 months of follow-up.

Conclusions: Use of obstructing slings for treatment of refractory incontinence in patients with MS was not successful in 70.4% of our patients. We would advise future patients that the chance for cure after an obstructing sling may be low.

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SACRAL NEUROMODULATION FOR WOMEN MS PATIENTS WITH DETRUSSOR AREFLEXIA

Serge Marinkovic, MD

Introduction: Multiple sclerosis (MS) is a chronic debilitating neurological disease with numerous urological manifestations. Less often seen is Detrussor areflexia. We describe our experience with sacral neuromodulation (SNM) in these patients.

Materials and Methods: Between January 2002 and January 2007, 14 ambulatory women with MS had staged SNM. All patients underwent a complete history and physical examination, video multichannel urodynamics. All patients managed their bladders with clean intermittent catheterization (CIC) for > 1 year. Success was defined as having no need to perform CIC.

Results: Twelve of 14 patients were successfully implanted and at 4 weeks, 10/12 had post void residuals (PVR) on Ultrasound less than 50 milliliters (mls). Two had PVR > 150 mls which was still less than half their bladder capacity (BC of 400-475 mls) and continued CIC for these PVR's at least once daily. Eighty-three percent success rate (10/12 median age 41, median follow-up 33 months±12) while still having PVR's < 50 but 17 percent (2/12) failed SNM therapy by 1 year and did return to full-time CIC.

Conclusions: Detrussor areflexia in MS patients can be successfully managed with sacral neuromodulation.

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SINGLE INSTITUTION 2-YEAR EXPERIENCE WITH SACRAL NEUROMODULATION: INSIGHT INTO PATIENT SELECTION

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Ohio State University Medical Center

Introduction and Objectives: To describe our early experience with sacral neuromodulation (SN), and determine who is more likely to respond to SN.

Methods: A retrospective review of 32 patients (25 female) who underwent first stage SN for refractory urgency/frequency (U/F), urge incontinence (UI) or nonobstructive urinary retention (UR) between 2006 and 2008 was performed. All patients underwent unilateral S3 quadripolar tined lead. Patients with at least 50% subjective and objective improvement went on to implantable permanent generator (IPG). Prior history and outcome measures were recorded and analyzed.

Results: We defined idiopathic as no identifiable cause of U/F, UI, or UR. Results: Mean follow up was 6 months (range 1-16). Mean age was 54 years (32 –74). For U/F, UI, and UR, 6/9, 13/14, and 8/9 went on to IPG, respectively, with a mean reduction in number of voids per day of (6.5), PVR (119 mL), and number of incontinence episodes per week (7.1) in each group. Of the 23/32 with success (71%), 18/23 (78%) were considered idiopathic, while 8/9 (89%) considered non-idiopathic have failed SN.

Conclusions: Despite good early success, those with identifiable cause of symptoms may be at higher risk for failure.

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SUCCESS OF SACRAL NEUROMODULATION STRATIFIED BY AGE

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Medical College of Wisconsin

Introduction and Objectives: Sacral neuromodulation has become a viable option for the treatment of refractory urinary urgency/frequency and non-obstructive urinary retention. We present our results of sacral neuromodulation for refractory voiding dysfunction stratified by patient age.

Methods: A retrospective analysis of all patients undergoing staged sacral neuromodulation between 2002 and 2007 was performed. Patient data collected included age at implantation, reason for implantation and success of the procedure. Success was defined as a >50% improvement in voiding symptoms after the test stimulation (stage I) trial period.

Results: Information was available on 142 patients. Overall, success for patients with urgency/frequency, urinary retention and pelvic pain was 78/110 (71%), 18/29 (62%) and 1/3 (33%), respectively. Successful implantation was reported in 70%, 82%, 82%, 66%, 65% and 38% of patients <30, 31-40, 41-50, 51-60, 61-70 and >70 years of age, respectively.

Conclusions: While overall success rates of sacral neuromodulation for refractory voiding dysfunction are high, efficacy drastically declines when the procedure is performed in patients >70 years of age.

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TRIPLE DRUG THERAPY TO INCREASE COMPLIANCE IN THE NEUROGENIC BLADDER

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University of Michigan

Introduction: The bladder has several receptors that stimulate contractions, not just muscarinic receptors. There are alpha adrenoreceptors in the bladder neck and detrusor, that when blocked, cause relaxation. Tricyclic antidepressants are also known to relax smooth muscle. Therefore, these three agents may work in synergy to improve bladder storage function.

Method: Sixteen patients with neurogenic bladders had urodynamics performed while on single drug, and then on triple drug therapy.

Results: The single drug was typically 15 mg oxybutinin daily and triple drug therapy was 15 mg oxybutinin daily, 2 mg of terazosin daily, and 25mg of imipramine twice daily. On three drugs 8/12 incontinent patients became newly continent; 1/2 were cured of their reflux; and 6/10 no longer had detrusor overactivity on urodynamics. Mean Pdet at maximum capacity on the single drug was 30.6 cm H2O and on the triple drug it was 14.8 cm H2O (p=0.001). Mean compliance ($\Delta P/\Delta V$) on the single drug was 12.6 and on the triple drug it was 47.5 (p=0.032).

Conclusions: Triple drug therapy with oxybutinin, imipramine and terazosin improves bladder compliance compared to oxybutinin alone in the neurogenic bladder.

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FESOTERODINE IS EFFICACIOUS AND SAFE IN MEN WITH OVERACTIVE BLADDER: RESULTS FROM A SUBANALYSIS OF 2 PHASE III TRIALS

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Introduction and Objective: We evaluated the efficacy and safety of fesoterodine (FESO) in men with overactive bladder (OAB).

Methods: This was a subanalysis of pooled data from 2 trials. Subjects with frequency and urgency or urgency urinary incontinence (UUI) were randomized to placebo (PBO), FESO 4 mg, or FESO 8 mg for 12 weeks. Endpoints included bladder diary variables and subject-reported Treatment Response.

Results: By week 12, micturition frequency, UUI episodes, urgency episodes, and Treatment Response were significantly improved in the FESO 4 mg and 8 mg groups vs PBO (Table). FESO 8 mg was significantly more efficacious in improving continent days/wk vs PBO; UUI episodes vs FESO 4 mg; and mean volume voided per micturition vs PBO and FESO 4 mg. Rates of symptoms suggestive of urinary retention, decreased urine flow, and urinary hesitation were low in the FESO 4 (1%, 1%, 0%) and 8 mg (5%, 2%, 2%) and PBO (1%, 0%, 0%) groups. There were no episodes of acute urinary retention requiring catheterization.

Conclusions: FESO offers 2 efficacious doses, allowing flexibility and treatment individualization in men with OAB. The 8-mg dose provides additional benefit.

Funding: Pfizer, Inc.

Table. Changes From Baseline to Week 12 in Bladder Diary Variables and Treatment Response

Endpoint		PBO n=124	FESO 4 mg n=120	FESO 8 mg n=114
Number of micturitions/24 h	Baseline mean	12.3	12.3	12.2
	LS mean change	−0.8	−1.5*	−2.1*
	Median % change	−10.2	−13.2*	−15.8*
Number of UUI episodes/24 h	Baseline mean	3.4	3.2	3.1
	LS mean change	−1.1	−1.8	−2.4*
	Median % change	59.3	84.5*	100.0*
Total urgency episodes/24 h	Baseline mean	11.7	11.7	11.7
	LS mean change	−0.8	−1.9*	−2.7*
	Median % change	−9.7	−13.5*	−22.2*
MVV per micturition, mL	Baseline mean	[illegible]	150.5	151.5
	LS mean change	8.6	7.7	30.9*†
Continent days/week[‡]	Baseline mean	1.1	1.3	1.0
	LS mean change	2.1	3.0	2.2*
Treatment Response	% Yes	40.2	63.5*	73.2*

LS=least squares. *P<0.05 vs PBO. †P<0.05 vs FESO 4 mg. [illegible] ‡Extrapolated from 3-day bladder diary.

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LAPAROSCOPIC ADRENALECTOMY: COMPARISON BETWEEN SURGERY FOR PHEOCHROMOCYTOMAS VS. SURGERY FOR OTHER INDICATIONS

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Introduction: To evaluate the outcomes of consecutive laparoscopic adrenalectomies (LAs) performed at a high volume center and compare operative results for pheochromocytomas with other adrenal diseases.

Methods: We retrospectively reviewed our experience with LA performed between July 2002 and June 2007. Patient records were analyzed in regards to demographics, pathological diagnosis, operative time, post-operative complications, tumor size, and hospital stay, among others.

Results: 72 consecutive LAs were performed on 69 patients. Indications included pheochromocytoma (n=11), aldosteronoma (n=26), malignant adrenal disease (n=4), non-functioning adenomas (n=17), Cushing's disease (n=6) and other etiology (n=8). No mortality was observed. Peri-operative complications occurred in 7 cases (9.7%). A comparison of pathological diagnoses revealed no statistical differences between pheochromocytomas and other adrenal neoplasms with respect to EBL, open conversion rate, length of stay, pre- and post-operative hemoglobin values, blood transfusion, peri-operative complications, tumor size, and ASA class.

Conclusion: There is no difference between surgical outcomes following laparoscopic adrenalectomy based on pathological diagnosis.

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TRANSURETEROURETEROSTOMY REVISITED: LONG-TERM SURGICAL OUTCOMES

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Olympus

Introduction and Objective: We evaluate outcomes of patients treated with transureteroureterostomy (TUU) for ureteral obstruction.

Methods: Retrospective chart review of patients treated with TUU from January 1985 to February 2007 was performed.

Results: We identified 63 patients who underwent TUU, with 36 females (57.1%) and 27 males (42.9%). Average age was 31.5 (1-83) years. Concurrent urinary diversion was performed in 21 patients. 16 (25.4%) received radiation prior to TUU. Mean follow-up was 5.8 (0.1-22.2) years; 5 were lost to follow-up. Of the 56 patients with imaging, the TUU was obstructed in 6 (10.7%). Mean preoperative and recent calculated glomerular filtration rates were 62.8 (13-154) and 71.8 (22-141) mL/min, respectively (p=0.04). Stone disease developed in 8 patients and was treated with: percutaneous nephrolithotomy (2), spontaneous passage (2), ureteroscopy (1), and surveillance (3). Subsequent urologic intervention was required for obstruction in 6 (10.3%) patients.

Conclusions: We demonstrate TUU can be safe and effective in the select patient. Long-term renal function was improved post treatment. Recurrent stricture, distal obstruction, and stone disease occur in a small percentage of patients.

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PREDICTORS OF SURVIVAL IN ADVANCED RENAL CANCER: LONG-TERM RESULTS OF SOUTHWEST ONCOLOGY GROUP TRIAL 8949

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LUMC

Introduction: Assessment of candidate prognostic or/or predictive factors is potentially useful in the management of advanced renal cancer (RCC). SWOG 8949 showed a statistically significant advantage for cytoreductive nephrectomy in patients with metastatic RCC treated with interferon (NEJM 2001).

Methods: Now 7 years after this initial publication, the SWOG Trial 8949 database was used to further evaluate clinical biomarkers predictive of RCC outcome. In this study SWOG results were updated, now with a median follow-up of 9 years.

Results: Multivariate analysis showed the following variables predicted survival: performamce status ($p<0.0001$), lung mets only ($p=0.028$), alkaline phosphatase ($p=0.002$), hemoglobin ($p=0.047$), and progression by 90 days ($p< 0.0001$). In this mature analysis, cytoreductive nephrectomy was confirmed to improve survival in patients with advanced RCC.

Conclusions: Furthermore, the benefit of nephrectomy was again demonstrated across all pre-defined patient stratifications.

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ASSESSMENT OF PATHOLOGIC INCLUSION CRITERIA OF CURRENT ADJUVANT THERAPY TRIALS FOR PREDICTING DISEASE RECURRENCE FOLLOWING NEPHRECTOMY FOR RENAL CELL CARCINOMA

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Mayo Clinic

Introduction and Objectives: To evaluate the ability of the inclusion criteria of the current adjuvant trials to predict disease recurrence (DR) following nephrectomy for localized renal cell carcinoma.

Methods: We identified 1,037 patients treated with nephrectomy for pM0 clear cell RCC (ccRCC) at the Mayo Clinic from 1990-2001. Clinicopathologic features were reviewed to identify which patients would have been eligible for inclusion in the following adjuvant trials: SORCE, ARISER, ASSURE, and S-TRAC.

Results: Based on clinicopathologic features at the time of nephrectomy, 48.7%, 40.9%, 47.9%, and 3.8% of our patients would have been eligible for the SORCE, ARISER, ASSURE, and S-TRAC trials, respectively. The c indexes for predicting DR in the SORCE, ARISER, ASSURE, and S-TRAC trials were 0.742, 0.755, 0.743, and 0.554, respectively.

Conclusions: The ability to identify patients destined for DR based on clinicopathologic inclusion criteria from the current adjuvant trials was similar, except for the S-TRAC trial. However, a substantial number of patients who are not destined for DR are eligible to receive adjuvant therapy, suggesting the need for more accurate inclusion criteria to avoid over treatment.

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SURGICAL RESECTION OF RENAL CELL CARCINOMA AFTER TARGETED MOLECULAR THERAPY

Anil Thomas, MD; Brian Lane, MD PhD; Brian Rini, MD PhD; Venkatesh Krishnamurthi, MD; Amr Fergany, MD; Andrew Novick, MD; Inderbir Gill, MD; Eric Klein, MD; Steven Campbell, MD PhD
Cleveland Clinic Foundation

Introduction: We performed a retrospective review of surgical outcomes of patients with locally advanced or metastatic RCC treated with targeted therapy.

Methods: 16 patients were treated with targeted molecular therapy and underwent resection of locally advanced (8), locally recurrent (5), or metastatic (3) disease. Patients were treated with sunitinib, sorafenib, or bevacizumab/IL-2.

Results: Median EBL was 700cc for 15 patients. One patient had a significant intraoperative hemorrhage and DIC from a concomitant liver resection and died postoperatively from multisystem organ failure. An anastomotic bowel leak was noted postoperatively in another patient who underwent en bloc resection of his primary renal tumor and adjacent colon. Only one patient was noted to have a wound complication.

Conclusions: Treatment with targeted molecular therapy prior to surgical extirpation appears well tolerated with low overall morbidity in the majority of patients. However, 2 patients (13%) experienced significant complications. Careful patient selection and close follow up is warranted in this challenging patient population in order to determine the optimal integration of surgery and molecular targeted therapy in patients with advanced RCC.

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CONCOMITANT CARCINOMA IN SITU IS A FEATURE OF AGGRESSIVE DISEASE IN PATIENTS WITH ORGAN CONFINED UROTHELIAL CARCINOMA AT RADICAL NEPHROURETERECTOMY: A MULTI-INSTITUTIONAL ANALYSIS OF 1362 PATIENTS

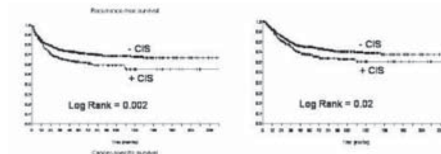
Jeffery Wheat, MD[5]; Alon Weizer, MD[5]; J. Stuart Wolf, MD[5]; Shahrokh Shariat, MD[7]; Mesut Remzi, MD[8]; Andrea Haitel, MD[8]; Vitaly Margulis, MD[6]; Charles Guo, MD[6]; Christopher Wood, MD[6]; Francesco Montorsi, MD[9]; Marco Roscigno, MD[9]; Eiji Kikuchi, MD[1]; Cord Langner, MD[2]; Philipp Ströbel, MD[3]; Theresa Koppie, MD[4]
[1]Keio University School of Medicine, Tokyo, Japan; [2]Medical University Graz, Graz, Austria; [3]Universitätsklinikum Mannheim, Mannheim, Germany; [4]University of California Davis; [5]University of Michigan; [6]University of Texas MD Anderson Cancer Center; [7]University of Texas, Southwestern; [8]University of Vienna; [9]Vita-Salute University, Milan, Italy

Introduction: We evaluated how concomitant carcinoma in situ (CIS) in patients undergoing radical nephroureterectomy (RNU) for upper tract urothelial carcinoma (UTUC) impacted disease recurrence and cancer specific survival.

Methods: 1,362 patients undergoing RNU were identified and evaluated for disease recurrence and cancer-specific mortality. Invariable and multivariable Cox regression analyses were performed. Recurrence-free and cancer-specific survival were estimated using the Kaplan-Meier method with differences assessed using the log rank test.

Results: 382 (28.7%) patients had concomitant CIS. Concomitant CIS was a significant predictor of disease recurrence (p=0.05) in patients with ≤T3N0 disease. Concomitant CIS did not significantly impact cancer-specific mortality (p=0.06). In Kaplan-Meier analysis, those with concomitant CIS did have significantly shorter median time to disease recurrence and cancer-specific mortality.

Conclusions: RNU patients with ≤T3N0 disease and CIS have higher rates of disease recurrence and possibly cancer specific mortality. This information may help to refine surveillance protocols and to better select patients for adjuvant chemotherapy.



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EFFECT OF SURGICAL APPROACH (LAPAROSCOPIC OR OPEN) ON OVERALL SURVIVAL AFTER NEPHROURETERECTOMY FOR UROTHELIAL CARCINOMA OF UPPER URINARY TRACT

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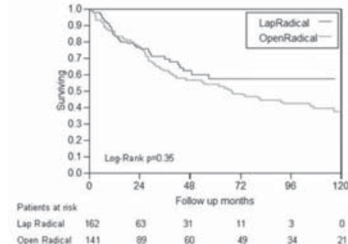
[1]Cleveland Clinic Glickman Urologic and Kidney Institute; [2]Cleveland Clinic Lerner College of Medicine

Introduction and Objective: Open nephroureterectomy (ONU) has long been considered the gold standard treatment for urothelial carcinoma of the upper urinary tract (UC-UUT). However, laparoscopic nephroureterectomy (LNU) has emerged as a potential viable alternative for management of the kidney during NU. In this report, we compare the overall survival of patients treated by LNU and ONU in order to evaluate the effectiveness of LNU for the treatment of UC-UUT.

Methods: We identified 303 consecutive patients who were treated for UC-UUT between 1/1992 and 11/2007. Of those patients, 162 were treated with LNU and 141 were treated with ONU. Data was analyzed for overall survival.

Results: Median follow up was 16 months (IQR 10-37) and 34 months (IQR 13-95) for LNU and ONU groups respectively (p<0.001). Kaplan-Meier estimate revealed no significant difference in overall survival (log-rank p=0.34). Five-year overall survival rates were 57.5% and 53.0% for LNU and ONU groups.

Conclusions: In this single center experience, the surgical approach for UC-UUT does not appear to affect overall survival. Given the decrease morbidity profile and equivalent overall survival, we routinely recommend LNU for the treatment of UC-UUT.



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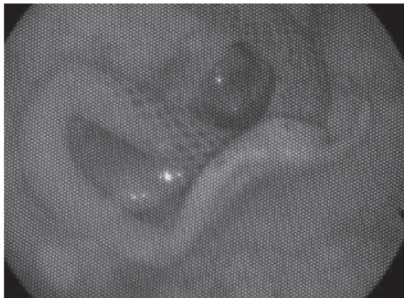
AN UNUSUAL CASE OF RECURRENT URINARY TRACT INFECTIONS IN AN ADOLESCENT

Christina Ching, MD; Jonathan Ross, MD
Cleveland Clinic Foundation

Introduction: Pediatric recurrent urinary tract infections are concerning for anatomic anomalies and voiding dysfunction. We present an interesting cause of recurrent infections.

Results: A 13-year-old male with Asperger's syndrome presented in urology clinic for recurrent urinary tract infections. He had a 3-month history of chronic frequency and dysuria. Repeat positive urine cultures were refractory to multiple courses of antibiotic treatment. A renal ultrasound demonstrated a "floating tubular serpiginous structure" in the bladder. Cystoscopy was done and upon entry into the bladder, a green-coiled object with eyes and forked tongue was seen floating at the dome of the bladder. It was extracted endoscopically with a stone basket. The final pathology was "a plastic snake measuring 14cm in length." The patient had subsequent resolution of his symptoms with negative urine cultures.

Conclusions: This was the first case of a toy snake found in a patient's bladder reported at our institution. We were able to remove the foreign body transurethrally however time will tell if the patient is at risk for stricture disease from the initial insertion and/or its subsequent removal.



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SHOCK WAVE LITHOTRIPSY DIAGNOSIS MUCINOUS ADENOMATOID URACHAL CYST

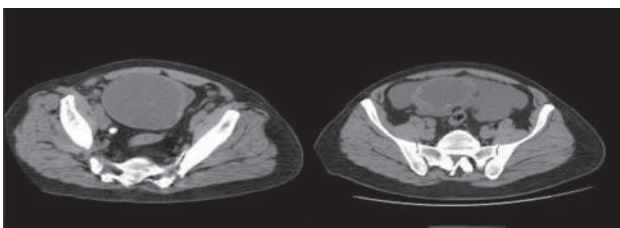
Amy Krambeck, MD; Jeffrey Karnes, MD
Mayo Clinic

Introduction: A 54-year-old male presents with new onset ascites after shock wave lithotripsy (SWL) performed elsewhere for a 1.5 cm distal ureteral stone (Figure 1a). His past medical history is significant for imperforate anus repaired at birth and ureteral reimplantation for vesicoureteral reflux. Paracentesis revealed a ascites fluid creatinine of 1.0 and negative cytology.

Methods: Repeat CT scan (Figure 1b) demonstrated rupture of a pelvic mass thought to be the bladder on pre SWL imaging and persistent ureteral stones.

Results: Abdominal exploration demonstrated intraperitoneal rupture of a large mass attached to the bladder with mucinous ascites fluid. The mass was excised with a cuff of bladder and the appendix. The ureteral stones were removed by percutaneous antegrade ureteroscopy. Pathology revealed a benign urachal cyst with adenomatoid mucinous differentiation. The appendix was benign. Metabolic stone evaluation revealed hyperparthyroidism. The patient had previously undergone multiple CT scans of the pelvis for recurrent stone disease and the mass had been erroneously identified as an enlarged bladder.

Conclusions: Not until the patient underwent SWL with subsequent mass rupture was the appropriate diagnosis made and treatment instituted.



1a. Pre SWL 1b. Post SWL

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ORAL CAVITY METASTASIS OF RENAL CELL CARCINOMA

Thomas Will, MD; Neena Agarwal, MD; Guy Petruzzelli, MD, PhD, MBA

Introduction: Despite being reported rarely, renal cell carcinoma (RCC) is the third most frequent neoplasm to metastasize to the head and neck region preceded only by breast and lung cancer.

Methods: We report the case of a patient presenting with an oral cavity lesion that was painful and had grown substantially over the last several months.

Results: The head and neck exam revealed an erythematous and indurated 4 cm mass in the right anterior floor of mouth region with ulceration. Biopsy of the lesion resulted in persistent bleeding requiring cautery and manual pressure. Immunoperoxidase testing was positive for CD10 and vimentin supporting the diagnosis of metastatic RCC and ruling out the possibility of other clear cell carcinomas of salivary gland origin.

Conclusions: Metastatic RCC is part of the differential diagnosis for patients presenting with a new head and neck lesion in the setting of a history of kidney cancer. The physician needs to be prepared for the increased risk of bleeding and understand the importance of immunohistochemical staining to differentiate between metastatic RCC and malignancies of salivary origin. Unfortunately, the prognosis is invariably poor in these patients.

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CARCINOSARCOMA OF THE PROSTATE REPLACING THE ENTIRE LOWER GENITOURINARY TRACT

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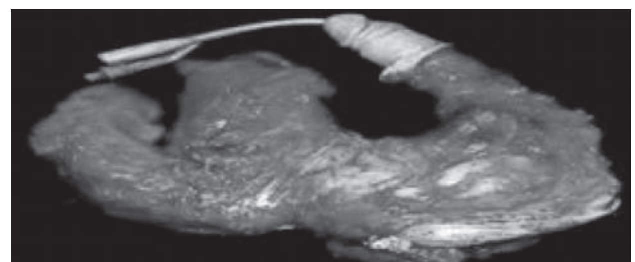
Introduction: Less than 50 cases of prostate carcinosarcoma (PCS) have been previously reported in the literature. Few cases of PCS have replaced the entire lower genitourinary (GU) tract, with fewer responding to resection.

Results: A 73 year-old male had previously undergone radiation therapy (RT) for localized low-grade prostate adenocarcinoma (PA) 5 years earlier. Repeat biopsy of an enlarging and firm prostate demonstrated "high-grade PA". Subsequently, the patient underwent brachytherapy and androgen deprivation therapy. On presentation to our institution for stranguria and obstipation, the PSA was <0.10 with a rectal exam demonstrating an extensive mass obliterating the rectal lumen. CT scan demonstrated a pelvic mass extending into rectum and base of penis. En bloc resection of the 1500 gram mass required pelvic exenteration, penectomy, orchiectomy, myocutaneous gracilis flap, fecal and urinary diversions (below). Final pathology demonstrated positive PSA immunohistochemistry consistent with high-grade PCS.

Conclusions: PCS is a rare tumor that is thought to arise from standard PA with an unknown trigger. Our patient had palliation of symptoms after removal of PCS replacing the entire lower GU tract.



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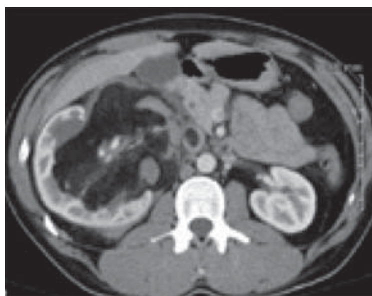
RENAL ANGIOMYOLIPOMA WITH INFERIOR VENA CAVAL THROMBUS IN A 32 YEAR OLD MALE

Matthew Christian, MD; Girma Tefera, MD; Timothy Moon, MD
University of Wisconsin

Introduction: Renal angiomyolipoma (AML) is a benign neoplasm, consisting of three elements: smooth muscle, adipose tissue and blood vessels. Typically, AML is confined to the kidney, but in rare circumstances, extension beyond the kidney has been described.

Results: We present a 32-year-old male whose initial symptom was acute right upper quadrant pain. Computed tomography demonstrated a 13cm right renal mass with an associated inferior vena caval (IVC) tumor thrombus. He underwent a right radical nephrectomy with IVC tumor thrombectomy. The pathology showed a classic AML. The patient's last follow up was at 5 months where an abdominal ultrasound showed no evidence of occlusive thrombus within the IVC.

Conclusions: To our knowledge there are only 4 published cases of AML with tumor thrombus in male patients. Our case is the youngest to date at age 32.



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ACUTE RENAL FAILURE FOLLOWING A MIDURETHRAL SLING

Jeffrey Cerone, MS, MD[1]; Holly Wyneski, MD[2]; Raymond Bologna, MD[3]
[1]*Northeastern Ohio Universities College of Medicine;* [2]*Northeastern Ohio Universities College of Medicine;* [3]*Notheastern Ohio Universities College of Medicine*

Introduction: Current trends in sling placement for female urinary incontinence are moving toward outpatient centers. As this continues, a standard protocol should exist to determine when voiding is adequate to ensure enough bladder emptying to prevent complications.

Methods: The objective of this case is to present an episode of post operative urinary retention that presented as significant acute renal failure in a patient self reporting no voiding complaints.

Results: A forty eight year old woman presented to the emergency department 9 days after a midurethral sling with a complaint of shortness of breath. On further evaluation, a pulmonary embolus, elevated cardiac enzymes, and a creatinine of 15.7 was identified. A catheter was subsequently placed for 2200cc of urine, and her creatinine returned to normal after bladder decompression.

Conclusions: Review of the literature has demonstrated both safety and efficacy of midurethral sling procedures for stress incontinence. As more urologists perform sling procedures and as they move into the outpatient arena, physicians should be cautious that the ability to void is not the same as adequate emptying.

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PENECTOMY FOR GENITAL CALCIPHYLAXIS

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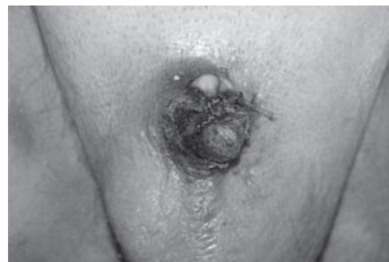
(Presented By: Fred McPhail)
Mayo Clinic Rochester

Introduction: A 58 year-old man with diabetes, peripheral vascular disease, and anuric end-stage renal disease had previously undergone digital débridements and right below-the-knee amputation for gangrene related to calciphylaxis.

Methods: A genital abnormality was noted when he had persistent fever and leukocytosis despite additional digital debridement.

Results: Examination revealed black, dry gangrene extending proximally from the glans of the circumcised penis and purulent gangrene at the base. The scrotum was erythematous without crepitus or bullae. Leukocytes were 19.5 x 109/L.Penectomy and wide local debridement was performed. A suprapubic tube was left for bladder irrigation. The wound was stapled closed. Pathology showed necrosis of the corpora cavernosum and spongiosum, arterial intimal fibrosis, luminal stenosis, and calcifications, consistent with calciphylaxis. Leukocytosis and fever resolved postoperatively. Calciphylaxis is not uncommon, but penile involvement has been reported in only 33 cases.

Conclusions: Risk factors are end-stage renal disease, diabetes, obesity, liver disease, and steroid use. Surgical debridement is associated with increased survival. Mortality for penile calciphylaxis is 64% with mean time to death 2.5 months.



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A RARE CASE OF HYDRONEPHROSIS: URETERAL INVOLVEMENT IN MASSIVE BILATERAL INGUINAL HERNIAS

Benjamin Girdler, MD; Damon Dyche, MD; Jeff Weinberger, MD; Jim Robbins, MD; Jay Hollander, MD

Introduction and Objectives: We present a case of a 49 year-old Caucasian male with a five-year history of enlarging bilateral scrotal masses. Physical exam was consistent with a basketball size scrotum. CT revealed bilateral hydronephrosis with herniation of retroperitoneal fat and both ureters into the scrotum.

Methods: The patient had a peritoneal dialysis catheter placed and underwent 2 months of progressive insufflation of the peritoneal cavity to compensate for "loss of domain." He subsequently underwent exploratory laparotomy as part of a combined case with general surgery. Hernia reduction and bilateral repair using mesh was performed. The ureters were reduced with the hernia contents.

Results: Pathology was benign. The patient suffered from a postoperative seroma managed successfully with a wound vac device. Follow-up CT scan revealed resolution of the hydronephrosis.

Conclusions: This rare case of ureteral involvement of massive bilateral inguinal hernias responded well to conservative ureterolysis as part of a combined repair with a general surgery team.

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NOVEL MANAGEMENT OF GROSS HEMATURIA IN A PATIENT WITH SICKLE CELL TRAIT

Thomas Will, MD; Chris McClung, MD; Elizabeth Mueller, MD

Introduction: Hematuria is a common complication of sickle cell trait (SCT) and often proves difficult to manage. Treatment options vary from hydration and alkalinization to partial nephrectomy with no proposed algorithm in place at this time.

Methods: We report the case of a patient presenting with intermittent gross hematuria over 9 months.

Results: The patient's work-up revealed hemoglobin of 3.3 gm/dl, a normal cystoscopy and CT urogram, and SCT on hemoglobin electrophoresis. Despite medical optimization, the hematuria persisted prompting ureteroscopy and silver nitrate (AgNO3) instillation into the left renal pelvis. Using a novel approach, a 5 fr ureteral catheter exiting the urethra was left in place allowing for periodic instillations of AgNO3 over the next 3 days on the floor. The patient has been hematuria-free since this time (12 months).

Conclusions: Papillary necrosis, the most frequent cause of hematuria in the SCT patient, can be difficult to treat with standard endourologic measures using electrocautery or the laser. We propose a new technique allowing for repeated instillations of AgNO3 as a cauterizing agent in an effort to avoid more invasive procedures such as embolization and nephrectomy.

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PRECOCIOUS PUBERTY IN A 7 YEAR-OLD BOY SECONDARY TO A TRUE MIXED GERM CELL SEX CORD-STROMAL TUMOR, UNCLASSIFIED TYPE –A NOVEL CAUSE

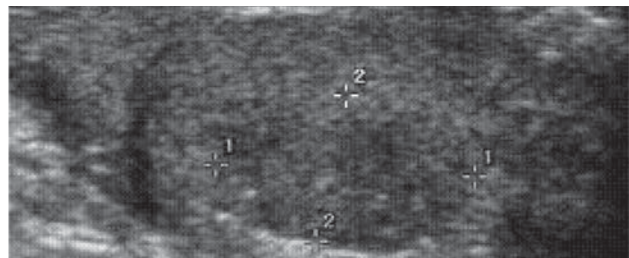
Christian Hettinger, MD; Stephen Kramer, MD; John Cheville, MD
Mayo Clinic

Introduction: A 7 year-old boy was referred for evaluation of precocious puberty, evidenced by penile elongation and pubic hair formation.

Methods: Thorough evaluation revealed an elevated serum testosterone (114 ng/dl), but eliminated exogenous, central, and adrenal etiologies.

Results: Scrotal ultrasonography revealed a 0.9 cm heterogenous left testicular mass. Inguinal exploration was performed with ultrasound-guided open testicular biopsy and orchiectomy. Frozen section revealed Leydig cell hyperplasia. However, permanent histopathology proved to be a predominantly Sertoli cell tumor with secondary Leydig cell hyperplasia and PLAP and C-Kit positive intratubular germ cell neoplasia. Post-operatively, his serum testosterone returned to pre-pubertal levels (<7 ng/dl) and puberty was halted. This tumor represents a mixed germ cell sex cord-stromal tumor (MGCSCST) of the testis, unclassified type. The few previously reported MGCSCSTs of the testis are now thought to actually represent sex cord stromal tumors with entrapped non-neoplastic germ cells.

Conclusions: In our case, the presence of PLAP and C-Kit positive neoplastic germ cells in a hormonally-active stromal tumor represents a true unclassified testicular MGCSCST and a novel cause of precocious puberty.



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SINGLE-PORT LAPAROSCOPIC UROLOGIC SURGERY: INITIAL 36 CASES

Anil Thomas, MD; Jihad Kaouk, MD; David Canes, MD; Robert Stein, MD; Raj Goel, MD; Monish Aron, MD; Georges-Pascal Haber, MD; Raymond Rackley, MD; Courtaney Moore, MD; Mahesh Desai, MD; Pradeep Rao, MD; Inderbir Gill, MD; Mihir Desai, MD
Cleveland Clinic Foundation

Introduction: We present our initial experience using a single-port access laparoscopic system.

Methods: A total of 40 patients underwent single port laparoscopic urological surgery using a specialized multi-channel single-port device through a solitary intra-umbilical incision.

Results: Upper tract procedures included nephrectomy (8), partial nephrectomy (4), pyeloplasty (6), renal cryotherapy (4), cyst decortication (2), ileal ureter (2), and ureteroneocystostomy (1). Pelvic procedures included sacrocolpopexy (6), varicocelectomy (3), radical prostatectomy (1), and radical cystectomy (1). Analysis of perioperative data revealed: operative time ranged from 120 to 360 minutes, estimated blood loss ranged between 20 to 550ml, and hospital stay was between 0 to 22 days. Complications occurred in 3 patients (8%) and included a corneal abrasion (1), retained stent fragment (1), and postoperative hemorrhage requiring angio-infarction (1). Due to failure to progress, 4 cases were converted to a standard laparoscopic approach.

Conclusions: This initial experience demonstrates urologic surgery using single-port laparoscopic access is safe and feasible. Additional experience and refinement of this novel surgical approach is warranted.

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THE EFFECT OF STEREOSCOPIC VIEW ON SURGEONS' PERFORMANCE DURING LAPAROSCOPY

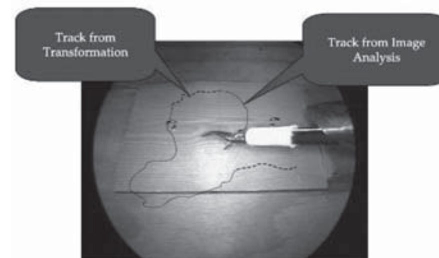
Mohamad Salkini, MD[1]; Allan Hamilton, MD, FACS[3]; Chuan Feng, PHD[2]; Jerzy Rozenblit, PHD[2]
[1]University of Cincinnati; [2]Unversity of Arizona, Department of ECE; [3]Unversity of Arizona, College of Medicine

Introduction: The lack of depth perception contributes to the difficulty that faces the laparoscopic surgeon. This study is to understand objectively the effect of having 3D viewing system on the motion of the hand of laparoscopist.

Materials and Methods: Sixteen procedurally naive medical students participated in the study, and were randomized into two groups of eight. The students in each group were asked to perform the same laparoscopic inanimate task in the laparoscopic box trainer. The first group used the traditional laparoscopic 2D display systemwhile a 3D visualizing system was used by the second group. A motion tracking system was used to analyze the instrument end while being used by the trainee.

Results: The first group performed the task at an average speed, accuracy, and economy of 10 cm/sec, 80 %, and 45 % respectively. On the other hand, the second group was able to achieve 18 cm/ sec, 95%, and 85 % in speed, accuracy, and economy in the same task after using the 3 D display system.

Conclusions: Our study shows clear objective advantage for using 3D display system in laparoscopic surgery. This explains partially the favorable outcome for robotically assisted surgery over the traditional laparoscopic procedures.



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NERVE SPARING ROBOTIC ASSISTED LAPAROSCOPIC PROSTATECTOMY (RALP) LEADS TO FEWER URINARY SYMPTOMS

William Badger, MD; David Thiel, MD; David Duchene, MD; Steve Waxman, MD; Howard Winfield, MD
University of Iowa

Introduction: RALP is gaining acceptance as clinically equivalent to open radical retropubic prostatectomy (RRP). The importance of nerve sparing for continence is being actively reported in the RALP and RRP literature. We evaluate the role of nerve sparing RALP on urinary symptoms at our institution.

Methods: We prospectively collected the nerve sparing status and urinary symptom scores of 132 consecutive RALP cases. Nerve sparing status was based on the surgeon's operative plan at the time of the procedure. Urinary function variables were reported using the Urge-Incontinence Impact Questionnaire and the Urge-Urinary Distress Inventory.

Results: All patients were categorized based on nerve sparing attempts: bilateral, unilateral, or none. Of the 132 patients, 116 completed at least 1 postoperative urinary questionnaire. Bilateral nerve sparing RALP demonstrated a trend toward fewer urinary symptoms than either unilateral or non-nerve sparing RALP.

Conclusions: Nerve-sparing RALP showed a trend toward lower impact on urinary function and should be performed in all appropriate patients. Limiting nerve-sparing RALP to potent patients may unnecessarily subject impotent patients to prolonged postoperative urinary symptoms.

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ANALYSIS OF CONTINENCE RATES FOLLOWING ROBOTIC RADICAL PROSTATECTOMY (RALP): STRICT LEAK- AND PAD-FREE (L/PF) CONTINENCE RATES OUTCOMES

W. Stuart Reynolds, MD; Sergey A. Shikanov, MD; Ofer N. Gofrit, MD; Mark H. Katz, MD; Michael K. Eng, MD; Andrew J. Bernstein, MD; Gregory P. Zagaja, MD; Arieh L. Shalhav, MD; Kevin C. Zorn, MD
University of Chicago

Introduction: We evaluated RALP outcomes using a strict definition of L/PF continence, based on the UCLA-Prostate Cancer Index (UCLA-PCI).

Methods: A review of RALP prospective patient responses to UCLA-PCI was performed concerning urinary function (items #12-16). Of 1200 total patients 885 had sufficient data for review.

Results: Before surgery, 642/885 (73%) were L/PF which decreased to 19/504 (4%), 56/656 (9%), 92/585 (16%), 97/408 (24%), and 37/128 (27%) at 1, 3, 6, 12, and 24 months. Of those not baseline L/PF, 27% reported leakage and 3% pad use. Patients baseline L/PF disproportionately regained L/PF status post-operatively vs those not L/PF: 4 vs 3% (NS), 10 vs 6% (NS), 19 vs 9% (p=0.005), 29 vs 13% (p=0.001), and 33 vs 13% (p=0.015), at 1, 3, 6, 12 and 24 months. Overall, when defined as LF ± security pad, 19, 50, 73, 86 and 85% of patients were continent at 1, 3, 6, 12, and 24 months.

Conclusions: A stricter definition of continence results in more conservative outcomes. Our data suggest that baseline non-L/PF can be predictive of a failure to regain L/PF continence by 6 months postoperatively. However, only 33% of baseline L/PF patients achieved L/PF at 24 months.

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PROSPECTIVE OUTCOMES ANALYSIS COMPARING ROBOTIC ASSISTED LAPAROSCOPIC PROSTATECTOMY (RALP) AND RADICAL PERINEAL PROSTATECTOMY (RPP) AT A MULTI-USER COMMUNITY TEACHING HOSPITAL

Damon Dyche, MD; Jay Hollander, MD; Jose Gonzalez, MD; Ibrahim Ibrahim, MD, PhD; Kaylyn Petzel, CRN
William Beaumont Hospital

Introduction: Our study compares perioperative and long-term outcomes of a prospectively followed sample of RALP and RPP patients.

Methods: We analyzed outcomes from our institution's prospective prostatectomy database using t-test and Chi-square.

Results: 526 patients, 419 RALP and 107 RPP, were followed between 2003-2007. There was no statistically significant (SS) difference in age, pre-operative (PO) Prostate Specific Antigen (PSA), positive margin, Gleason score, stage, or 1 year (yr) postoperative continence (0 pads). While blood loss was SS higher (p<0.001), operative time was SS shorter (p<0.001) in RPP vs. RALP. Complication rates were similarly low in both groups. The proportions of PO potent patients who had bilateral nerve sparing (BNS) and reported "good" or "very good" erections at 1 and 2 years were SS higher in RALP vs. BNS RPP, p=0.017 (1 yr) and 0.002 (2 yr). There were 14 PSA recurrences (PSA >0.2ng/ml), 9 RALP and 5 RPP patients, over 3 years.

Conclusions: Our study indicates that among BNS patients, there was a SS higher potency rates in RALP than RPP patients at 1 & 2 yr follow-up. Further validation of this finding in larger samples is needed.

Funding: Ministrelli Program on Urology Research and Education.

Figure 1. DEMOGRAPHIC, OPERATIVE, AND POST OPERATIVE OUTCOMES COMPARISON BETWEEN ROBOTIC ASSISTED RADICAL PROSTATECTOMY AND RADICAL PERINEAL PROSTATECTOMY.

Characteristic	Perineal (RPP) n=107	Robotic (RALP) n=419	Significance
Age mean (SD)	59.9 (7.1)	59.6 (7.0)	0.342
preop PSA ng/ml mean (SD)	4.6 (2.8)	5.3 (5.4)	0.089
Preop Gleason summary mean (SD)	6.4 (0.6)	6.5 (0.6)	0.233
blood Loss mean (SD)	478 (295)	167 (140)	<0.001
operative time (SKIN) mean (SD)	159 (28)	213 (58)	<0.001
operative time (Total) mean (SD)	206 (84)	264 (61)	<0.001
Post operative length of stay mean (SD)	2.0 (1.5)	1.3 (0.6)	<0.001
Positive margins number (%)	27 (25.2)	105 (25.1)	0.414
Perioperative complications			
Ileus	0	9 (2.2%)	0.215
rectal injury	1 (0.9%)	0	0.203
wound infection	3 (0.7%)	2 (1.9%)	0.08
fistula	2 (1.9%)	1 (0.02%)	0.107
transfusion	7 (1.7)	4 (0.7)	0.067
mortality	0	0	N/A
PSA failure (>0.2 ng/ml) at 3 years	9 (2.2%)	5 (4.7%)	0.174
continence (0 pads) at 1 year	46/71 (65.0%)	105/273 (65.2%)	0.477
potency (good or very good erections) at 1 year	2/41 (4.9%)	43/139 (30.9%)	<0.001

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RETROPERITONEAL ROBOTIC RENAL SURGERY (RRS): TECHNIQUE AND EARLY RESULTS

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Vattikuti Urology Institute

Introduction and Objectives: RRS has been reported by several centers transperitoneally. Advantages of a retroperitoneal approach include early hilar control, no bowel manipulation and direct access to the kidney in the morbidly obese. We describe our technique and early results.

Methods: Retroperitoneal RRS was optimized in a non-survival porcine model followed by a fresh cadaver model. We then utilized a robotic retroperitoneal approach in 7 patients (simple nephrectomy-3, partial nephrectomy-2, radical nephrectomy-1, pyeloplasty-1).

Results: Retroperitoneal RRS was successfully achieved in 6 pigs and a human cadaver followed by 7 patients. Mean console time was 138 min. Mean blood loss was 67 (20-100) ml and average hospital stay was 2.5 days. Pathology showed RCC in 3, XGPN in 2 and MCDK in 1 patient. We did not experience conflicts between robotic arms despite decreasing distance between robotic ports to 3 cm.

Conclusions: A retroperitoneal approach is feasible for robotic renal surgery. Decreasing distance between robotic arms does not impede movement in the limited retroperitoneal space.

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TO DRAIN OR NOT TO DRAIN? OUR EXPERIENCE IN LAPAROSCOPIC PARTIAL NEPHRECTOMY

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Introduction: There has been a general consensus regarding intraoperative insertion whenever the collecting system is breached. We report our experience with laparoscopic partial nephrectomy without drain placement after repairing the renal collecting system.

Methods: We opened the collecting system during resection of the renal mass in 20 patients undergoing LPN. We confirmed collecting system violation by injection of methylene blue through a previously placed ureteral catheter. The collecting system was closed with 4-0 Vicryl suture followed by instillation of fibrin sealant and Surgicel bolster.
We left a Jackson Pratt (JP) drain in ten patients, and did not leave any drain in the rest.

Results: The mean age of the patients and average tumor size was similar in both the groups. Postoperative urine leak or collection was not observed in either group. No local recurrence or metastatic disease was observed after an average follow up of 13 months (range 2-24).

Conclusions: Our early LPN without drain experience following collecting system repair suggests that drain placement can be eliminated without significant risk.

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THE WEEKEND ROBOTIC COURSE: A NOVEL APPROACH TO RESIDENT ROBOTIC TRAINING

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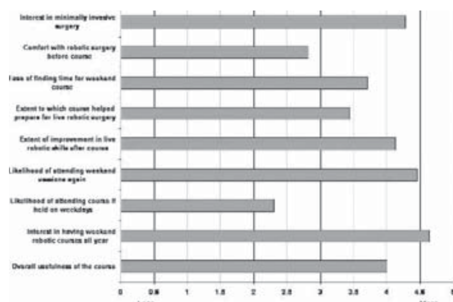
Introduction: The expanding use of robot-assisted surgery has imposed unique burdens on resident education. We describe resident satisfaction with a unique robotic training initiative- "The Weekend Robotic Course".

Methods: Urology residents from all PGY-levels completed 6 sessions of a robotic training course held every other Saturday during a 6 month period. Each resident was given an hour per session to complete a series of 5 standardized exercises on the da Vinci® system. Participants were and graded on time, accuracy and precision. All participants completed a 17-item demographic/satisfaction questionnaire and rated parameters for satisfaction on a 5-point Likert scale.

Results: A total of 15 residents completed the course. All participants found the course very useful, noticed an improvement in their live robotic skills and would attend a similar course throughout the year. The most commonly cited barrier to attending the weekend course was family commitments.

Conclusions: Despite various modern day obstacles in resident training, a weekend robotics course is a feasible option for the safe acquisition of robotic skills. Our weekend robotic course yielded high resident satisfaction and self-assessed improvement.



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RECONSTRUCTION OF URETHRAL EROSION IN MEN WITH NEUROGENIC BLADDER

Joshua Meeks, MD, PhD; Jessica Casey, MD; Bradley Erickson, MD; Christopher Gonzalez, MD
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Objective: We describe surgical outcomes and operative technique for reconstruction of catheter induced urethral erosion in men with neurogenic bladder.

Patients and Methods: This is a prospective study of 11 men that underwent elective urethroplasty for urethral erosion between 2004 and 2007. All men had a diagnosis of neurogenic bladder and indwelling catheter induced urethral erosion. Reconstructive techniques included primary closure in 6/11, substitution urethroplasty with penile skin graft in 3/11, penile skin flap in 1/11 and buccal mucosa graft in 1/11. A two-staged approach was used in 1/11.

Results: Preoperative median erosion length was 6 cm from the meatus (4 - 10 cm). A successful repair was seen in 7/11 (64%) at a mean follow-up of 25 months. Of those with recurrence of erosion, the median length of the resultant defect was 2 cm. All recurrences occurred in the first 5 patients. The median time to recurrence of erosion was one month and did not appear to be related to any one surgical technique.

Conclusion: Reconstruction of catheter induced urethral erosion in men with neurogenic bladder is feasible. Further data are needed to stratify the best candidates and reconstructive approach for these men.

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SUCCESSFUL RECONSTRUCTION OF PEDIATRIC HYPOSPADIAS FAILURES WITH MULTISTAGE URETHROPLASTY IN ADULT MALES

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Objective: Reconstruction of adult men with urethral strictures after failed pediatric hypospadias repair remains complex due to multiple regions of stricture, significant penile scarring and deficiency of adequate skin. We describe our experience with multistage graft urethroplasty.

Methods: 16 men underwent urethroplasty for urethral stricture after hypospadias failures originally repaired as children. Median age of men in this study was 31 yrs. All men underwent a multistage repair with 14/16 repairs occurring in two stages. Graft sources included penile skin (1), auricular tissue (1), full-thickness abdominal wall skin (2) and buccal mucosa(13).

Results: Mean patient follow-up was 21 months and stricture length was 8 cm (5 to 14 cm) and mean graft size was 22 cm (10-38 cm). All men underwent a second-stage closure of a mean time of 6 months from onlay urethroplasty. All hypospadias repairs were successful with no evidences of stricture recurrence, fistula or dehiscence. Three patients had afebrile urinary tract infections treated with oral antibiotics.

Conclusions: A multistage repair was successful in all cases of adult males urethral stricture after pediatric hypospadias repairs with no recurrences.

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COMPLICATIONS FOLLOWING URETHROPLASTY

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University of Michigan

Introduction: Urethral reconstruction is a surgical option for complex urethral conditions including stricture, hypospadias, diverticulum and fistula disease.

Materials and Methods: We examined the complications associated with urethroplasty surgery through a retrospective reviaew of men who underwent urethroplasty from July 1993 through September 2006 at our institution.
Ninety-one men underwent 125 urethroplasties over 13 years. The mean age was 45.2 years (range 17.1-86.8). The mean follow up was 15.5 months (range 0.5–.5). Reconstruction involved a primary anastomosis in 28%, augmented repair 19%, augmented anastomosis 5% and staged repair 28%.

Results: Average blood loss for a primary anastomosis was 266cc, augmented anastomosis 265cc, augmented repair 212cc and staged repair 87cc. The most prevalent complications were urethral stricture (23), wound dehiscence (6) and infection (5). Primary and augmented/anastomotic repairs had the highest number of stricture complications with 8 each. Staged repairs had 4 strictures. Primary anastomotic and augmented/anastomotic urethroplasties had comparable blood loss and stricture rates. Staged repairs had fewer complications.

Conclusion: Complication rates should be discussed when reviewing options for urethral reconstruction.

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PENILE TRACTION THERAPY FOR TREATMENT OF PEYRONIE'S DISEASE: A PILOT STUDY

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Introduction: The aim of this study was to evaluate external penile traction as a non-surgical treatment of PD.

Materials and Methods: Ten men with PD were enrolled in the pilot study. The mean duration of disease and age at enrollment were 28months (8mos-6yrs) and 56yrs (49-62). The mean curvature was 51o (30o-85o). Patients were instructed to use the device from 2-8 hours/day for 6 months. Patients were evaluated with physical exam including flaccid stretched penile length (FSPL). Measurements of curvature and girth were made via penile duplex ultrasound. Erectile function and quality of life were further assessed with the IIEF-EF and QOL-MED. Follow up is at 6 months.

Results: All men noted improvement in curvature, increase in penile length, and enhanced girth in areas of narrowing. The mean pre and post-treatment curvatures were 51o and 34o (p=.028), and 10/10 patients had measured reduction in curvature. The mean pre and post-treatment FSPL were 10.65 cm and 12 cm (p=0.35). Measured length gain ranged from 0.5-2.0cm. The mean pre and post-treatment IIEF-EF were 18.3 and 23.6 (p=0.16).

Conclusions: This pilot study shows that daily use of external penile traction device is a safe and effective treatment for PD.

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IMPACT OF UROLOGIC INJURY ON PELVIC FRACTURE MORBIDITY AND MORTALITY UTILIZING THE NATIONAL TRAUMA DATA BANK®

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[1]Advocate Illinois Masonic Medical Center, Section of Trauma and Surgical Critical Care, Department of Surgery; [2]American College of Surgeons; [3]John H. Stroger, Jr. Hospital of Cook County, Division of Urology, Department of Surgery

Introduction and Objectives: Pelvic fractures from blunt force trauma place the bladder and urethra at risk for injury. To compare morbidity and mortality in patients with and without urogenital injuries (UI) associated with pelvic fractures.

Methods: In this retrospective study, the incidence of UI, morbidity, and mortality were investigated using Chi-square tests for qualitative variables and student's t-test for quantitative variables comparing pelvic fractures with and without UI. Multiple logistic regression analysis was used to detect significant predictors of mortality.

Results: Of the 31,380 patients with pelvic fractures, 1,444 had UI. Males more commonly sustained pelvic fractures with UI than females (66.1% vs. 33.9%, $p<0.001$). Patients with UI remained hospitalized longer (15.5 vs. 10.2 d, $p<0.001$), had an increase in ICU (6.7 vs. 3.8 d, $p<0.001$), ventilator days (5.4 vs. 2.7 d, $p<0.001$), and mortality rate (14% vs. 8%, $p<0.001$) when compared to patients without UI. Predictors of mortality did not include UI.

Conclusions: Patients sustaining a pelvic fracture with UI have an increase in morbidity, use of health care resources, and mortality when compared to those without an associated UI.

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THE EFFECT OF ANTERIOR URETHROPLASTY ON VOIDING FUNCTION AND QUALITY OF LIFE: A PROSPECTIVE ANALYSIS

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Introduction and Objectives: To evaluate the effects of anterior urethroplasty on quality of life (QOL) and urinary function (UF).

Methods: We prospectively evaluated UF and QOL in patients undergoing anterior urethroplasty by having patients complete the American Urologic Association Symptom Index (AUASI) and the SF-12 Health Survey forms pre-operatively and on subsequent post-operative visits.

Results: There were 35 men in the study; mean age 44 years (16-66); mean stricture length 5.4 cm (1.5-14); mean follow-up time 7.5 months (1.6-12). UF improved significantly by the first post-operative visit (58 days, 17-232), from an AUASI of 13.1 to 7.4 (p=0.003) and remained stable at the last visit. Overall, 24 (86%) showed improvement in UF and 4 (14%) showed no change. Disease specific QOL showed improvement from 3.9 to 1.7 (p=0.00031). Significant differences in SF-12 scores were not appreciated at the first post-op visit but significantly improved by the last follow-up (45.7 to 53.0, p = 0.005). Type and location of repair did not change outcomes.

Conclusions: Urinary function improves after anterior urethroplasty. Successful urethral reconstructive surgery may improve both urinary and overall QOL.

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PENETRATING TRAUMA TO THE EXTERNAL GENITALIA IN OPERATION IRAQI FREEDOM

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Introduction and Objectives: Injury to the genitourinary (GU) tract occurs in 0.5% to 4.2% of all war injuries. This report details the incidence and treatment of GU injuries to the external genitalia with special emphasis on penetrating trauma.

Materials and Methods: The operating room logs were used to conduct a retrospective review of the patients who sustained GU injuries at an US Army Combat Support Hospital (CSH) in Iraq from February to August 2007.

Results: Of the 3,595 battle trauma injuries seen at the CSH during the time period, 115 (3.2%) had one or more GU injuries for a total of 171 genitourinary injuries. Injuries involving the external genitalia were found in 69.5% of all GU injuries and were all penetrating in nature. Testicular trauma accounted for 43 of the injuries of which 32 were repaired primarily and 11 removed.

Conclusions: Injuries to the external genitalia continue to account for the vast majority of GU trauma in a combat setting. Of patients who presented with penetrating testicular trauma, there was a 74.4% salvage rate. Treatment of penetrating trauma to the external genitalia in a combat setting requires attention to tissue preservation while coordinating associated surgical procedures.

Poster 1

IN VIVO RESPONSES TO UROLOGICAL BIOMATERIALS AS UTILIZED FOR UROLOGICAL RECONSTRUCTION

Heinric Williams, MD; Ajay Singla, MD[2]; Kim Broadrick, MS[1]; Bagya Krishnamurthy, MS[1]; Pamela Van de Vord, PhD[1] (Presented By: Heinric Williams)
[1]Wayne State Department of Biomedical Engineering; [2]Wayne State Department of Urology

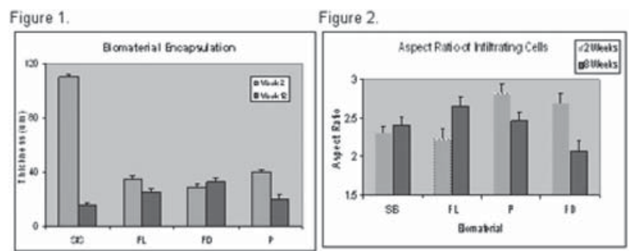
Introduction: Biological tissues are used in stress urinary incontinence management. In this study, we examine the in vivo response to biological materials used for urological reconstruction.

Methods: Small intestine submucosa (SIS). Tutoplast Fascia lata (FL), Tutoplast Fascia dermis (FD) and Pelvicol (P) were analyzed. The biomaterial was implanted intraperitoneally at the bladder neck of Balb/c mice. Animals were sacrificed after 2, 4, 8, or 12 weeks. Tissue sections were evaluated for fibrous capsule and tissue incorporation. Image analysis was used to determine capsule thickness, cell number, aspect ratio and angiogenesis.

Results: SIS group showed a significance decrease in capsule thickness from 2 to 12 weeks of implantation (p=0.01). When examining cell number, FL and P displayed a decrease in cell number, SIS remained constant and FD increased with time. Interestingly, FL and SIS had an increasing aspect ratio, while FD and P had decreasing ratios with time. At 2 weeks, SIS showed increased number of capillaries with significant angiogenesis.

Conclusions: SIS induced a weak inflammatory response as demonstrated by a reduced capsule thickness and increased aspect ratio with time, indicating biocompatibility.

Figure 1. Figure 2.



Poster 2

STEP-BY-STEP METHODS OF PERFORMING THE XIAO "SKIN-CNC-BLADDER" REFLEX OPERATION IN SPINAL CORD INJURY

Benjamin Girdler, MD; Juan de Benito, MD; William Nantau, CNIM; Kevin Feber, MD; Cindy Turzewski, RN, BSN; Brian Bush, CNIM; Jose Gonzalez, MD; Ananias Diokno, MD; Kenneth Peters, MD

Introduction and Objectives: Voluntary bladder emptying can now be accomplished in spinal cord injury following bladder reinnervation by the Xiao Procedure. Interest in the technique is increasing among urologist not only in the US, but across the world. However, urologists have little experience or understanding of the approach and relevant anatomy required to perform the procedure.

Methods: We present a step-by-step method to plan and execute the procedure including Patient Selection, Positioning, Exposure of the Lumbodorsal Fascia, Exposure of the Lamina, Laminectomy, Opening the Dura, Identification of Nerve Roots, Anastamosis, Closure and Perioperative Care. We focus on the anatomical details necessary to safely complete the procedure. and share our clinical experience.

Results: A detailed explanation of the steps involved in the Xiao Procedure including anatomic drawings, intraoperative photographs, and trouble shooting strategies will lead to a better understanding of the technique.

Conclusions: With an understanding of basic neurosurgical anatomy and techniques, the Xiao procedure may attain more widespread clinical implementation.

Poster 3

REDUCING LENGTH OF STAY IN TRANSVAGINAL PELVIC ORGAN PROLAPSE REPAIR

Sarah McAchran, MD; Howard Goldman, MD
Glickman Urological & Kidney Institute, Cleveland Clinic

Introduction and Objectives: We evaluated whether patients undergoing pelvic organ prolapse (POP) repair could be safely discharged on post-operative day #1 (POD#1).

Methods: A retrospective chart review of all patients presenting between 2/2005 and 7/2007 for surgery with a single surgeon was performed. A post-op care pathway was followed. Extracted data points include: length of stay (LOS), age, anesthetic, post-op labs, transfusion, emergency room (ER) visits within 30 days, readmissions within 7 or 30 days, and discharge with or without a catheter.

Results: The 94 cases included 6 anterior repairs, 10 posterior repairs, 7 colpocleises, 11 sacrospinous fixations, and 60 transvaginal mesh repairs. The median age was 58. The mean LOS was 28:27 hours. 86% were discharged on POD#1. There were no transfusions. 3 patients presented to the ER within 30 days. 2 were readmitted within 7 days: one for abdominal pain and one for urinary retention. One patient was readmitted within 30 days for a DVT. 75% of patients went home without a catheter.

Conclusions: Transvaginal POP repair can be performed safely with the majority of patients discharged on POD#1. This data will provide a benchmark for evaluating new approaches.

Poster 4

EFFECT OF AGING ON THE EXPRESSION OF STEM CELL HOMING CHEMOKINE EXPRESSION IN RAT MODEL OF SIMULATED BIRTH TRAUMA

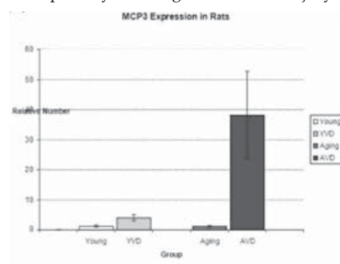
Mingfang Tao, MD; Nicholas Boncher, MD; Sanjay Gupta, PhD; Marc Penn, MD; Margot Damaser, MD; Adonis Hijaz, MD

Introduction: We have found that vaginal distension (VD) model of birth trauma results in over-expression of stem cell homing factor, MCP-3. The purpose of this study is to evaluate the effect of aging on the expression of MCP-3 following VD. Hypothesis is that rats undergoing VD at an advanced age will have an altered susceptibility to VD as reflected in differential expression of MCP-3.

Method: 10 young (2 months) and 10 aged (12 months) rats were randomized to undergo 4 hour of VD or anesthesia. Immediately following procedure, total RNA from urethral tissues were extracted. Quantitative real time PCR was performed for the expression of MCP-3.

Results: The relative expression of MCP-3 in the urethral tissue in the young rats was 4.06±1 following VD compared to 1.31±0.37 in anesthetized controls (P=0.03). The relative expression of MCP-3 in the aged rats was 38.11±14.54 following VD compared to 1.16±0.30 in anesthetized controls (P=0.04). Aged rats relative expression of MCP-3 was significantly higher than young rats (P=0.05).

Conclusions: MCP-3 expression was significantly higher in the old (33-fold) compared to young rats (3-fold) in the urethral tissue. This suggests a higher susceptibility of the aged rats to VD injury.



Poster 5

SINGLE SURGEON OUTCOMES WITH DEXTRANOMER/HYALURONIC ACID BLADDER NECK INJECTIONS FOR URETHRAL INCOMPETENCE

Deborah Lightner

Introduction: Periurethral bulking agents are an alternative to stress incontinence surgery.

Methods: Dextranomer, a highly hydrophilic dextran polymer, solubilized in a base of non-animal stabilized hyaluronic acid (NASHA) has been approved as an injectable agent for endoscopic correction of vesicoureteric reflux in children under the brand name of Deflux (TM) and for women in stress urinary incontinence in Europe under the brand name Zuidex (TM) 7/56 patients treated with dextranomer/hyaluronic acid developed complications: major complications of early (group 1) and delayed (group 2) presentations of pseudoabscess occurring after cystoscopic injection at the bladder neck.

Results: Additionally, treatment failure occurred in post-prostatectomy incontinence (n=3), and in 23/52 females with ISD; one female with an incompetent bladder neck after a neobladder remains dry. All patients had ISD corresponding to aLPP < 100 cm water. Pseudoabscess occurs at a higher rate than seen with other bulking agents, and treatment of pseudoabscess is associated with incontinence of higher grade and more recalcitrant to secondary management.

Conclusions: Dextranomer/hyaluronic acid should not be used as a periurethral-bulking agent for incontinence.

Poster 6

UNILATERAL VERSUS BILATERAL STAGE I NEUROMODULATOR LEAD PLACEMENT FOR THE TREATMENT OF REFRACTORY VOIDING DYSFUNCTION

Khanh Pham, MD; Michael Guralnick, MD; R. Corey O'Connor, MD
Medical College of Wisconsin

Introduction and Objectives: The standard stage I neuromodulation trial involves unilateral placement of a percutaneous lead in the third sacral (S3) foramina. We sought to determine if bilateral S3 lead placement during the stage I trial period improve the success rate for advancing to stage II (permanent) neuromodulator placement.

Methods: One hundred twenty four (20 male, 104 female) patients with refractory voiding dysfunction were retrospectively divided into two groups based on unilateral versus bilateral stage I S3 lead placement. Both cohorts were evaluated and compared regarding overall "success", defined as >50% symptomatic improvement following the stage I trial.

Results: Fifty-five (44%) patients underwent unilateral stage I lead placement and 69 (56%) received bilateral S3 leads. Successful stage I trials were reported in 32/55 (58%) and 53/69 (76%) of unilateral and bilateral cohorts, respectively (p = 0.03). Five wound infections were reported - 2 (3.6%) following unilateral and 3 (4.3%) after bilateral stage I lead placement.

Conclusions: Bilateral stage I neuromodulation trial provides a significantly higher rate of improvement in refractory voiding symptoms to allow for the progress to stage II implantation.

Poster 7

THREE-YEAR PROSPECTIVE CLINICAL TRIAL OF NONSURGICAL, IN-OFFICE TRANSURETHRAL RADIOFREQUENCY COLLAGEN DENATURATION (RENESSA®) FOR TREATMENT OF STRESS URINARY INCONTINENCE (SUI) IN WOMEN: DURABILITY OF EFFECTIVENESS AT 12 MONTHS

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Introduction and Objective: This trial aimed to demonstrate long-term effectiveness of transurethral collagen denaturation in women with SUI due to bladder outlet hypermobility.

Methods: Study was conducted at 13 US physician offices or ambulatory surgery centers and included women with SUI for at least 12 mo who failed prior conservative therapy. Incontinence Quality of Life (I-QOL) and Urogenital Distress Inventory (UDI-6) scores, number of daily SUI episodes, and 1h in-office stress pad weight test were assessed. Procedure was performed with local anesthesia with/without oral sedation (see Appell RA et al. Neurourol Urodyn 2006;25:331-5). We report 12-mo results.

Results: 137 women (26-87y, mean 47y) were enrolled. At baseline, mean number of leaks was 3.7/d; mean I-QOL and UDI-6 scores were 51.0 and 52.7. At 12 mo, pad test showed that 69% of 73 women evaluated had at least 50% reduction in leaked volume (P<.0001) and 45% of women were dry (29% no leaks; 16% <1g leakage). Mean change in I-QOL was 19.6 points (P=.0001); 74% had improved UDI-6 scores (mean improvement 17.6 points; P=.0001).

Conclusions: Collagen denaturation showed measurable durable improvement at 12 months.

Funding: Novasys Medical

Poster 8

COMPARISON OF SACRAL NEUROMODULATION PERFORMED UNDER GENERAL ANESTHETIC OR INTRAVENOUS SEDATION

Serge Marinkovic, MD

Introduction and Objectives: Sacral neuromodulation (SNM) is effective for frequency and urgency symptoms. We test whether mode of anesthetic affects outcome whether general anesthetic (GA) or intravenous sedation (IVS).

Materials and Methods: Between January 2002 and January 2007, 54 patients (Group 1) underwent SNM under GA (Stage 1 & 2) and 51 underwent IVS (Group 2). We compare success of 50 percent improvement in presenting symptoms, episodes of failure < 50 percent improvement in symptoms, erosions, infections and number of reprogramming episodes. Minimum follow-up 1 year.

Results: Group 1(GA), 50/54 (93 percent) completed Stage 2, 44/50 (88percent) retained a >50 improvement in symptom improvement with 38 months±14 follow-up with 18 reprogramming in 2006 and 18 in 2007. One infection /erosion in each group.
Group 2 (IVS), 46/48 (96 percent) completed stage 2, 32/46 (70 percent $p<0.05$) maintained a >50 percent improvement in symptoms, median follow-up 31 months±12, reprogramming were 38 ($p<0.02$) in 2006 and 42 ($p<0.01$) in 2007.

Conclusions: Mode of anesthetic may significantly affective outcome results with regard to short-term symptoms and number of yearly reprogrammings.

Poster 9

TREATING THE MOST BOTHERSOME SYMPTOM OF OVERACTIVE BLADDER SYNDROME WITH SOLIFENACIN: PATIENT-REPORTED OUTCOMES

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Department of Urologic Surgery and Vanderbilt Continence Center, Nashville, TN

Introduction and Objectives: Antimuscarinic therapy may improve patients' most bothersome symptom (MBS), plus other symptoms. We used data from VOLT (VESIcare® Open-Label Trial; sponsored by Astellas and GSK) to examine degree of symptom improvement post-therapy as a function of baseline.

Methods: VOLT was an open-label, 12-week study in OAB patients (n=2225). At baseline, patients identified a single MBS from an OAB symptom list. Initial dose was solifenacin 5 mg/day with a 10 or 5 mg/day option at Weeks 4 and 8. Endpoints were the Patient Perception of Bladder Condition (PPBC) scale, a symptom-specific Visual Analog Scale (VAS), and the Overactive Bladder Questionnaire (OAB-q).

Results: Most patients reported frequency as baseline MBS (604); next were urge incontinence (UI) (582), urgency (499), and nocturia (332). On the VAS, patients scored worse at baseline in the symptom category relating to their MBS than those not most bothered by that symptom (Table). Post-therapy, VAS scores improved to similar levels for all MBS cohorts.

Conclusions: Solifenacin use was associated with improved symptom-specific patient-reported outcomes. Patients achieved largest improvements (measured by VAS) for the MBS for each symptom cohort.

	Mean baseline MBS (mean change from baseline in MBS category)							
	Frequency		Urgency		Nocturia		UI	
VAS urgency	65.1	(–35.6)	72.6	(–44.5)	63.1	(–32.2)	72.3	(–43.1)
VAS UI	52.5	(–32.2)	58.9	(–36.7)	57.8	(–31.0)	78.5	(–51.7)
VAS frequency	78.4	(–46.3)	68.8	(–41.2)	66.9	(–34.2)	65.7	(–42.0)
VAS nocturia	66.3	(–37.2)	59.2	(–34.5)	82.6	(–43.9)	57.9	(–34.4)

Shaded areas indicate the MBS associated with largest improvement from baseline for each patient-reported outcome

Poster 10

LAPAROSCOPIC CYSTOPROSTATECTOMY FOR RADIATION –INDUCED HEMORRHAGIC CYSTITIS

Ayman Moussa, MD; Inderbir Gill, MD; Amr Fergany, MD

Introduction: Hemorrhagic cystitis following radiotherapy is relatively rare event. However, it can be progressive and no management strategy is fully successful, so a stepwise progression in treatment intensity is often required with cystectomy and urinary diversion as final option.

Material and Methods: Laparoscopic cystoprostatectomy with minilaparotomy ileal conduit urinary diversion was successfully performed in 3 patients with severe refractory hemorrhagic cystitis secondary to radiation treatment for prostate cancer. They had previously failed more conservative management with continued severe, life-threatening bleeding.

Results: No intraoperative complications were encountered in spite of the obliteration of tissue planes. Mean operating time (4hours, 45minutes) including the urinary diversion. Blood loss range (50 to 200) ml. Postoperative recovery was uneventful with the exception of prolonged ileus in one patient, which resolved conservatively.

Conclusions: Radiation treatment for prostate cancer is not an absolute contra-indication for laparoscopic cystoprostatectomy, which can still be safely performed in some of these patients. Extension of this experience to patients with malignant disease remains to be evaluated.

Poster 11

THE EFFECT OF TRIPLE MEDICATION TREATMENT FOR BLADDER-SPHINCTER DYSSYNERGIA ON THE DEVELOPMENT OF COMPLICATIONS IN PERSONS WITH SPINAL CORD INJURY

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Introductions and Objectives: To assess the efficacy of triple medical therapy (anticholinergic, alpha-adrenergic blocker, tricyclic antidepressant) at preventing the complications of neurogenic bladder (NGB) and the avoidance of urological surgery in spinal cord injury (SCI) patients.

Methods: Retrospective chart review of urodynamic studies, medical therapy and surgery in SCI patients managed with intermittent catheterization receiving urological follow-up at a Model SCI program.

Results: 78 patients (41 cervical SCI, 28 thoracic SCI) were reviewed. All have an intermittent catheterization program. 9 required surgical intervention, on average at 49 months after injury (MAI) (5 augmentation cystoplasties, 1 detrusor myomectomy, 3 ileovesicostomies). 8 patients received botulinum toxin injections to the sphincter or bladder and no other surgical procedure. 58 patients have been followed on average 115 MAI and have not required surgery, 50 of these receive some form of medical management. 9 of the 58 have DSD and 16 have abnormal compliance.

Conclusions: Triple medication therapy may correlate with avoidance of urologic surgical intervention in SCI patient with NGB.

Funding: NIDRR Model SCI Grant H1333N060032

Poster 12

CLINICAL AND PATHOLOGIC FEATURES PREDICTIVE OF NEPHRECTOMY AT POST CHEMOTHERAPY RETROPERITONEAL LYMPH NODE DISSECTION (PCRPLND)

Clint Cary, Stephen Beck, Richard Bihrle, John Donohue, Richard Foster

Introduction: To determine clinical and pathologic features associated with nephrectomy at PCRLND.

Material and Methods: The testis cancer database was retrospectively reviewed from 1980 to 2007 to identify all patients undergoing PCRPLND. Patients with pure seminoma and non-germ cell histology were excluded. 1807 patients were identified. 17 patients without recorded mass size were excluded from further analysis. Variables analyzed included retroperitoneal histology, year of surgery, and tumor size.

Results: The incidence of nephrectomy at PCRPLND was 14.8% (265 of 1790). Nephrectomy rate was 17.0%, 18.9%, 13.6%, and 8.0% for years 1980-1988, 1989-1997, 1998-2002, and 2002-2007, respectively ($p = 0.0001$). Nephrectomy for tumor size < 2 cm, 2-5 cm. 5-10 cm and > 10 cm was 6.0%, 5.8%, 13.9%, and 31.9%, respectively ($p = 0.0001$). The incidence of nephrectomy based on retroperitoneal histology was 10.3% for fibrosis, 14.5% for teratoma and 20.4% for cancer ($p = 0.0001$).

Conclusions: The incidence of nephrectomy at PCRPLND has decreased over the last 3 decades. A higher incidence is observed in patients with larger volume tumors and teratoma or cancer in the retroperitoneum.

Poster 13

DUODENAL REPAIR OR RESECTION DURING POST-CHEMOTHERAPY LYMPH NODE DISSECTION

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Introductions and Objectives: The purpose of this paper was to determine the incidence of duodenal injury or resection at time of post-chemotherapy lymph node dissection (PC RPLND).

Methods: The testis cancer database at Indiana University was retrospectively reviewed from 1983 to 2006 to identify all patients undergoing PC RPLND. All reports of duodenal surgery in this time period were identified. Clinical parameters and outcomes were recorded for each patient.

Results: 1710 patients underwent PC RPLND and 21 (1.2%) experienced either a duodenal repair or resection. The 3rd or 4th portions of the duodenum were most commonly involved (76%). Management was primary suture closure in 14 cases, intestinal resection and reanastomosis in 6 cases, and Whipple procedure in one. Most patients were managed satisfactorily with nasogastric decompression alone. Eleven patients had minor complications and 3 had major complications: emergent reoperation for duodenal leak, colonic gangrene, and death. When duodenal surgery was planned preoperatively, the only complication encountered was ileus.

Conclusions: Duodenal involvement is rare in PC RPLND, but can be managed safely in the large majority of patients, especially when anticipated preoperatively.

Poster 14

PHASE I TRIAL OF AD5-TRAIL-MEDIATED GENE TRANSFER IN MEN WITH LOCALLY-CONFINED PROSTATE CANCER PRIOR TO PLANNED RADICAL PROSTATECTOMY

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Introductions and Objective: This study examined the safety of intraprostatic (IP) injection of Adenovirus¬-TNF-Related Apoptosis Inducing Ligand (TRAIL) into men with locally-confined prostate cancer prior to radical prostatectomy (RP).

Methods: Patients with T1c-T2b, N0, M0 prostate cancer received TRAIL by transrectal IP injection 7 days before RP. Three patients were injected at each dose level with 4-dose escalation. Histologic survey was performed before and after surgery. Peri- and post-operative data was recorded and compared to non-injected controls.

Results: TRAIL injections at all dose levels were tolerated with no observed complications related to injection or prostatectomy. TRAIL functional activity was suggested by an increase in serum caspase-3 activity within 24 hours after TRAIL injection. An apoptosis assay implied evidence of apoptosis at TRAIL injected sites. No difference in operative measures was seen between the two groups.

Conclusions: Local injection of TRAIL into the prostate is safe and preliminary data suggest apoptosis does occur. To our knowledge, this is the first use of TRAIL in a gene therapy setting, which confirms proof of principle and presents a new possibility for using TRAIL as an anti-tumor agent.

Poster 15

CLINICAL AND PATHOLOGICAL OUTCOMES ASSOCIATED WITH NOVEL PROSTATE CANCER (CAP) SUSCEPTIBILITY REGIONS ON CHROMOSOME 17Q

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Introduction: Recent studies have implicated genetic alterations in chromosome 8q24 in CaP pathogenesis. We recently reported on 2 novel variants that were associated with CaP susceptibility, SNPs rs4430796 on chromosome 17q12 and rs1859962 on 17q24. Our objective was to examine the outcomes of radical prostatectomy (RP) in carriers of the 17q CaP risk alleles.

Methods: 595 genotyped men underwent RP by a single surgeon and statistical analysis was used to compare clinical and pathological tumor features between carriers and non-carriers of the chromosome 17 alleles.

Results: 568 (96%) were carriers of at least one of the 17q CaP risk alleles. This includes 485 (81.9%) carriers of the A risk allele of rs4430796, 446 (76.1%) carriers of the G risk allele of rs1859962, and 363 (61.0%) carriers of both risk alleles. In contrast to the 8q24 alleles, the 17q alleles do not appear to be associated with a positive family history of CaP and no significant association to adverse pathological features were determined.

Conclusions: The 17q CaP prostate cancer risk alleles were present in a large proportion of men in our surgical population and suggest that they are not necessarily associated with more aggressive disease.

Poster 16

LONG-TERM OUTCOMES IN OVERWEIGHT AND OBESE PATIENTS UNDERGOING ROBOTIC LAPAROSCOPIC PROSTATECTOMY

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Introduction and Objectives: We compared overweight and obese patients undergoing robotic laparoscopic radical prostatectomy (RLRP) to those with normal body mass index (BMI) to assess the impact of BMI on long-term clinical outcomes.

Methods: Data was collected prospectively for 945 patients undergoing RLRP. Patients were evaluated with validated sexual and urinary questionnaires preoperatively and postoperatively to 24 months. Groups 1, 2 and 3 corresponded with BMI<25 kg/m2 (normal), 25<BMI<30 kg/m2 (overweight) and BMI≥30 kg/m2 (obese) respectively.

Results: Mean BMI differed significantly among the 3 groups (p=0.0001). Preoperative parameters did not differ except Group 3 patients had significantly lower baseline Sexual Health Inventory for Men (p=0.01) and RAND-36 Item Health Survey scores (p=0.01). Group 3 had a significantly longer operative time (p=0.0003). Other perioperative factors, pathology, and rates of biochemical recurrence at 24 months did not differ. Only group 3 reported significant urinary bother at 24 months (p=0.01).

Conclusions: While BMI≥30 kg/m2 was linked with longer operative time, overweight and obese patients had similar clinical outcomes to normal weight patients at 24 months. RLRP is a feasible option in these patients.

Poster 17

LONGTERM URINARY FUNCTION FOLLOWING PROSTATE MONO BRACHYTHERAPY (PMB)

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Introduction: Younger patients are choosing PMB for localized prostate cancer to avoid potential irreversible urinary complications following prostatectomy (via either open or robotic). We felt it was important to look at the potential long-term urinary side effects of patients undergoing PMB.

Methods: We analyzed data of 43 patients from an individual surgeon's database with a mean 4.4 yrs follow-up. We recorded the baseline AUA symptom/bother scores, the incidence/duration for use of alpha-blockers, and the need for intermittent self-catherization (ISC).

Results: The mean baseline AUA symptom score was 8.1±7.4, at 4 yrs f/u 9.3±6.1. The baseline mean bother score was 1.9±1.1, at 4 yrs f/u 1.9±0.9. In the perioperative period, 32.5% took alpha-blockers for <6 months, 37.2% for >6 months, 30.2% did not take any medicine. At 4 years, only 27.9% were on medical therapy. Following seed placement, 21% of the patients required ISC. When analyzing the ISC and the non-ISC group for variables (i.e. prostate volume, prostate length, radiation units), no differences were seen.

Conclusions: The long-term results show no urinary dysfunction following PMB. Long-term, 72% of the patients were able to discontinue all prostate medications.

Poster 18

PATHOLOGICAL GLEASON SCORE TRENDS IN PATIENTS UNDERGOING RADICAL PROSTATECTOMY

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Introduction: We sought to evaluate the trends in prevalence of Gleason scores over the last 14 years in radical prostatectomy (RP) specimens.

Methods: Demographic, clinical and pathologic data was collected for patients who underwent RP at our institution between 1994 and 2007. Patients were divided in Group1 and Group 2 as treated before and after January 2000 and stratified by pathological GS≤6, ≥8 and 7; the latter was stratified into GS 3+4 and 4+3.

Results: 2067 consecutive RPs were performed at our institution between March 1994 and September 2007. Group 1 and Group 2 consisted of 545 (23.4%) and 1522 (76.6%) patients, respectively. The distribution of age (p=0.6) and race (p=0.9) did not differ between the groups. Group 2 patients had higher BMI (p<0.0001), lower PSA (p<0.0001), higher rate of non-palpable (p<0.0001) and organ confined (p<0.0001) tumors. The rate of GS ≤6 was lower in Group 2 (54.8%vs62.4%, p=0.008), while GS7 and GS≥8 significantly higher. Group 2 patients had less GS 3+4 tumors than Group1 (74.0%vs82.6%, p=0.02).

Conclusions: Based on these findings, it may be assumed that the previously found trend for GS 6-7 upward migration continues and extends into the range of GS≥7 prostate cancers.

Poster 19

LEARNING CURVE FOR PATHOLOGIC T2 POSITIVE SURGICAL MARGIN RATES IN RLRP: AN INSTITUTIONAL ANALYSIS

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Introduction: We report the effect of experience and change in technique on pT2 positive surgical margin (PSM) rates for our first 900 Robotic Assisted Laparoscopic Radical Prostatectomy (RLRP) procedures.

Methods: Perioperative and pathological data were reviewed for the initial 900 procedures performed at our institution. During cases 601-900, our technique was modified in an attempt to decrease the pT2 PSM rate. These patients underwent planned nerve preservation based on side-specific risk of extracapsular extension (ECE). Patients were analyzed by six consecutive groups of 150.

Results: The average pT2 PSM rates for groups 1-4 were 14%, 14%, 17%, and 17%, respectively and were not statistically significant (p-values 0.14-1.00). The average pT2 PSM rate for groups 5 and 6 were 6.7% and 9.8%, respectively, and these were significantly different from groups 1-4 (p-value 0.02).

Conclusions: The learning curve associated with pT2 PSM rate appears to be steep, implying a swift acquisition of skills necessary to perform an appropriate cancer operation. However, with the advent of planned nerve preservation based on the risk for side-specific ECE it is possible to further decrease this rate at our institution.

Poster 20

NEOADJUVANT HORMONAL THERAPY DOES NOT AFFECT EXPRESSION OF THE T CELL CO-INHIBITORY LIGAND B7-H3 IN CLINICALLY LOCALIZED PROSTATE CANCER

Grant Chavin, MD; Stephen Boorjian, MD; Paul Crispen, MD; Timothy Roth, MD; Laureano Rangel; Yuri Sheinin, MD; Michael Blute, MD; Jeffrey Karnes, MD; Thomas Sebo, MD; Eugene Kwon, MD

Introduction: B7-H3 expression in prostate cancer cells is associated with the risk of disease progression following radical prostatectomy (RP). Here, we investigated the impact of neoadjuvant hormonal therapy (NHT) prior to RP on B7-H3 expression.

Methods: We evaluated B7-H3 expression in specimens from men treated with NHT prior to RP between 1990-99. This was compared to staining in tumors from a matched cohort who had RP during the same period without NHT. We also analyzed a 50 patients with bone metastases from 1983-1998, and compared B7-H3 staining in those that received NHT prior to biopsy and those that did not.

Results: B7-H3 expression was noted in 142/148 (96%) of NHT patients, compared to 122/127 (96%) treated with surgery alone (p=0.91). B7-H3 expression in RP specimens was similar between patients receiving NHT and those without (p=0.12). In the bone metastasis cohort, 23/34 (68%) patients received NHT, and 11/34 (32%) did not. B7-H3 expression was greater in the NHT patients (p=0.04).

Conclusions: B7-H3 expression in prostate cancer is not altered by NHT, but does appear to have stronger expression in bone metastases. Thus, B7-H3 may represent an important target for treating high-risk prostate cancer.

Poster 21

PROSTATE SPECIFIC ANTIGEN / SOLVENT INTERACTION ANALYSIS (PSA/SIA) FOR IMPROVED DIAGNOSIS OF PROSTATE CANCER

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Introduction and Objectives: Structural changes to PSA have been shown to correlated with cancer, including changes in glycosylation patterns and potential changes in binding to other ligands. We describe a new assay and preliminary data for differentiating among urine samples according to structural changes to PSA.

Methods: We developed a proteomic assay to differentiate between structural forms of PSA based on the technique of aqueous two-phase partitioning using pre and post prostate massage urine specimens. Preliminary clinical data and ROC performance characteristics in direct comparison with biopsy results are presented. Case samples consisted of biopsy proven cancer with any Gleason grade. Control samples were biopsy proven to be cancer free.

Results: Preliminary ROC data: AUC = 0.77 ($p < 0.44$). Cutoff values of 1.46 and 1.33 in the structural parameter measured by the proposed assay resulted in sensitivities of 67% and 44% and specificities of 64% and 90%.

Conclusions: This preliminary study examined the possibility of providing additional and independent clinical basis for selecting among patients who are candidates for biopsy using today's standards via a proteomic assay with high specificity.

Poster 22

PATIENTS WITH A SINGLE MICROFOCUS (≤5%) OF GLEASON 6 PROSTATE CANCER AT BIOPSY: CAN WE PREDICT MORE AGGRESSIVE DISEASE AT THE TIME OF SURGERY?

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Introduction: Patients found to have Gleason score (GS) 6 microfocal prostate cancer (PC) (≤5% in one biopsy core) are often considered to have favorable disease. Few studies have addressed clinical parameters that may predict eventual pathologic upgrading or upstaging in such patients.

Methods: From a prospective database, those patients having GS 6 microfocal PC were identified. Logistic regression was utilized to evaluate the ability of age, clinical stage, total number of biopsy cores, preoperative prostate specific antigen (PSA), prostate volume, and PSA density to predict adverse pathologic outcomes.

Results: 192 patients were identified with GS 6 microfocal PC. Pathologic upgrading to GS ≥7 occurred in 35 (18.2%) patients. Extraprostatic disease was observed in 15 (7.8%) patients. Logistic regression revealed that age >65 years and PSA density >0.20ng/ml/cc were predictive of increased risk for adverse pathology (p=0.0050, p=0.0002, respectively) .

Conclusions: While a microfocus of GS 6 PC is commonly considered "low risk"disease, patients with GS 6 microfocal PC should be counseled that they may harbor more aggressive disease warranting definitive therapy, especially when pretreatment clinical risk factors are present.

Poster 23

POSTERIOR SUPPORT FOR URETHRO-VESICAL ANASTOMOSIS IN ROBOTIC RADICAL PROSTATECTOMY: SINGLE SURGEON ANALYSIS

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Introduction: Recent reports have indicated that posterior urethro-vesicle anastomotic support results in an early return of continence. We modified this technique to evaluate improvement in patients undergoing robotic radical prostatectomy by a single surgeon.

Materials and Methods: 42 consecutive men undergoing robotic radical prostatectomy between September and December 2007 received a urethro-vesicle posterior supporting stitch prior to the standard urethra-vesicle anastomosis (Group 1). Operative data, post-operative complications, and follow-up data were compared with those of 42 consecutive men who underwent robotic radical prostatectomy between March and August 2007 with a standard urethra-vesicle anastomosis.

Results: 37 and 34 men in Groups 1 and 2 respectively had follow up available between 45 and 75 days following prostatectomy. At a mean follow up of 60 and 53 days following surgery, continence (i.e. one pad per day or less) was 85% in group 1 and 86% in group 2. Age, PSA, preoperative IPSS and SHIM, were similarly between the two groups.

Conclusions: Posterior support did not result in improved immediate post-operative continence in patients undergoing robotic radical prostatectomy.

Poster 24

EFFECTS OF LONG-ACTING TESTOSTERONE UNDECANOATE ON PROSTATE HEALTH OUTCOMES IN HYPOGONADAL MEN: RESULTS OF A MULTICENTER, OPEN-LABEL TRIAL

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Introduction and Objectives: Analysis conducted to evaluate effect of long-acting testosterone undecanoate (TU) 750 mg intramuscular (IM) injection every 10 wks on prostate health of hypogonadal men.

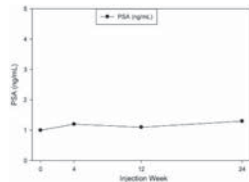
Methods: Hypogonadal men were treated with TU 750 mg (n=130) at baseline, wks 4, 14, and 24. Prostate specific antigen (PSA) and digital rectal examinations (DRE) were performed pretreatment and at each injection; PSA was obtained prior to DRE.

Results: Patients mean age: 54 years, mean body mass index: 31.5 kg/m^2. Mean PSA increased <0.3 ng/mL over this 24-wk study; 2.3% (3/129) of patients had a new-onset postbaseline PSA >4 ng/mL (Figure); 11 (8.5%) had an abnormal DRE at any time post-1st injection. Adverse events associated with prostate health included prostatitis [n=3 (2.3%)] and increased PSA [n=2 (1.5%)]. No patient was diagnosed with prostate cancer or developed worse voiding symptoms during the study.

Conclusions: This 24-week study showed that treatment with TU 750 mg every 10 wks resulted in no clinically meaningful changes in PSA or DRE findings. There was no evidence of unexpected prostate health outcomes.

Funding: Indevus Pharmaceuticals.

Figure 1: Mean PSA through 24 wks of treatment.



Poster 25

TESTOSTERONE AND PSA SUPPRESSION WITH LHRH-ANALOGUES IN PATIENTS WITH PROSTATE CANCER: ESTABLISHING OPTIMAL DOSING AT LOWER COST

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Introduction: The optimal dosing of Lupron is unknown.

Methods: We evaluated the length of serum testosterone (T) and PSA suppression after each injection of 4-month Lupron over 18 months and to assess the potential for using T as a guide for redosing Lupron as opposed to fixed dosing intervals. 13 patients with prostate cancer (Pca) participated in a longitudinal study.

Results: We obtained T levels at baseline and then monthly beginning 4 months after the 1st injection. Lupron was only redosed when serum T was >50 ng/dl. PSA was measured at baseline and every 4-6 months over 18 months. Median T suppression was estimated controlling for age, race, and BMI. Median Gleason score was 7. Entry PSA ranged from 1.6 to 112 mg/dl. Median T suppression was 159, 189, and 183 days for the 1st, 2nd, and 3rd treatment cycle, respectively. One patient developed hormone refractory Pca. The total number of injections required was reduced in 8 of 9 subjects who completed the trial. T suppression exceeded the expected 120 days in all patients with the added benefit of cost savings. These results indicate that measuring T may be a useful method for redosing Lupron.

Conclusions: Using T levels in conjunction with PSA provides monitoring for the potential development of hormone refractory Pca.

Poster 26

120W PHOTOSELECTIVE VAPORIZATION OF THE PROSTATE (PVP) FOR BENIGN PROSTATIC HYPERPLASIA (BPH)

Mahmood Hai, MD
Affiliates in Urology

Introduction and Objectives: Photoselective vaporization of the prostate (PVP) can be safely and effectively performed with the new 120W Greenlight HPS Laser System (HPS) for treatment of benign prostatic hyperplasia (BPH) with obstruction. This study assessed patient outcomes at 1 year following 120W PVP for patients with obstructive BPH.

Methods: Patient outcomes were evaluated at 1 year for the first 35 patients treated with PVP with the HPS system at our institution. Baseline and 1 year evaluations included symptom (AUA) and quality of life (QOL) measures, prostate specific antigen (PSA), transrectal ultrasound (TRUS), maximum flow rate (Qmax) and post-void residual (PVR).

Results: Mean age was 67±9 years. Prior to treatment 51% were on medical therapy and 25% had previous surgical therapy for BPH. Mean baseline TRUS was 90 cc. Mean lasting time and energy delivered was 33±13min and 152±59kJ, respectively. Outcome measures improved by 190%, 85%, 87%, and 87% for Qmax, PVR, AUA, and QOL. PSA and TRUS improved 48% and 51%. No major complications were observed.

Conclusions: 120W PVP is the option of choice for treatment of BPH due to minimal morbidity as well as expeditious and efficacious procedure.

Funding: AMS

Poster 27

POLYPHENON E™ PREVENTS TUMOR IMPLANTATION IN THE RAT BLADDER

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Introduction: Tumor implantation after bladder tumor resection is recognized as one of the causes of bladder tumor recurrence. Our group has been investigating the use of polyphenols (EGCG) in preventing tumor implantation.

Objectives: Determination of the tumoricidal effects of Polyphenon E (Verengen™) to prevent implantation in the bladder injury/tumor implantation model.

Methods: The AY-27 urothelial tumor line was used. Increasing concentrations of Polyphenon E (EGCG) were incubated with cells for increasing times. Cell viability was determined by 3 independent techniques. Inhibition of tumor implantation was assayed using the bladder injury/ tumor implantation model in which cells were instilled in the rat bladder after cautery injury and subsequent intravesical introduction of drug.

Results: All three assays demonstrated cytotoxicity to be dose and time dependent. Inhibition of tumor formation in the bladder injury model using doses and dwell times based on in-vitro studies was demonstrated.

Conclusions: These studies confirm the efficacy of this polyphenol preparation as a tumoricidal agent and should pave the way for human clinical trials.

Funding: Stranahan Foundation and Polyphenon Pharma, Inc.

Poster 28

A PROSPECTIVE COMPARISON OF INTRAOPERATIVE URINE CYTOLOGY AND UROVYSION FISH

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Introduction: Urovysion fluorescence in situ hybridization (uFISH) has been reported to have superior sensitivity and comparable specificity to urine cytology in urothelial carcinoma (UC) detection. Conventional cytology costs $225 while uFISH costs $2112. We report the performance characteristics of uFISH and cytology in patients with definitive pathology.

Methods: Intraoperative bladder wash cytology and uFISH were collected on all patients prior to radical cystectomy [RC] or transurethral resection of bladder tumor [TURBT] and analyzed by a dedicated pathologist and cytopathologist with no prior knowledge of this study.

Results: 120 specimens, 32 RC and 88 TURBT, from 92 patients were analyzed. No tumor was identified in 28 specimens (23%). uFISH was positive in 66 (55%) collected specimens and cytology was suspicious of UC in 77 (64%). The sensitivity for uFISH was 66% and 75% for cytology. Specificity was 75% for uFISH and 71% for cytology. In the 32 RC specimens, sensitivity was 74% for uFISH and 84% for cytology; both had 100% specificity.

Conclusions: In our series of pathologically confirmed, intraoperative bladder wash urine specimens, cytology performs at least as well as the more expensive uFISH in UC detection.

Poster 29

ANTI-TUMOR EFFECTS AND CYSTITIS WITH PEMETREXED IN A MOUSE MODEL

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Introduction: Overlapping chemical cystitis is the greatest impediment to an effective multi-agent chemotherapy regimen. We evaluated the cytotoxic effect of pemetrexed and gemcitabine (GEM) with single mitomycin (MMC) and adriamycin (ADR) and combination regimens in vitro using mouse and human bladder cancer cell lines.

Methods: MTT assay was used to assess for cytotoxicity against mouse bladder cancer cell lines MB-49 and MBT2, and human lines RT4 and T24. Cystitis experiments were formulated by intravesical installation of single and combination agents bi-weekly for 3 weeks.

Results: PEM alone caused ~50% reduction in MTT viability, and did not significantly add to the cytotoxic effect of GEM, MMC or ADR. MMC or ADR caused significantly more cystitis than either GEM or PEM alone or when combined. Complete eradication of the tumor was only successful with GEM/ADR and GEM/MMC.

Conclusions: PEM is not an effective single agent in the treatment of bladder cancer in this model despite a reduced chemical cystitis profile, but in combination with another active agent resulted in anti-tumor response with minimal cystitis.

Funding: Lilly and Frederick B. Snite Foundation

Poster 30

GLUCOSE-REGULATED PROTEIN-78 (GRP78) EXPRESSION IN BLADDER CANCER: A POTENTIAL MARKER FOR CHEMOTHERAPY RESISTANCE

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Introduction: One mechanism for chemotherapy resistance following radical cystectomy (RC) is the induction of stress response proteins known as glucose-regulated proteins (GRP). The aim of this study was to analyze the expression of GRP78 in RC specimens.

Methods: Tissue micro arrays were prepared from archived blocks of 50 patients requiring a RC using the primary tumor (PT), benign mucosa (BM), and lymph node (LN). Anti-GRP78 antibody was used for immunohistochemical analysis. Two independent pathologists interpreted the staining results.

Results: Pathologic stage of the primary tumor was pT2 or lower in 21 and pT3 or above in 29 patients. Six had positive lymph nodes. Over expression of GRP78 was observed almost uniformly in both PT and BM. Interestingly, 3 of 6 LN+ patients showed no significant immunostaining for GRP78. These three patients are free of disease at mean follow-up of 14.7 (2–) months. The remaining 3 LN+ patients with strong staining for GRP78 are dead of disease.

Conclusions: This represents the first report of GRP78 expression in urothelial carcinoma. One intriguing finding is the possible association between GRP78 underexpression in tumor-laden LNs and a favorable response to adjuvant chemotherapy.

Poster 31

ROUTINE STENTOGRAMS ARE NOT PRACTICAL IN IDENTIFYING CLINICALLY RELEVANT LEAKS FOLLOWING URINARY DIVERSION

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Introduction and Objectives: To determine the usefulness of routine stentograms in patient management after urinary diversion.

Materials and Methods: A retrospective review was performed to identify all patients undergoing urinary diversion from Feb. 2004 to Feb. 2007 by 4 surgeons. 326 patients were identified. 150 patients were excluded. 101 patients had no stentogram and 49 patients had incomplete records.

Results: Of the 176 patients, extravasation at the ureteral anastamosis was detected in 3 of 344 ureters (0.9%). The ureteral stents were left in situ until the leaks resolved. No patient developed a ureteral stricture. 10 (3.0%) ureters had delayed drainage and the stents were removed as scheduled. One patient developed hydronephrosis from a retained portion of the ureteral stent. The 328 ureters (95.4%) with normal stentograms were followed for 30 weeks (3-144). 4 ureters (1.25%) developed distal ureteral strictures and 1 patient developed a ureteral tumor recurrence. No patient developed a post-stentogram complication.

Conclusions: The incidence of a ureteral-enteric anastamotic leak detected by stentogram is less than 1-2%. Routine stentograms do not appear necessary in stable patients without clinical signs of a urine leak.

Poster 32

METAANALYSIS OF GENE EXPRESSION DATA IDENTIFIES NOVEL MARKERS OF BLADDER CANCER RISK AND PROGRESSION

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Introduction: Prediction of bladder cancer tumor characteristics has been limited by sample numbers and population heterogeneity yielding molecular signatures without significant overlap.

Methods: We applied an accepted method of meta-profiling microarray data to develop gene signatures to predict bladder cancer aggressiveness.

Results: Gene expression data from 9 separate bladder cancer profiling studies and 3 multi-cancer profiling studies totaling 631 samples measuring between 1,168 and 59,619 genes were analyzed within an online tool Oncomine. Meta-signatures were associated with disease grade, stage, progression, recurrence and death from bladder cancer. A combination meta-signature was developed by comining genes significant in multiple signatures. The expression of selected genes, 12 underexpressed and 42 overexpressed genes from high risk tumors, were determined by qPCR in 48 tumor samples. The metasignature included novel genetic markers, 22 overexpressed and 4 underexpressed, associated with high risk bladder cancer ($p<0.01$). Of these 26 genes, 19 were not reported during previous profiling studies.

Conclusions: Meta-profiling based on multiple study populations increase the validity of gene signatures and may improve risk stratification prior to therapy.

Poster 34

LACK OF PATHOLOGIC DOWN-STAGING WITH NEOADJUVANT CHEMOTHERAPY (NC) FOR INVASIVE UROTHELIAL CARCINOMA (UC) OF THE BLADDER: A CONTEMPORARY SERIES

Christopher Weight, MD; Amr Fergany, MD, PhD; Steven Campbell, MD, PhD; Michael Gong, MD; Eric Klein, MD; James Ulchaker, MD; Jorge Garcia, MD; Andrew Stephenson, MD
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Introduction and Objectives: The known survival benefit associated with NC for patients with invasive UC is most evident in those who achieve a pathological complete response (pCR). While, gemcitabine-cisplatin (GC) has supplanted methotrexate, vinblastine, adriamycin and cisplatin (MVAC) as the standard regimen in advanced bladder cancer, evidence supporting its use in the neoadjuvant setting is lacking.

Methods: 186 patients underwent open radical cystectomy (RC) at our institution for bladder cancer, 27 (15%) of whom received NC. Patient information was obtained from a prospective database.

Results: Clinical stage at diagnosis in the NC cohort was T2 in 23 (85%) and T3 in 4 (15%) patients. 70% patients received GC +/- paclitaxel compared to only 15% getting MVAC. Overall, only 2 patients (7%; 95% CI: 0-18) achieved a pCR. In the NC cohort, 41% of patients had lymph node metastasis and 59% of patients had extravesical disease.

Conclusions: Few patients in our recent experience have achieved a pCR with NC. The poor pathologic responses observed may be related to the use of non-MVAC-based chemotherapy regimens. In the absence of supportive data for alternative regimens, MVAC remains the preferred regimen for neoadjuvant chemotherapy.

Poster 33

THE EFFECTS OF PHYSIOLOGIC ESTROGEN CONCENTRATIONS ON THE BCG-INDUCED IMMUNE REPONSE IN TRANSITIONAL CELL CARCINOMA

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Introduction: The induction of cellular immune response is the theorized anti-tumor mechanism of intravesical Bacillus Calmette-Guerin (BCG) therapy against urothelial carcinoma (UC). We have identified proteins whose expression is up regulated in UC as a consequence of BCG induced, nuclear factor kappa B (NFKB) signaling. NFKB is influence by estrogen receptor binding. We aim to evaluate the effect of physiologic estradiol concentrations (EC) on the expression of BCG induced, NFKB regulated proteins.

Method: Quantitative reverse transcriptase PCR was used to measure mRNA levels of CD54, IL-6, GRO1, CXCL 2, IL-8, and CCL 20 as a function of physiologic EC before and after BCG treatment of T24 UC cells.

Results: There is a significant effect of EC on gene expression in BCG-treated UC. Concentrations of 10 and 500pg/ml of estradiol are associated with 10% and 30% decreased gene expression, respectively, of all the cytokines tested. Peak gene expression occurred at 100pg/ml, a 1.3 fold increase over BCG-treated cells in the absence of estradiol.

Conclusions: The EC has a significant effect on gene expression of proteins up-regulated by BCG. Fluctuations in serum EC in women may influence UC response to intravesical BCG treatment.

Poster 35

CYCLOOXYGENASE/LIPOXYGENASE DUAL INHIBITOR LICOFELONE INHIBITS GROWTH OF HUMAN BLADDER CANCER

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Introduction and Objective: Cyclooxgenase (COX)-2 selective inhibitors have shown promise in bladder cancer prevention although with recent toxicity concerns safer regimens are sought. Licofelone inhibits COX nonselectively and lipoxygenase (LOX) with minimal toxicity in clinical trials. Here we evaluate the biologic effects of licofelone in human bladder cancer.

Methods: RT-4 and UM-UC-3 cell lines representing low and high-grade bladder cancer were treated with 0-50 uM licofelone (Cayman) with DMSO as vehicle control. Cell growth was quantified using crystal violet elution. Cell cycle analysis was performed utilizing flow cytometry with propidium iodide staining.

Results: Licofelone significantly inhibited growth of both RT-4 and UM-UC-3 in a dose-dependent fashion. Growth arrest with a reduction in S-phase ranging from 13-36% and accumulation in the G0-G1 phase was observed. This occurs independent of COX-2 expression levels in UM-UC-3, which is COX-2 null.

Conclusions: Licofelone inhibits the growth of low and high-grade bladder cancer cells. Results of this study support the further investigation of licofelone as a preventive agent in patients with non-muscle invasive bladder cancer.

Funding: VA Merit Review Entry Program

Poster 36

KTP LASER ABLATION FOR BLADDER CARCINOMA

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Introduction and Objectives: Postassium-titanyl-phosphate (KTP) laser ablation of superficial bladder tumors offers an attractive alternative to wire-loop resection. This study evaluates KTP laser ablation for superficial bladder tumors.

Methods: Between 2002 and 2007 60 patients were treated with KTP at a single center. A retrospective review was conducted evaluating patient characteristics, tumor data, and procedural information. Clinical outcomes were evaluated at 3, 6, 12, 18, 24, and 36 months for recurrence.

Results: Average patient age was 69±12 years. Most were transitional cell carcinoma (TCC). Primary locations were on the lateral and posterior walls. Average maximum power and total energy used during ablation was 40±10W and 7786±11227J. No complications were observed. 3 patients received MMC and 26 BCG. Tumor recurrence occurred in 8, 6, and 4 patients at 3, 6, and 12 months respectively. All were treated with repeat laser removal. Urothelial carcinoma progressed in 7 patients who underwent radical cystectomy, 4 within 6 months and 2 within 18 months of initial procedure.

Conclusions: KTP laser treatment for superficial bladder carcinoma is a safe and viable option.

Funding: AMS

Poster 37

GROSS VALIDATION OF MICRO-ULTRASOUND IMAGING FOR BLADDER CANCER IN A MURINE MODEL

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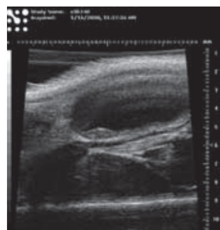
Introduction: A validated imaging modality for superficial bladder cancer is warranted to enable preclinical studies on intravesical agents. We sought to improve upon our previously described orthotopic superficial bladder cancer mouse model with validation using in vivo micro-ultrasound imaging with gross confirmation.

Methods: Using MBT-2 cells, we inoculated C3H/HeJ mice with 5x105 tumor cells via catheterization. Using VisualSonicsTM Vevo 770® device, we performed transabdominal imaging at baseline and every 3 days following tumor instillation. Bladders were imaged in sagittal and tranverse planes and tumors were measured. We sacrificed 3 mice with demonstrated tumors after each micro-ultrasound. Bladders were harvested, grossly examined using stereomicroscopy, and tumors were measured. 15 mice had confirmed bladder tumors via ultrasound and gross exam. Mean ultrasound tumor size was 1.76mm.

Results: Mean gross exam tumor size was 1.63mm (p=0.13, T-test). Bladder specimens were sent to pathology for histological exam. We show that micro-ultrasound imaging is a valid tool for assessing bladder tumors in a murine model, with respect to presence and size of tumors.

Conclusions: Tumors can be followed longitudinally for progression or regression following treatment.



Poster 38

IMMEDIATE TOTAL PARENTERAL NUTRITION FOLLOWING CYSTECTOMY AND URINARY DIVERSION DOES NOT PROVIDE SIGNIFICANT RECOVERY BENEFIT

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Introduction and Objectives: Total parenteral nutrition (TPN) provides calories when enteral intake is not feasible. We sought to determine if TPN immediately following cystectomy and diversion provided any benefit when compared to patients that did not receive TPN.

Methods: Patients were retrospectively divided into two cohorts –those that received immediate postoperative TPN and those that did not. Groups were compared regarding total hospital stay, time to tolerating solid food and perioperative complications including bacteremia, thromboembolic events, uncontrolled hyperglycemia and cardiac arrhythmias.

Results: Seventy-nine (72%) patients received immediate postoperative TPN while 31 (28%) did not. Mean age, American Society of Anesthesiologists class, time to tolerating solid food and hospital stay of the cohorts were statistically similar. Bacteremia, thromboembolic events, uncontrolled hyperglycemia and arrhythmia were noted in 8%, 6%, 0% and 4% of patients receiving TPN and 0%, 6%, 0% and 6% of non-TPN patients.

Conclusions: Immediate TPN following cystectomy does not appear to provide any significant postoperative benefit and may contribute to an increased risk of bacteremia.

Poster 39

PATIENT LEVEL TREATMENT INTENSITY FOR NON-MUSCLE INVASIVE BLADDER CANCER AND USE OF AGGRESSIVE THERAPY

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Introduction: Limited clinical evidence guiding therapy for non-muscle invasive bladder cancer (NMIBC) engenders practice variation, increased costs, and poor quality. As a marker of practice variation, we examined the intensity of NMIBC care at the patient level, and the association of intensity with use of aggressive therapy.

Methods: Incident cases of NMIBC (n=27979) were identified in SEER-Medicare (diagnosis 1992-2002; follow up to 2005). Processes of care (POC) (intravesical chemotherapy, urine cytology (UC), urinalysis (UA), endoscopic surveillance, radiographic surveillance (RS), and bladder cancer provider visits) were abstracted at the patient level. Relationships between POC intensity (first 2 years post diagnosis) and aggressive therapy were measured.

Results: For all POC, patients with high level utilization were significantly more likely to undergo aggressive therapy (OR 1.31 for UA to 2.33 for RS). Increased use of aggressive therapy persisted after adjustment for patient and tumor variables (OR 1.26 for UC to 2.23 for RS).

Conclusions: Greater use of POC is associated with increased use of active therapy. Connections between process of care use and survival require further elucidation.

Poster 40

SECOND OPINION PATHOLOGY IN TERTIARY CARE OF PATIENTS WITH UROLOGIC CANCERS

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Introduction: We evaluated the utility of second opinion pathology in patients with urologic cancers.

Methods: Records of patients seen for urologic cancer were reviewed. We report the differences with the original pathology, and impact on patient care.

Results: The pathology of patients seen by the urologic oncologist at our institution was reviewed with a pathologist. Formal second opinions were reported in 84 cases. There was disagreement with the original pathology in 19 (23 %); 8 prostate, 9 bladder, 1 testis, and 1 kidney. Of the prostate cancers (PCa), 3 were downgraded, and 5 were upgraded. Of the bladder cancers, 4 were down staged, 3 were downgraded and down staged, 1 was upstaged, and one was PCa. Metastatic PCa cancer reported in a mature teratoma revealed PSA positive acini with basal cell layer, not PCa. Treatment avoided/delayed were a prostate biopsy, treatment of metastatic PCa in 1 man, treatment of CIS in 2 patients, cystectomy in 4 patients, and partial nephrectomy in 1 patient. Treatments recommended were a radical prostatectomy, and a cystectomy.

Conclusions: Review of all pathology by the urologic oncologist and pathologist is an essential component of consultation in patients evaluated for urologic cancer.

Poster 41

COMBINED RENAL SINUS AND PERINEPHRIC FAT INVASION IS A NEGATIVE PROGNOSTIC FACTOR FOLLOWING NEPHRECTOMY FOR RENAL CELL CARCINOMA

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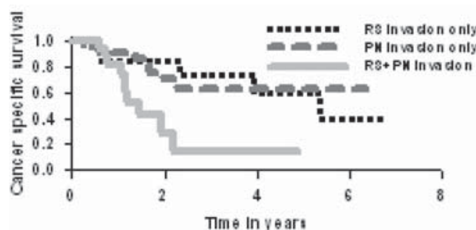
Introduction: Some studies have suggested that extension into the renal sinus fat (RSF) is a negative prognostic factor for renal cell carcinoma (RCC); others have shown no difference between RSF invasion and perinephric fat (PNF) invasion. Our objective was to compare outcomes of patients with RSF invasion to PNF invasion.

Methods: We analyzed a retrospective database of patients treated for renal cell carcinoma by radical or partial nephrectomy between 1999-2004 for patients with RSF or PNF involvement. Kaplan-Meier survival analysis using the log-rank test was used to compare cancer-specific survival between groups.

Results: Results from 70 patients show that patients with both RSF and PNF involvement have significantly worse cancer specific survival than patients with PNF invasion ($p < 0.01$) or RSF involvement ($p < 0.05$) alone. No significant difference was seen between patients with RSF invasion only or PNF only. Patients with both RSF and PNF had a significantly higher grade and size of tumor than patients with either ($p < 0.05$).

Conclusions: Patients with both RSF and PNF involvement have a worse prognosis than patients with either alone. These patients are at high risk for recurrence and death from RCC.



Poster 42

CRYOABLATIVE THERAPY IN THE MANAGEMENT OF CYSTIC RENAL MASSES

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Introductions and Objectives: Review our experience using cryoablation in the treatment of cystic renal masses.

Methods: 14 primarily cystic renal lesions were treated with cryoablation. Patient demographics, tumor characteristics, and the treatment success were reviewed.

Results: Mean age of 67.7 years. 11 masses treated with laparoscopic assistance and 3 percutaneously. 5 lesions were right sided, 8 left and 1 was in a renal transplant. Only 3 of the masses were >50% exophytic. Mean tumor size was 2.8 cm. Biopsies were obtained in 5 (35.7%) patients (2 non-diagnostic, 2 papillary renal cell cancer [RCA], 1 granular RCA). Technical modifications included leaving the fat overlying the tumor and puncturing either through fat or parenchyma with the cryoprobe(s) to help prevent fluid leakage. No major intraoperative or postoperative complications. One case was converted to an open approach due to difficult probe access to the tumor. Mean clinical and radiographic follow up in the remaining 12 patients was 14.6 months with no evidence of tumor recurrence.

Conclusions: Small renal masses consistent with cystic neoplasms can be treated using cryoablation with good clinical and radiographic control on intermediate follow up.

Poster 43

THE IMPACT OF WARM ISCHEMIA TIME (WIT) ON PERIOPERATIVE OUTCOMES & CREATININE CLEARANCE (CRCL) IN PATIENTS UNDERGOING LAPAROSCOPIC PARTIAL NEPHRECTOMY (LPN)

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Introduction: LPN is a complex procedure requiring advanced skills. We evaluated our series of LPNs by comparing the outcomes of those with short (<30 min.) versus long (>30 min.) WIT, and by assessing the impact WIT may have on postoperative renal function.

Methods: Our prospective database of 129 LPN was reviewed (48 and 63 patients with short and long WIT respectively). The impact of tumor size, patient age, body mass index (BMI), and tumor location was assessed. Perioperative complications, estimated blood loss (EBL), operative time and pathological margin status were compared between the two groups. SCr and CrCl were assessed at postoperative intervals greater than one month.

Results: Patients with long WIT had significantly larger tumors and longer operative time than those with short WIT. All other variables were similar between the groups. Mean postoperative SCr and CrCl did not differ between the groups.

Conclusions: Longer WIT is associated with larger complex renal tumors. However, complication rates, conversion rates, and EBL were not statistically different when comparing <30 minutes WIT to > 30 minutes. Pathological margin status was not affected by WIT. Most importantly, longer WIT did not impact long-term SCr and CrCl.

Laparoscopic Partial Nephrectomy & Warm Ischemia Time (WIT)

	Short WIT (N=48)	Long WIT (N=63)	P-Value
Age (years)	59.7	59.9	0.93
BMI (kg/m^2)	29.5	30.1	0.54
Preop Size (cm)	2.2	3.1	**0.0004**
Preop SCr (mg/dl)	1.11	1.13	0.91
Preop CrCl (ml/min/BSA)	87.75	80.89	0.46
Major Complications	6 (12.5%)	7 (11.1%)	
Minor Complications	2 (4.2%)	2 (3.2%)	
Conversion to Open	3 (6.3%)	1 (1.6%)	
EBL (cc)	183	184	0.9669
OR Time (minutes)	207.6	242.9	**0.0092**
Positive Surgical Margins	2 (4.2%)	2 (3.2%)	
Postop SCr (mg/dl)	1.29	1.37	0.71
Postop CrCl (ml/min/BSA)	71.3	81.6	0.26

Poster 44

CYTOREDUCTIVE NEPHRECTOMY IN THE NEW ERA: THE CLEVELAND CLINIC EXPERIENCE

Michael Lee, MD; Brian Lane, MD, PhD; Steven Campbell, MD, PhD

Introduction: Data from the clinical trials in 2001 showed improved survival with the combination of immunotherapy and cytoreductive nephrectomy (CRN) in the treatment of metastatic renal cell cancer. We looked to compare patients' overall survival and outcomes after undergoing CRN at the Cleveland Clinic prior to and after these sentinel studies.

Methods: All patients that underwent CRN at the Cleveland Clinic from 1998-2005 were included (n=117) and divided into two groups based on operation date, 1998-2001 (n=48) and 2002-2005 (n=69). A chart review was performed to obtain demographic and clinical data for each patient. Statistical analysis consisted of students' t-test and Chi-square analysis.

Results: Demographic and clinical characteristics between the groups are compared in Table 1. 3-year mortality was 19.61% and 40.00% for the 1998-2001 and 2002-2005 groups respectively (p=0.03).

Conclusions: Indications have not changed for CRN despite level I support. The significant improvement in mortality at 3 years may be linked to the development of effective molecularly-targeted agents and a trend toward improvement of surgical technique. CRN can be safely performed in patients with high functional status and metastatic disease both in an open and laparoscopic approach.

Table 1. Demographic and Clinical Characteristics

	1998-2001	2002-2005
Patients	48	69
Age – mean (range)	56.5 (26.1-82.1)	58.0 (24.4 - 84.6)
Sex – male / female	73% / 27%	62% / 38%
ECOG	0.3	0.4
Symptoms – Asymptomatic	24.5%	50.7%*
Symptoms – Local	57.1%	43.5%
Symptoms – Systemic	18.4%	5.8%
Mets – lung only	49.0%	40.6%
Mets – extensive visceral	18.4%	14.5%
Tumor Size	9.9	8.7
Fuhrman grade – 3-4 (%)	71.4%	72.5%
Tumor thrombus	24.5%	24.6%
Laparoscopic Approach	2.0%	33.3%*
OR time (min)	333.7	327.5
Blood loss (mL)	1706.3	1167.4
Intraop complications	16.3%	15.9%
Postop complications	20.4%	20.4%
Hospital Stay (days)	6.4	5.3

*p<0.05

Poster 45

ROBOTIC PARTIAL NEPHRECTOMY USING LAPAROSCOPIC ULTRASOUND AND BIPOLAR RADIOFREQUENCY ABLATION-ASSISTANCE WITHOUT HILAR CLAMPING

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Introduction: We report our initial experience of clampless robotic partial nephrectomy (RPN) using laparoscopic ultrasound (LUS) and radiofrequency ablation (RFA).

Methods: Following renal mobilization and hilar control without clamping, the mass is delineated using LUS, mapped out using a bipolar RFA probe, and sharply excised within the ablated plane. The tumor and biopsies are sent for margin analysis. Collecting system defects are repaired robotically.

Results: Of 29 patients with 30 renal masses, mean age was 56 years with an average tumor size of 2.9 cm (range 1.1-5.5). Mean operative time was 436 (± 87) minutes. Two cases required conversions to open partial nephrectomy and received blood transfusions. Estimated blood loss was 240 ml (range 20-1600). Pre- and postoperative creatinine was similar and all kidneys were functional on follow-up imaging. Average hospital stay was 3.3 days (range 1-8) and no patient developed delayed hemorrhage. The pathology and postoperative complications are listed in Table 1.

Conclusions: Clampless RPN using LUS and RFA is a safe and feasible treatment option. However, further study is needed to optimize patient selection criteria for this technique.

Table 1: Surgical Pathology and Postoperative Complications	Number
Pathology	
Renal Cell Carcinoma	20
Oncocytoma	4
Angiomyolipoma	4
Complex cystic disease	2
Postoperative Complications – Overall (%)	9 (31)
Superficial wound infection	1
Pneumonia	1
Urine leak managed conservatively	6
Urine leak requiring drainage	1
Urine leak ultimately treated with lap nephrectomy	1

Poster 46

PRE-OPERATIVE RENAL TUMOR ANGIOINFARCTION FOR MANAGEMENT OF RENAL CELL CARCINOMA WITH INFERIOR VENA CAVAL THROMBUS

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Cleveland Clinic

Introduction: Pre-operative angioinfarction (AI) of renal cell carcinoma with inferior vena caval (IVC) thrombus has been hypothesized to facilitate tumor resection by decreasing intra-operative bleeding and reducing the cephalad extent of the tumor thrombus. We sought to evaluate the influence of AI on patients undergoing radical nephrectomy with IVC thrombectomy (RN/IVCT).

Methods: Records for patients undergoing RN/IVCT from 1990-2007 were retrospectively reviewed. Based upon surgeon preference, pre-operative renal AI with ethanol was performed on the day prior to surgery.

Results: Overall, 130 patients underwent AI prior to RN/IVCT and 91 patients had RN/IVCT alone. The mean pre-operative hemoglobin for the two groups was 11.6 and 11.8 g/dL (p=NS), respectively. The AI cohort was transfused a median of 7 units of perioperative blood products compared to 4 units in the non-AI group (p<0.002). There were 17 perioperative deaths among patients undergoing AI and 3 in the RN/IVCT alone group (p=0.02).

Conclusions: We report the largest experience with renal tumors and IVC thrombi in the literature. AI of renal tumors with IVC thrombi may not ease intra-operative bleeding in all cases and should only be used in select cases.

Poster 47

RISK FACTORS AND MANAGEMENT OF URINE LEAKS AFTER PARTIAL NEPHRECTOMY

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Purpose: As nephron-sparing surgery is utilized more frequently for the management of renal tumors, the incidence of urine leaks will likely increase. We report our experience with the risk factors and management of urine leaks after open (OPN) and laparoscopic partial nephrectomy (LPN).

Methods: We retrospectively reviewed 127 partial nephrectomies (PN) performed between 2001 and 2007 (70 OPNs and 57 LPNs). Urine leak was defined as drain output consistent with urine greater than 48 hours after PN.

Results: Twenty-one patients experienced urine leaks after PN (13.3% overall, 10.5% after LPN and 18.5% after OPN). Patients with urine leaks had significantly greater tumor sizes (3.2 cm vs 2.4 cm, p<0.044), endophytic locations (57% vs. 19%, p<0.00027) and repair of collecting system defects (95% vs. 56%, p < 0.00072). There was no association with number of tumors, estimated blood loss, ischemia time, BMI, age or other surgical complications. The median time of urine leak was 20 days. Most urine leaks resolved with prolonged drainage, but 38% required further intervention.

Conclusions: Urine leaks are a complication unique to PN more commonly encountered with larger, endophytic masses that involve the renal collecting system.

Poster 48

SARCOMATOID DIFFERENTIATION OF RENAL CELL CARCINOMA RENDERS A POOR PROGNOSIS EVEN FOR SMALL RENAL MASSES AMENABLE TO MINIMALLY INVASIVE SURGERY

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Cleveland Clinic

Introduction: Renal cell carcinoma (RCC) with sarcomatoid differentiation portends a poor prognosis. Given the rising number of small renal masses (SRM) diagnosed annually, we sought out prognostic factors of SRMs with sarcomatoid changes.

Methods: Retrospective inquiry identified 22 patients (median age=57yr [32-82], male:female=3.7:1), who underwent either lap partial (4) or radical nephrectomy (18) with sarcomatoid transformation. 55% presented with metastasis.

Results: The median pathologic tumor size was 6.6 cm (2-11.5). Follow up was available on all patients. 82% died of disease (median survival = 9.75mos). Patients with metastatic disease (p=0.0046) and with higher pathological T-stage (p=0.0099) had lower survival rates (Kaplan-Meier). Cox proportional hazard regression model showed the presence of metastatic disease and pathologic T-stage (≤2) predicted survival (p=0.003,RR 12.8,p=0.017,RR 15.7). Our laparoscopic dataset yielded smaller tumors with sarcomatoid differentiation than reported in the literature, although overall survival was similar. A pT-stage ≤2 predicts increased survival independent of metastatic disease.

Conclusions: Although this is a small subset of patients, early surgery may provide a survival advantage to patients with sarcomatoid RCC.

Poster 49

RADICAL NEPHRECTOMY (RN) FOR T1B TUMORS IS ASSOCIATED WITH DECREASED OVERALL COMPARED TO PARTIAL NEPHRECTOMY (PN)

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Introduction: PN is preferred to RN for most cT1a (ï,£4 cm) renal masses. For cT1b (4 to ï,£7cm) tumors, there is still debate regarding the best management. RN is perceived to have reduced cancer recurrence, whereas PN preserves the glomerular filtration rate (GFR). We compared overall survival (OS) in patients undergoing PN or RN cT1b tumors.

Methods: From 1998-08, 885 consecutive patients with cT1b renal masses were grouped by RN (n=416) and PN (n=469) and compared with regards to overall survival. Those with pT3 disease and those with GFR<60 were excluded.

Results: Median follow up for the entire cohort was 43 months. RN was associated with decreased OS compared to PN (Fig. 1). Those undergoing RN were significantly older and had larger tumors. Those undergoing PN were significantly more likely to have decreased GFR. There were no differences between the groups in malignant rates, histologic grade, pT stage and Charlson comorbidity index. When controlling for age, GFR, and size, type of surgery (RN vs. PN) remained a significant predictor of OS p=0.0047.

Conclusions: PN in patients with cT1b tumors is a safe, viable alternative to RN and may offer a significant survival advantage in patients.

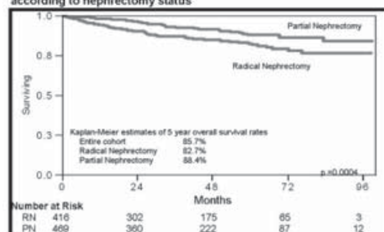


Figure 1. Overall Survival for those with cT1b renal tumors stratified according to nephrectomy status

Poster 50

OBSERVED CYTOKINE CHANGES FOLLOWING ABLATION IN A MURINE MODEL OF ADVANCED RENAL CANCER

Sean Hedican, MD[3]; Eric Wilkinson, BS[3]; Fred Lee, Jr., MD[2]; Thomas Warner, MD[1]; Nakada Stephen, MD[4]
[1]University of Wisconsin, Pathology; [2]Radiology-University of Wisconsin; [3]University of Wisconsin, Urology

Introduction: We sought to evaluate the cytokine profile of tumor bearing animals following ablation therapy in a murine model of advanced renal cancer.

Methods: 8 mice had 1 x10^5 Renca tumor cells implanted beneath the left renal capsule. 2 animals each were randomized to receive either cryo-, radiofrequency ablation (RFA) at 80o C, at 95o C, or sham surgery to their implanted kidney on day #11. Blood was obtained prior to and 6, 24, and 48 hours following therapy. Serum levels of cytokines were analyzed using a Bio-Plex array.

Results: Similar elevations of IL-2 and IL-4 peaking at 24 hours were observed following cryoablation and sham surgery, but not RFA. IL-5, IL-10 and GM-CSF levels peaked in all animals at 6 hours returning to or below baseline at 48 hours. Elevations were minimal except for IL-5. IL-12 and IFN-gamma levels were noted to steadily decline in all animals. TNF-alpha increased minimally following sham surgery and cryoablation, but increased significantly 48 hours after RFA.

Conclusions: Our initial investigations demonstrate cytokine changes that differ based on the type of ablation. Further elucidation of responses may assist in augmenting future treatment success of ablation for advanced renal cancer.

Poster 51

DIFFERENCES IN SHORT TERM OUTCOMES BETWEEN PATIENTS UNDERGOING LAPAROSCOPIC VERSUS OPEN PARTIAL NEPHRECTOMY WITH A SOLITARY KIDNEY

Emilie Johnson, MD; Khaled Hafez, MD; J. Stuart Wolf, MD; Alon Weizer, MD
University of Michigan, Department of Urology

Introduction: We reviewed our institutional experience with partial nephrectomy (PN) in a solitary kidney.

Methods: Clinical characteristics, perioperative outcomes and overall survival were compared between patients undergoing open versus laparoscopic PN between 1998-2007.

Results: Eleven and 28 patients underwent laparoscopic or open PN, respectively. More patients in the open group had higher risk disease burden: known metastatic disease or >1 tumor. The complication rate did not differ between groups (32 versus 27%, p>0.99); Postoperative creatinine increase was higher in the open group (0.7 versus 0 mg/dl; p=0.02). Three patients in the open group had a local recurrence, and five had a positive surgical margin, compared with none in the laparoscopic group. Median survival was not reached in the laparoscopic group; it was 38.8 months in the open group (95% CI 23.6-96.0, p=0.06).

Conclusions: Despite similar demographics and tumor size, patients undergoing open PN in a solitary kidney have higher risk disease burden than those undergoing laparoscopic PN, leading to poorer overall survival. With careful patient selection, laparoscopic PN can reduce impact on renal function without increasing complications or positive margins.

Poster 52

IMPACT OF RENAL LESION SIZE ON PERIOPERATIVE AND PATHOLOGIC OUTCOMES IN PATIENTS UNDERGOING LAPAROSCOPIC PARTIAL NEPHRECTOMY

Mark Katz, MD; Michael Eng; Andy Bernstein; Sergey Shikanov; Kevin Zorn; Arieh Shalhav
University of Chicago

Introduction: The objective of this study was to assess the peri-operative and pathologic outcomes of LPN when stratifying for size of renal lesion.

Methods: A retrospective review of LPN performed at the University of Chicago by a single surgeon (ALS) between October 2002 to July 2007 was performed. 125 patients were then stratified into 3 groups according to diameter of lesion: ≤ 2 cm (Group A), 2-4 cm (Group B), and ≥ 4 cm (Group C). Perioperative, operative and pathologic data were compared. As well, serum creatinine (SCr) and creatinine clearance (CrCl) were assessed postoperatively.

Results: With regards to operative parameters, warm ischemia time (WIT) and operative time were significantly longer in renal lesions >2 cm ($p < 0.01$). As well, the need for collecting system repair was more prevalent as lesion size increased (p=0.04). All other variables were similar amongst the 3 groups.

Conclusions: Repair of the collecting system and WIT increased with larger lesion size. However, positive surgical margin rates, complication rates, conversion rates and EBL were not statistically different amongst the 3 groups. Short-term post-operative renal function was not affected by lesion size.

Poster 53

HISTOLOGIC FEATURES ASSOCIATED WITH POOR PROGNOSIS IN RENAL CELL CARCINOMA (RCC)

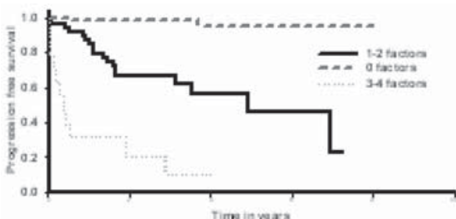
Tim Kresowik, MD; Matthew Johnson, BA; Fadi Joudi, MD
University of Iowa

Introduction: Many studies have proposed different histologic features that are associated with poor prognosis in patients with renal cell carcinoma (RCC). Our objective was to evaluate features that have a negative impact on disease recurrence and survival.

Methods: Data from patients who underwent nephrectomy or partial nephrectomy between 1999-2004 for RCC was retrospectively analyzed. We evaluated the presence of the following 4 histologic features: sinus fat invasion (SFI), microvascular invasion (MVI), necrosis(N), or renal vein involvement(RVI). Patients with positive lymph nodes or known metastatic disease at the time of surgery were excluded for a total of 159 cases analyzed.

Results: Significant differences in both survival and recurrence were seen between patients with 0, 1-2, and 3-4 of the above features (Kaplan-Meier log-rank test $p < 0.01$). In a Cox regression analysis including stage, grade, and size the risk ratio of recurrence having 1 of these features was 11.0 ($p < 0.01$).

Conclusions: In this studied population the presence of SFI, MVI, RVI, or N was associated with high risk of recurrence and death from disease. Patients with any of these features should be considered for trials of adjuvant therapy.



Poster 54

SURGICAL TREATMENT OF RENAL CELL CARCINOMA IN THE IMMUNOCOMPROMISED TRANSPLANT PATIENT

Matthew Tollefson, MD; Amy Krambeck, MD; Bradley Leibovich, MD; Igor Frank, MD; Michael Blute, MD; George Chow, MD
Mayo Clinic

Introduction and Objectives: Natural immune regulators are associated with decreased survival in renal cell carcinoma (RCC). Our goal was to determine if immunosuppressive medications used after solid organ transplant infers a similar poor prognosis.

Methods: All patients with a solid organ transplant that were surgically treated for RCC from 1970 to 2003 were identified and their clinical course was reviewed.

Results: We identified 17 patients: 11 had transplant prior to surgery and 6 after surgery. Type of transplant included: 9 kidneys, 3 hearts, 3 livers, 1 kidney and liver, and 1 kidney and pancreas. Tumor pathology included 10 clear cells RCC and 7 papillary RCC. Primary tumor classifications were pT1a in 11, pT1b in 5, and pT3b in 1 patient. All patients were NX/N0. Mean follow-up was 7.0 years. Immunosuppression was only decreased in one patient for recurrent skin cancer. One patient died from RCC that had metastatic RCC resected 8 years prior to renal transplant. No other patients had disease recurrence.

Conclusions: Surgical resection of RCC in transplant patients is associated with a low rate of tumor progression, despite immunosuppression. Therefore, we recommend resection of RCC without reduction of immunosuppression.

Poster 55

C-ARM CONE-BEAM COMPUTED TOMOGRAPHY WITH A FLAT PANEL DETECTOR FOR INTRAOPERATIVE RENAL IMAGING -ASSESSMENT OF IMAGE QUALITY

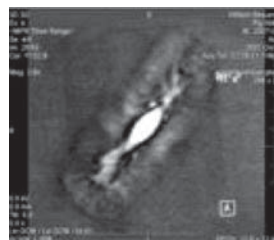
Frank Burks, MD; Evelyn Sebastion, BS; Leonard Kim, BS; Jose A. Gonzalez, MD; Alvaro A. Martinez, MD; Kenneth M. Kernen, MD; Jason M. Hafron, MD
William Beaumont Hospital

Introduction: This study assessed the feasibility of C-Arm Cone-Beam Computed Tomography (CT) for renal imaging.

Methods: Images were acquired with a SIREMOBIL® Iso-C3D, (Siemens Medical Erlangen, Germany) of a radiographic phantom as well as ex vivo porcine kidneys (n = 2) with and without retrograde contrast injections in the vascular and collecting system. Images of the radiographic phantom included qualitative assessment of a single axial slice of cylinders with density of renal tissue. Qualitative assessment of the ex vivo porcine kidney images included visualization of the renal parenchyma, vasculature and collecting system.

Results: Images of the radiographic phantom revealed contrast between the densities of renal tissue and the surrounding water density and allowed for real time navigation in the axial, coronal and sagittal planes. Images of the ex vivo porcine kidneys with retrograde contrast revealed 3D images of renal shape, and vascular and collecting system visible in the axial, coronal (Figure 1) and sagittal planes.

Conclusions: C-Arm CT imaging is capable of excellent spatial resolution and sensitivity in a radiographic phantom and ex vivo porcine renal units. Further human trials will better characterize this technology.



Poster 56

LONG-TERM SURVIVAL FOLLOWING RESECTION OF MULTIPLE METASTASES FOR PATIENTS WITH RENAL CELL CARCINOMA

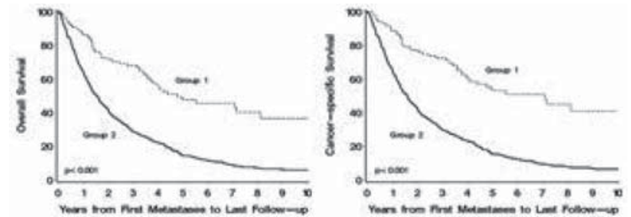
Angela Alt, MD[2]; Stephen Boorjian, MD[2]; Christine Lohse, MA[1]; Bradley Leibovich, MD[2]; Michael Blute, MD[2]
[1]Department of Health Sciences Research, Mayo Clinic, Rochester, MN; [2]Department of Urology, Mayo Clinic, Rochester, MN

Introduction and Objectives: To evaluate the long-term survival following surgical resection of multiple metastatic lesions for patients with renal cell carcinoma (RCC).

Methods: We identified 692 patients treated with radical nephrectomy for RCC between 1976 and 2006 who had multiple metastatic lesions. Cancer-specific (CSS) and overall survival (OS) rates for the 125 patients who underwent surgical resection (SR) of all radiographic evidence of metastases were compared to survival rates for the 567 patients who did not undergo SR.

Results: SR of multiple metastases was associated with significantly improved CSS and OS, as the CSS at 1, 3, and 5 years following the initial diagnosis of metastatic RCC was 88.5%, 72.3%, and 53.0%, respectively, for patients who underwent SR, compared to 64.8%, 29.5%, and 15.3%, respectively, for patients who did not undergo SR ($p<0.001$). Similarly, the median OS for patients treated with SR of multiple metastatic lesions was 4.8 years, versus 1.6 years for patients who did not undergo surgical extirpation of all radiographic disease ($p<0.001$).

Conclusions: SR of multiple metastases may be associated with durable survival for patients with RCC.



Poster 57

DOES TIME TO IMPROVEMENT FOLLOWING VARICOCELE REPAIR CORRELATE WITH PREGNANCY?

Anand Shridharani, MD; Jay Sandlow, MD
Medical College of Wisconsin

Introduction and Objectives: To determine whether the length of time to improvement in seminal parameters after varicocele repair for male factor infertility correlates with pregnant outcome.

Materials and Methods: 143 males underwent varicocele repair from September 2003 to October 2007. Semen analysis (SA) was performed at 3 month intervals postoperatively. Patients who are less than 1 year out from surgery and not pregnant, those without any follow up at 3 months or patients without post operative SA were excluded.

Results: Pregnancy data was available for 66 of the patients. Improvement in at least one seminal parameter occurred in 68%, and 26 couples have achieved pregnancy via natural means or artificial insemination (39.4%). Of the patients who conceived, 20 (77%) had improvement in their parameters at 3 months, 2 (8%) had improvement at 6 months, and 2 (8%) did not improve.

Conclusions: Those patients who undergo varicocele repair for male factor infertility and improve early are more likely to achieve pregnancy as compared to those who improve later or not at all. This may aid patients in their expectations, allocation of resources, and family planning depending on at what time their semen parameters improve.

Poster 58

HYPERTENSIVE PATIENTS HAVE HIGHER INCIDENCE OF ERECTILE DYSFUNCTION FOLLOWING RADICAL PROSTATECTOMY COMPARED TO NORMOTENSIVE CONTROLS

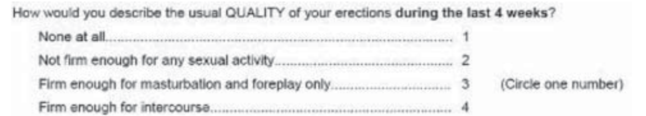
Jeffery Wheat, MD; Jessica Labo, BS; Claire Griffiths, BS; Brent Hollenbeck, MD; David Wood, MD
University of Michigan

Introduction: We examined patients with normal erectile function to determine whether hypertension (HTN) increases the risk of erectile dysfunction (ED) following radical prostatectomy (RP).

Methods: Men prospectively completed the Expanded Prostate Cancer Index Composite (EPIC) questionnaire before and 12 months following RP. A total of 130 patients who indicated normal erectile function by responding "4" to question 59 (figure 1) were included in the analysis. All men had bilateral nerve sparing RP. HTN was defined as taking ≥ 1 antihypertensive medication. The outcome was their answer to EPIC question 59 at 12 months post-RP. Pre-operative PSA, Gleason score, T-stage, and margin status were assessed and compared with the Student's t-test.

Results: 31 (23.8%) had pre-operative HTN. Following surgery, 7 (23%) of HTN patients had normal erectile function, compared to 47 (47%) of normotensive patients ($p=0.0108$). There were no significant differences between the groups with respect to PSA, Gleason grade, T-stage, or margin status ($p>0.05$).

Conclusions: Pre-operative HTN increases patient's risk of post-operative ED following RP. This is important in counseling patients regarding their expectations following surgery.


How would you describe the usual QUALITY of your erections **during the last 4 weeks?**

None at all.. 1
Not firm enough for any sexual activity.. 2
Firm enough for masturbation and foreplay only.. 3 (Circle one number)
Firm enough for intercourse.. 4

Poster 59

IMPROVED MALE SEXUAL FUNCTION WITH A NOVEL, LONG-ACTING TESTOSTERONE UNDECANOATE INTRAMUSCULAR INJECTION

Christopher Steidle, MD[2]; Joel Kaufman, MD[6]; Wayne JG Hellstrom, MD[4]; Abraham Morgentaler, MD[1]; Johnny Roy, MD, FACS[5]; Ridwan Shabsigh, MD[3]
[1]Beth Israel Deaconess Medical Center; [2]Indiana University at Fort Wayne; [3]Maimonides Medical Center; [4]Tulane University Medical Center; [5]University of Oklahoma College of Medicine; [6]Urology Research Options

Introduction and Objectives: Analysis conducted to evaluate effect of long-acting testosterone undecanoate (TU) 750 and 1000 mg intramuscular (IM) injection on sexual function of hypogonadal men.

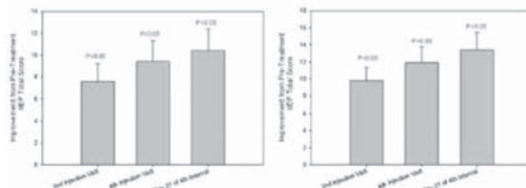
Methods: Hypogonadal men were randomized in US multicenter study to receive TU 750 (n=102) or 1000 mg (n=97) IM every 12 weeks for 48 weeks, for total of 5 injections. The International Index of Erectile Function (IIEF) was collected at baseline, 2nd, and 4th injection, (week 0, 12, 36, respectively) to assess effects of TU on sexual functioning.

Results: Treatment with TU 750 and 1000 mg IM resulted in significant improvements in all IIEF domains, including erectile function, satisfaction with intercourse, orgasmic function, sexual desire, and overall sexual satisfaction. Improvement in IIEF domains were seen as early as 21 days following the first injection of TU and continued for study duration (Figure).

Conclusions: This 48-week study demonstrated that treatment of hypogonadal men with TU 750 and 1000 mg IM resulted in significant improvements in erectile function and other markers of sexual satisfaction.

Funding: Indevus Pharmaceuticals.

Figure 1:Effects of TU 750 and 1000 mg IM on IIEF Scores



Poster 60

VARICOCELECTOMY IMPROVES DNA FRAGMENTATION IN INFERTILE MALES

Ian Schwartz, BS; Jay Sandlow, MD
Medical College of Wisconsin

Introduction and Objectives: Varicoceles are the most common identifiable cause of male infertility. Most evidence indicates that varicoceles can hinder semen parameters, as well as other sperm functions. It has also been shown that some men with varicoceles have higher levels of fragmented DNA in their sperm, which may either inhibit conception or result in recurrent miscarriage. We hypothesize that varicocelectomy will decrease levels of sperm DNA fragmentation.

Methods: We prospectively studied patients with a history of infertility and varicocele who had undergone subinguinal varicocelectomy and compared pre and post-op DNA fragmentation index (DFI) and high DNA stainability score (HDS) levels.

Results: A total of 31 patients underwent preoperative DFI and HDS testing, with subsequent microsurgical subinguinal varicocelectomy. Postoperative DNA testing was available for 12 patients at either 3 or 6 month follow up. Overall, 67% of pts had an improved DFI, with 33% moving from the abnormal to normal range (ie, <15%). No significant changes were seen in HDS scores.

Conclusions: Based on our preliminary results, we conclude that varicocelectomy improves DNA fragmentation in men with infertility and clinical varicoceles.

Poster 61

THE USE OF IMMUNOFLUORESCENCE IN MICRODISSECTION TESTICULAR SPERM EXTRACTION (TESE)

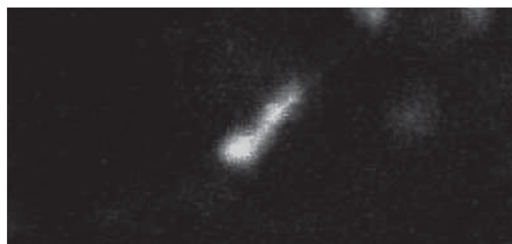
Jason R. Greenhalgh, MD; Thomas Griffith, PhD; Moshe Wald, MD
University of Iowa

Introduction: Microdissection TESE is used for treatment of nonobstructive azoospermia. There can be significant difficulty identifying sperm within the testes. We propose an immunofluorescene technique to locate foci of sperm for in-vitro fertilization and intracytoplasmic sperm injection.

Methods: Thirteen standard fertile and 8 sterile mice underwent microdissection TESE. A microinjector was used to inject fluorescein isothiocyanate (FITC)-conjugated mouse anti-Human acrosomal IgM antibody into adjacent injection sites along exposed seminiferous tubules. Following injection, testes were examined under a Bio-Rad Multiphoton microscope to locate sperm through visualization of fluorescence.

Results: In fertile mice, sperm were identified in 22 of 26 testes by morphological appearance or motility. No sperm were visualized in the sterile mice.

Conclusions: Use of an immunofluorescence technique during microdissection TESE for detection of sperm is a novel and feasible concept. Further studies are planned.



Poster 62

IMPROVED DEPRESSION-RELATED OUTCOMES IN MEN TREATED WITH A NOVEL LONG-ACTING TESTOSTERONE UNDECANOATE INTRAMUSCULAR INJECTION

Christopher Steidle, MD[2]; Mark Kipnes, MD[1]; Johnny Roy, MD, FACS[4]; Ridwan Shabsigh, MD[3]
[1]Diabetes and Glandular Disease Clinic of San Antonio, P.A.; [2]Indiana University at Fort Wayne; [3]Maimonides Medical Center; [4]University of Oklahoma College of Medicine

Introduction and Objectives: Analysis conducted to evaluate the effect of long-acting testosterone undecanoate (TU) 750 mg intramuscular (IM) injection on depression-related outcomes in hypogonadal men.

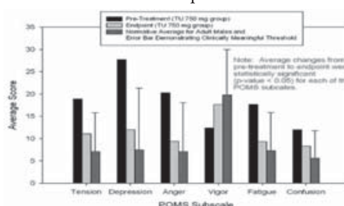
Methods: Men diagnosed with hypogonadism were randomized to receive TU 750 mg (n=120) IM every 12 weeks for 48 weeks. The Profile of Mood State (POMS) was collected at each injection visit through the 5th injection and 21 days following the 4th injection.

Results: Treatment with TU 750 mg IM, in a subset of clinically depressed patients (n=19), resulted in statistically significant ($P<.05$) changes in Total Mood Disturbance Score and all POMS subscales (Figure).

Conclusions: Treatment with TU 750 mg IM every 12 weeks for 48 weeks provided both statistical and clinical improvement in hypogonadal men with depression.

Funding: Indevus Pharmaceuticals.

Figure 1: 750 mg TU results in clinically meaningful POMS subscale scores in patients clinically depressed at pretreatment. Lower scores on the POMS represent improved mood state (less tension-anxiety, depression-dejection, etc.); negative correlations indicate improvement on the POMS as T concentrations increase.



Poster 63

EARLY INTERVENTION WITH PDE-5 INHIBITORS FOLLOWING PROSTATE BRACHYTHERAPY IMPROVES SUBSEQUENT ERECTILE FUNCTION

Geetu Pahlajani, MD; Rupesh Raina, MD; Marwan Ali; Anna Phillippi, RN; Ronald Ochoa, PAC; Craig Zippe, MD
Cleveland Clinic

Introduction: This study examines the use of early PDE-5 inhibitors (sildenafil citrate) in preventing ED following PMB.

Methods: We examined a single surgeon series of 69 patients that had undergone PMB with 1 year follow -up. Pts had baseline, 6 and 12 month SHIM/IIEF-6 scores recorded. The 69 patients were divided - early sildenafil (31)/non sildenafil groups (38) and their SHIM and IIEF-6 scores compared. Daily sildenafil (25-50 mg) was given immediately for 12 mos.

Results: In the non- PDE-5 group, the mean baseline SHIM score of 17.1 dropped quickly to 9.1 at 6 mos and stayed at 9.3 at 12 mos. In the early PDE-5 group, the mean baseline SHIM score of 21.8 decreased slightly to 17.6 at 6 mos, and was maintained at 17.9 at 12 mos. Using the Wilcoxon Rank Sum Test, the 6 and 12 month SHIM scores in the early PDE-5 group differed from the non- PDE-5 group. The IIEF-6 questionnaire confirmed the SHIM analysis.

Conclusions: Following PMB, patients experience a significant decline in SHIM/IIEF-6 scores at 6 and 12 months. Our data indicates a 50% decrease in the quality of their erections. This gives us a window of opportunity to initiate an early intervention program.

Poster 64

THE SEXUAL EXPERIENCE QUESTIONNAIRE: CORRELATIONS WITH MEASURES OF PSYCHOSOCIAL FUNCTION AND SATISFACTION

Evan Goldfischer, MD; LeRoy Jones, MD; Ira Klimberg, MD; James McMurray, MD; Li-Jung Tseng, PhD; Vera Stecher, PhD

Introduction: Outcomes on the Sexual Experience Questionnaire (SEX-Q), assessing functional, emotional, and satisfaction aspects of the sexual experience in men with erectile dysfunction (ED) were correlated with psychosocial and satisfaction measures in sildenafil-treated men.

Methods: Men with ED (minimally exposed to phosphodiesterase type 5 inhibitors) were randomized to 10 weeks of double-blind, placebo-controlled (DBPC), flex-dose sildenafil (n=104; 50 or 100 mg PRN) or placebo (n=105).

Results: After DBPC treatment, men on sildenafil had significant improvement ($P<0.05$) vs placebo on the SEX-Q, Quality of Erection Questionnaire, and Self-Esteem And Relationship questionnaire. More men were satisfied with sildenafil than placebo according to the Erectile Dysfunction Inventory of Treatment Satisfaction. Change from baseline in SEX-Q total and domain scores correlated positively with the other outcomes after DBPC treatment.

Conclusions: Correlation of SEX-Q outcomes with validated measures of self-esteem, confidence, relationship satisfaction, satisfaction with erection quality, and satisfaction with ED treatment suggests the SEX-Q is a simpler evaluation of psychosocial and satisfaction aspects of sexual experience in men with ED.

Funding: Pfizer, Inc.

Poster 65

IMPACT OF NOVEL LONG-ACTING TESTOSTERONE UNDECANOATE INTRAMUSCULAR INJECTION (750 MG) ON SEX HORMONES OF HYPOGONADAL MEN

Christopher Steidle, MD[2]; Mark Kipnes, MD[1]; Johnny Roy, MD, FACS[4]; Ridwan Shabsigh, MD[3]
[1]Diabetes & Glandular Disease Clinic of San Antonio, P.A.; [2]Indiana University at Fort Wayne; [3]Maimonides Medical Center; [4]University of Oklahoma

Introduction and Objectives: Analysis conducted to evaluate the effect of long-acting testosterone undecanoate (TU) 750 mg intramuscular (IM) injection every 10 wks on sex hormones (ie, dihydrotestosterone [DHT], estradiol [E2], sex hormone binding globulin [SHBG]) in hypogonadal men.

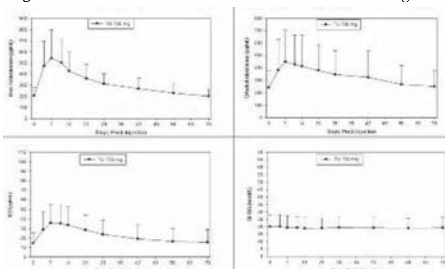
Methods: Hypogonadal men were treated with TU 750 mg (n=130) at baseline, wks 4, 14, and 24. DHT, E2, and SHBG were sampled at days 0, 4, 7, 11, 14, 21, 28, 42, 56, and 70. Serum hormone concentrations and their ratio to serum T concentrations were assessed.

Results: Patients' mean age was 54 yrs and mean body mass index was 31.5 kg/m2. Mean concentration of DHT and E2 tracked concentrations of T, while mean SHBG remained unchanged. Concentrations of these hormones (and their ratios to T) remained in the normal range throughout dosing interval. (Figure).

Conclusions: This 24-wk study demonstrated that treatment with TU 750 mg every 10 wks after the initial loading dose at 4 wks did not adversely affect sex hormones in men with hypogonadism.

Funding: Indevus Pharmaceuticals.

Figure 1: Ratio of Sex Hormones to Testosterone Following the 3rd Injection of TU 750 mg



Poster 66

VACUUM CONSTRICTION DEVICE (VCD) REVISITED : ITS EMERGING ROLE IN PREVENTING ERECTILE DYSFUNCTION (ED)

Geetu Pahlajani, MD; Rupesh Raina, MD; Anna Phillippi, RN; Ronald Ochoa, PAC; Craig Zippe, MD
Cleveland Clinic

Introduction: While the available literature focuses on VCD as a therapeutic option for ED, there are few reports on use of VCD in early penile rehabilitation. We prospectively analyzed our data on VCD for early intervention program.

Method: 60 men randomized to VCD after radical prostatectomy (RP) for 9 mos, used it w/constriction bands for vaginal intercourse twice/wk. They were compared to 35 men in the control group. The outcomes sought were incidence of sexual activity, return of natural erection sufficient for vaginal penetration (IIEF-5), and preservation of penile length.

Result: VCD group –100% sexually active, 32% regained natural erections at 9 mos. (IIEF -16); 17% having erections sufficient for vaginal intercourse; 23% reported decrease in length. Control group –% sexually active, 37% regained natural erections (IIEF –.17); 11% had erections sufficient for vaginal intercourse; 63% reported a decrease in length.

Conclusions: Evolving data suggests that early use of VCD facilitates early sexual intercourse, preservation of penile length, and potentially an early return of natural erection. Our current early intervention program following RP includes daily VCD therapy (10 min twice/day).

Poster 67

OPPORTUNITY TO RESCUE PATIENTS FAILING PDE5 INHIBITORS THROUGH THE COMBINATION OF VACUUM ERECTION DEVICE

James Bailen, MD, FACS; Arthur Burnett, MD, FACS

Purpose: This prospective study evaluated whether a VED and PDE5 inhibitors are effective in improving erectile function in subjects failing PDE5 inhibitors alone.

Methods: We evaluated 30 men (36-78 years) in whom PDE5 inhibitors at the highest recommended dose with at least 4-6 intercourse attempts had failed. The efficacy of combined treatment was evaluated using the International Index of Erectile Function-5 (IIEF-5) questionnaire, Sexual Encounter Profile (SEP)-2, SEP-3, and Global Patient Assessment Scale (GPAS).

Results: After 4 weeks the mean IIEF-5 score increased significantly over baseline from 9 to 18 ($p<0.001$). Of the 12 subjects with a SEP-2 response of â ˜No' at baseline, 9 responded â ˜Yes' ($p=0.004$). Of the 23 subjects with a SEP-3 response of â ˜No' at baseline, 17 responded â ˜Yes' ($p<0.001$). Of the 16 subjects with a GPAS response of â ˜not at all' or â ˜slightly' improved at baseline, 13 responded â ˜moderately' or â ˜greatly' improved after combination therapy.

Conclusions: Significant improvements over baseline were seen with combination therapy. This suggests that combination therapy may be effective in PDE5 inhibitor failures and may be considered prior to more invasive alternatives.

Funding: Timm Medical

Poster 68

THE EFFECT OF ANTERIOR URETHROPLASTY ON SEXUAL FUNCTIONING: A PROSPECTIVE ANALYSIS

Bradley Erickson, MD; Lee Zhao, MD; Steven Miller; Neema Navai, MD; Chris Gonzalez, MD, MBA
Northwestern University Feinberg School of Medicine, Department of Urology

Introduction and Objectives: To evaluate the effects of anterior urethroplasty on various domains of sexual function.

Methods: All patients undergoing urethroplasty completed the Brief Male Sexual Function Inventory (BMFSI) and International Index of Erectile Function (IIEF) questionnaires before surgery and on all subsequent post-operative visits.

Results: There were 35 men included in the study: mean age 44 years (16-66); mean stricture length 5.4 cm (1.5-14); mean follow-up time 224 days (48-359). The IIEF showed significant decreases in erectile function at the first post-op visit but significant improvements in all domains by the last follow-up visit (16 men with > 1 follow-up visit, mean time 116 days, 78-195). The BMFSI showed significant decreases in sexual desire and ejaculatory function scores at the first visit and improvements in all domains at subsequent visits. There were no differences seen when repair locations or types were compared (all p values > 0.5).

Conclusions: Anterior urethroplasty negatively impacts sexual functioning in the early post-operatively period. However, all domains were shown to improve to near baseline levels at an intermediate follow-up in this on-going study.

Poster 69

CLINICAL AND MAGNETIC RESONANCE IMAGING CHARACTERISTICS OF VAGINAL AND PARAURETHRAL LEIOMYOMAS: CAN THE DIAGNOSIS BE MADE PRIOR TO SURGERY?

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Introduction: To describe the clinical and magnetic resonance imaging (MRI) characteristics of vaginal and paraurethral leiomyomas.

Methods: All cases of surgery for paraurethral and vaginal wall masses evaluated by Urology and performed at The Cleveland Clinic between January 2006 and August 2007 were reviewed.

Results: 58 subjects were identified. Five had leiomyomas. All patients had a firm, smooth, non-tender, non-fluctuant, mass. MRI demonstrated a well-circumscribed shape, a homogeneous signal that was hypointense or isointense to muscle on T1 and hyperintense or isointense to muscle on T2-weighted images, and uniform enhancement. In all cases, MRI ruled out urethral diverticulae and pathology demonstrated leiomyomas of which one had atypical features.

Conclusions: Clinical and MRI characteristics of paraurethral and vaginal wall masses can help in the preoperative diagnosis of leiomyomas and differentiate them from urethral diverticulae and malignant tumors.

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ABDOMINAL SKIN GRAFT FOR LONG-SEGMENT URETHRAL STRICTURE RECONSTRUCTION

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Introduction: Many tissue sources have been used for urethroplasty in adults. Patients with lichen sclerosis (LS), long segment strictures, or prior oral graft use have less available tissue for urethroplasty. We describe a technique for full-thickness skin graft (FTSG) of hairless abdominal skin.

Methods: A FTSG of abdominal wall skin was harvested from the lower abdomen in 10 men with long-segment urethral strictures. The graft was defatted and sewn into the urethrotomy. 6/10 patients underwent two-staged procedures while the other 4 men were closed in one stage.

Results: Median stricture length was 12 cm (10-24 cm) and etiologies included failed hypospadias repair (2), LS (6) and unknown (2). Mean follow-up was 11 months (1-24 mo). Average graft area was 42 cm. Two patients with LS with prior urethroplasty of buccal and auricular tissue and strictures of 21 and 24 cm developed recurrent stricture of 2 cm 9 mo after surgery managed endoscopically. There was no graft site morbidity.

Conclusions: FTSG of abdominal skin may be useful for patients with long-segment urethral strictures in one or two stages when other graft sources are not feasible.

Poster 71

ROBOTIC ASSISTED RADICAL PROSTATECTOMY IN PATIENTS ON CHRONIC ANTICOAGULATION THERAPY

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Purpose: Patients requiring chronic anticoagulation therapy (CAT) with warfarin present difficult perioperative management for surgeons.

Materials and Methods: Sixty patients on CAT with warfarin were undergoing RARP were managed with one of two protocols: 1. Cessation of anticoagulation 7 days before surgery and resumption the evening of catheter removal (postoperative day 4-21) 2. Warfarin substituted with perioperative subcutaneous low molecular weight heparin with oral anticoagulation restarted following catheter removal.

Results: When compared with control cohort, CAT patients had increased operative times (189 vs 170minutes, p=.005) and hospital stay (1.4 vs 1.1days, p=.004). Estimated blood loss (123.9 vs 146.6mL p=.07) and 24hr change in hemoglobin (2.2 vs 2.3g/dL p=.44) were similar. When comparing protocols, there was a significantly higher transfusion rate (23% vs 2%, p<.05) with protocol 2, but no increase in complication or readmission rate. One non-fatal thromboembolic event occurred in one protocol 1 patient.

Conclusions: Robotic assisted radical prostatectomy can be performed safely in patients requiring CAT, with and without bridging therapy.

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FACE AND CONTENT VALIDATION OF A NOVEL ROBOTIC VIRTUAL REALITY SIMULATOR

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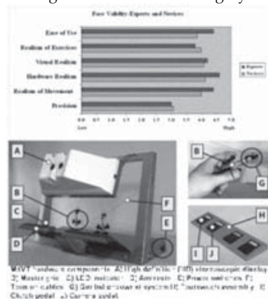
Introduction: We evaluated the face and content validity of what to our knowledge is the only available virtual reality simulator based on a complete kinematic representation of the da Vinci® system.

Methods: A total of 5 experts (ES) and 15 novices (NV) completed a series of 3 standardized exercises on the Mimic dV-Trainer (MdVT). ESs were urologists who had completed more than 50 robotic cases. NVs included participants with limited robotic exposure. Parameters of face and content validity were rated on a 5-point Likert scale.

Results: Face validity of the MdVT was established as all participants rated the MdVT between average to easy-to-use(see below). Similarly, both ESs and NVs rated the MdVT above-average to high in all parameters of realism. All participants assessed the MdVT to be highly relevant to robotic surgery, an extremely good practice format and very useful for training residents thereby affirming content validity.

Conclusions: The MdVT demonstrated excellent face and content validity as well as reasonable workload parameters. The use of this simulator in resident training may help bridge the gap between the safe acquisition of surgical skills and effective performance during live robot assisted surgery.



Poster 73

NOTES PARTIAL CYSTECTOMY: A NOVEL PURE TRANSURETHRAL INTRAVESICAL APPROACH IN A PORCINE MODEL

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Introduction: Natural Orifice Translumenal Endoscopic Surgery (NOTES) is a new minimally invasive modality for performing abdominal surgery without transcutaneous incision. We describe our technique for transurethral NOTES partial cystectomy including bladder closure in a porcine model.

Methods: A 22 French rigid cystoscope is inserted per urethra into the bladder of a female pig with air insufflation. With an endoscopic loop device through one channel and a grasping device through the other channel, the targeted area of the bladder is manipulated into the loop which is then firmly tightened. The bladder segment is excised with wire cautery and the specimen is removed en bloc with the cystoscope. The defect is re-approximated with novel use of endoscopic clips.

Results: We successfully used a transurethral NOTES approach to partial cystectomy using standard endoscopic equipment.

Conclusions: Transurethral NOTES partial cystectomy could reduce morbidity of conventional methods of partial cystectomy, and may be an alternative to transurethral resection of bladder tumor with small lesions. We plan chronic survival studies and histological evaluation to confirm completion of formal partial cystectomy and adequate bladder healing.

Poster 74

TRANSGASTRIC EXTRAVESICAL NOTES PARTIAL CYSTECTOMY: A NOVEL PURE NOTES APPROACH IN A PORCINE MODEL

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Introduction: Natural Orifice Translumenal Endoscopic Surgery (NOTES) is being adapted to urologic procedures. We describe our technique for transgastric NOTES partial cystectomy using standard endoscopic equipment.

Methods: A gastrotomy is made with a dual channel endoscope in the porcine stomach through which the endoscope is inserted. Pneumoperitoneum is established by insufflation through a channel. After identifying bladder, an endoscopic loop device is manipulated to the intended area of resection and tightened. A second loop is applied and an incision is made between the loops. A full-thickness specimen is removed transorally en bloc with the endoscope. Re-inspection confirms bladder closure.

Results: A transgastric NOTES partial cystectomy was achieved using standard endoscopic equipment.

Conclusions: We describe the first NOTES transgastric partial cystectomy in a porcine model. Potential advantages over our transurethral NOTES approach may include better visualization of adjacent structures, access to sites difficult to reach transurethrally and lymph node sampling. However, there may be increased morbidity with a gastrotomy. Further investigation in chronic models will be required to assess safety and efficacy.

Poster 75

PELVIC LYMPHADENECTOMY (PLND) DURING ROBOTIC ASSISTED LAPAROSCOPIC PROSTATECTOMY (RALP): ASSESSING NODAL YIELD, OPERATIVE OUTCOMES AND COMPLICATIONS

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Introduction: Herein, we describe our PLND technique and evaluate the pathologic yield as well as perioperative outcomes.

Methods: 1155 men who underwent RALP were identified in our institution's prospective database. 296 (25.6%) underwent bilateral PLND (Group A). The remaining 859 underwent RALP without PLND (Group B). The mean number of lymph nodes removed was 12.9 (1-44).

Results: Mean operative time (224 vs. 216 min, p=0.09) was observed for Groups A and B, respectively. Group A sustained 3 (1%) intraoperative complications, compared to 13 (1.5%) complications for Group B (p=0.2). Group A sustained 27 (9.1%) postoperative complications, compared to 63 (7.3%) for Group B (p=0.77). Lymphocele occurred in 6 (2.0%) patients in Group A and 0 in Group B (p=0.9). Pulmonary embolism occurred in 1 (.3%) patients in Group A, compared to 2 (0.2%) in Group B. Blood transfusion occurred in 9 (3%) patients in Group A and 15 (1.7%) in Group B, (p=0.4). No nerve or major vascular injuries were noted. Lymph node metastases were noted in 23 cases (7.7%). Review of our open LND series revealed a mean of 16 (2-49) nodes removed (p< .0001).

Conclusions: Robotic PLND yields comparable node counts to open PLND and can be performed without adding significant morbidity or time to RALP.

Poster 76

ROBOTIC PROSTATECTOMY IN MORBIDLY OBESE PATIENTS

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Introduction: The objective of this study was to study a cohort of morbidly obese individuals who underwent robotic radical prostatectomy with those of non-obese in our institute.

Materials and Methods: Between September 2001 and September 2006, of over 3181 robotic radical prostatectomy procedures done in a 5 year period 125 (3%) of patients had a BMI of over 35. Preoperative, intraoperative, and postoperative variables were assessed and compared with 385 having a BMI of 25 and less.

Results: Demographic. Pre operative, operative and pathologic details are given in table 1. Mean hospital stay was 1 day and mean catheter duration was 9.8 days (range 6-21 days). Only one patient required blood transfusion (0.01%). At a mean follow up of 78 weeks, 6 patients (4.8%) had biochemical recurrence compared to 14 (3.6%) in the non-obese (P=0.15). 3 patients (2%) were using 2 pads per day compared to similar percentage among the non-obese.

Conclusions: Robotic surgery is feasible in morbidly obese and can achieve good operative, postoperative outcomes and Oncologic control despite having larger prostates and a bad disease.

Poster 77

LAPAROSCOPIC PARTIAL NEPHRECTOMY IN OCTOGENARIANS

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Introduction: We present our experience on the outcomes of laparoscopic partial nephrectomy (LPN) in octogenarians for renal tumors.

Materials and Methods: We retrospectively reviewed patient records from 1999 to 2007 to compare demographics, operative data, and perioperative complications between octogenarians and younger patients.

Results: A total of 772 patients younger than 80 years (range 17-79) and 36 patients aged 80 years and older (range 80-88) underwent LPN. In comparison to younger patients, octogenarians had similar demographics and comparable mean clinical tumor sizes. However, octogenarians had a higher overall ASA score (P = 0.001) and an increased preoperative serum creatinine (P = 0.0003). The mean operating time (P = 0.8), warm ischemia time (P = 0.2), estimated surgical blood loss (P = 0.4), and intraoperative complications (P = 0.8) were also similar between the groups. Although not statistically significant, octogenarians demonstrated increased postoperative complications and had an increased mean length of hospital stay.

Conclusions: LPN can be performed safely in selected patients 80 years of age or older, with perioperative morbidity rates similar to those observed in younger patients.

Poster 78

COMPARISON OF ROBOT-ASSISTED LAPAROSCOPIC PYELOPLASTY WITH AND WITHOUT A URETERAL STENT

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Introduction: The use of a ureteral stent in robot-assisted laparoscopic pyeloplasty (RALP) is common. However, the watertight closure achieved in RALP may obviate the need for stenting. We compare outcomes between stented and unstented RALP.

Methods: A retrospective review of RALPs completed by a single surgeon (CPS) at our institution was performed. The last 12 consecutive RALPs were completed without a ureteral stent. Operative time, estimated blood loss, narcotic requirements (morphine equivalents), daily drain output, length of stay and peri-operative complications were compared between stented and unstented RALP.

Results: A total of 25 stented and 12 unstented RALPs were compared. Demographic data and results are shown in the table below. The only statistically significant difference between the two cohorts was lower narcotic requirements in unstented RALP (p=.004).

Conclusions: Our initial data suggests that unstented RALP is a safe and feasible. The fact that unstented RALP patients experienced less post-op pain may be in part attributable to the absence of a ureteral stent. Further prospective evaluation is needed; however unstented RALP can be performed by an experienced surgeon in a properly selected patient.

RALP	Mean Age	SEX (%)	SIDE OF UPJO	FLANK PAIN?	CROSSING VESSELS ON CT	TYPE	PRE OP STENT?	
Stented n=25	41	F=15 (60) M=10(40)	L-8 (32%) R=17 (68%)	Yes-20 (80%) No-5 (20%)	Present 9 (36%)	Dismembered 18 (72%) [illegible] 7 (28%)	Stent 13 (52%)	
Unstented n=12	48	F=10(83) M=2(17)	L=3 (25%) R=9 (75%)	Yes-11 (92%) No-1(8%)	Present 4 (33%)	Dismembered 12 (100%)	Stent 7 (58%)	
	OP TIME ([illegible])	EBL (ml)	CROSSING VESSELS INTRA-OP	Narcotic Requirement (morphine equivalents-mg)	LENGTH OF STAY (days)	DAILY DRAIN AVERAGE (ml)	COMPLICATIONS	Mean Length of Follow Up (months)
Stented n=25	253	50	Yes 20 (80%)	Intra op 35 Post op 50	2.7	31	2 urinoma, bowel injury (8%)	6
Unstented n=12	222	54	Yes 7 (58%)	Intra-op 23 Post-op 43	1.8	38	1-transient ureteral obstruction (8%)	6.5
p value	0.30	0.20		0.0036	0.63	0.23		

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ROBOTIC ASSISTED LAPAROSCOPIC PROSTATECTOMY (RALP) OUTCOMES: UNCENSORED OUTCOMES FROM AN EXPERIENCED LAPAROSCOPIST

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Introduction: Recent literature suggests that RALP is clinically equivalent to open radical retropubic prostatectomy (RRP). Many case series however, censor those early cases in the surgeons' learning curve. 118 consecutive cases from an experienced laparoscopic surgeon with minimal radical prostate cancer surgery experience are presented.

Methods: Clinical, operative, pathological, oncologic, continence, and erectile variables of 118 consecutive RALP cases were collected and analyzed. No cases were censored. Urinary and erectile function variables were reported using validated questionnaires.

Results: Median age and PSA at diagnosis were 57.9 years and 5.9 ng/mL, respectively. Median blood loss was 300mL. Conversion from RALP to RRP occurred in 9 cases (7.6%), but there were no conversions after case 21. Positive surgical margins were found in 23 cases (19.3%), and were evenly distributed throughout the cases. A detectable PSA was reported in 13 cases (11.0%).

Conclusions: Experienced laparoscopic surgeons with minimal prostate cancer surgery experience can effectively incorporate RALP into their practice with oncologic, urinary, and erectile functional outcomes similar to large case series for both RALP and RRP.

Poster 80

QUALITY ASSURANCE IN ROBOTIC PROSTATECTOMY AT A MULTI-USER COMMUNITY HOSPITAL

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Introduction and Objectives: At our 1,000-bed community teaching hospital, we have 11 urologists with robotic urologic privileges who trained through a team approach. Quality assurance is mandatory for all procedures done at our hospital. We present a unique protocol and findings in robotic prostatectomy quality assurance.

Methods: All our robotic privileged urologists participate in our prospective prostatectomy database. Surgeons must meet every 2-3 months to discuss best practice, techniques, and complications. Every 6 months, confidential individual surgeon outcomes are delivered to each robotic surgeon compared to the means for the team as a whole. Robotic prostatectomy surgical pathways are developed with agreement on best practices. Physicians are encouraged to improve technique through open discussion and outcomes measurement.

Results: Surgeons strive to improve by comparing their results to the group means. (see Table 1). Best practice are discussed and adopted. Outcomes have improved.

Conclusions: Our surgical quality assurance program has been effective and accepted by our team of robotic surgeons.

Funding: Ministrelli Program for Urology Research and Education

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Poster 82

LAPAROSCOPIC RENAL TUMOR CRYOABLATION: APPROPRIATE APPLICATION OF REAL-TIME ULTRASONIC MONITORING

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Introduction: Prior reports of laparoscopic cryoablation(LC) for renal tumors suggest real-time intracorporeal ultrasonic monitoring of the iceball formation is imperative. Ultrasonic monitoring of the iceball requires significantly more mobilization of the kidney and can increase morbidity.

Methods: 27 patients underwent LC for 29 renal masses. Lesions were identified and overlying fat was excised. Further mobilization of the kidney was not performed. Ultrasonic measurement and mapping of the renal lesion was performed, but monitoring of the iceball was not. All lesions were biopsied prior to LC.

Results: Mean patient age was 70.1 years with a mean renal tumor size of 2.2 cm. An average of 4 probes were utilized for each lesion. There was 1 (3%) major complication (stroke) and 5 (18.5%) minor complications: After a mean follow-up of 22 months, there were no local recurrences and 1 (3%) metastatic lesion.

Conclusions: LC of small renal masses continues to be a safe and effective technique, even without the use of real-time intracorporeal ultrasonic monitoring of the iceball. The potential utility of real-time monitoring is mitigated by the potential morbidity of renal mobilization and prolonged OR surgical procedure.

Poster 81

VESICOTOMY CLOSURE WITH NOVEL USE OF ENDOSCOPIC CLIPS: PRELIMINARY RESULTS IN ACUTE AND CHRONIC PORCINE MODELS

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Introduction: Natural Orifice Translumenal Endoscopic Surgery (NOTES) is a new technique for abdominal surgery without transcutaneous abdominal incisions. One potential access portal is the bladder, but unclosed vesicotomies could cause morbidity. Initial results of vesicotomy closure with endoscopic clips are discussed.

Methods: Full-thickness bladder incisions created in conjunction with NOTES procedures in a porcine model are closed with novel use of endoscopic clips. In a 2 week chronic model, a vesicotomy is made and then closed with endoscopic clips using a rigid cystoscope. Foley is removed on day 4. Bladder integrity is assessed with cystogram.

Results: Endoscopic clip closure was successful in six acute and two chronic animals. In our first two animals, there was no contrast leakage at weeks 1 and 2. No clips (n=5) were detached on necropsy.

Conclusions: Preliminary results of endoscopic clip closure in acute and chronic porcine models are promising. Histologic studies are planned to assess full-thickness healing. Further study is required to determine duration of clip attachment. Adequate closure may permit safe transvesical surgery and may also benefit patients with traumatic or iatrogenic bladder injury.

Poster 83

MAXIMIZING CONSOLE SURGEON INDEPENDENCE DURING ROBOTIC KIDNEY SURGERY BY UTILIZING THE 4TH ARM AND TILEPRO

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Introduction and Objectives: We describe multiple uses of the 4th arm and Tile Pro, a novel interface for radiologic imaging, on the da Vinci S surgical system, so as to maximize console surgeon independence.

Methods: Use of robotic instruments including Prograsp, Dual blade retractor, Double fenestrated retractor, and robotic hemolock clip applier, were prospectively evaluated on the 4th arm for patients undergoing robotic radical and partial nephrectomy. TilePro was evaluated for projection of live intraoperative ultrasound and CT images onto the console screen.

Results: 4th arm and Tile Pro was used in 16 cases (radical nephrectomy-6, partial nephrectomy-10). Prograsp and Dual blade retractor provided kidney retraction. Robotic hemolock clip applier controlled large and small vessels and secured renal capsular stitches during partial nephrectomy. Prograsp instrument placed and removed bulldog clamps on renal hilar vessels. TilePro projected live intraoperative ultrasound and CT images onto the console screen to help guide tumor resection.

Conclusions: The Tile Pro feature and robotic instruments used with the 4th arm gives the console surgeon greater independence during robotic kidney surgery.

Poster 84

DURABILITY OF REUSABLE HOLMIUM:YAG LASER FIBERS: A MULTICENTER STUDY

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Introduction: Both single use and reusable holmium laser fibers are used for intracorporeal lithotripsy. We evaluated real-world performance of reusable small-core sized laser fibers at two institutions.

Methods: Two stone centers prospectively evaluated a series of holmium laser fibers (270 - 365 micron). The total number of uses, the total energy delivered (kJ), and the average energy per use were recorded. Fibers were removed from the study when they were deemed non-usable.

Results: A total of 35 fibers underwent 342 total uses. The mean uses per fiber was 9.77 and the mean energy delivered 1.47 kJ. For the 270 micron core-sized fibers, 21 Laser Peripherals (LP) fibers and four Lumenis (Lum) fibers were tested. The LP and Lum 270 fibers averaged 8.23 and 3.00 uses before failure respectively. For the 365 micron core-sized fibers, seven LP fibers and four Lum were tested. The LP and Lum 365 fibers averaged 13.86 and 20.00 uses before failure respectively. Only one fiber failed during the first use.

Conclusions: Reusable holmium:YAG laser fibers remain a cost-effective option for intracorporeal lithotripsy. The 365-micron core-sized fibers averaged double the number of uses compared to the 270 micron core-sized fibers.

Poster 85

FIBROEPITHELIAL POLYPS OF THE URETER: A SINGLE INSTITUTION EXPERIENCE

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Introduction: Ureteral fibroepithelial polyps are reported to be associated with chronic inflammation. Endoscopic management has replaced open surgery as first line treatment but long-term efficacy is poorly understood. Objective: We evaluated presenting symptoms, associations, management and long-term efficacy of treatment for fibroepithelial polyps.

Methods: Clinical database review identified 27 patients over a 63 year period.

Results: Mean followup was 37 months (range (2-276). 14 patients were treated with ureteroscopy, 1 was treated with combined antegrade/retrograde endoscopy, 3 with open surgery after failed ureteroscopy and 9 with open surgery (last in 1994). After ureteroscopy, one patient required ureteroscopy for recurrence and two required dismembered pyeloplasty for stricture. Two patients developed ureteral urothelial carcinoma at 17 months and 16 years after ureteroscopic therapy.

Conclusions: Fibroepithelial polyps were associated with chronic inflammation but a number of patients lacked this risk factor suggesting additional etiological components. Endoscopic treatment is efficacious, however we observed a risk of ureteral cancer, stricture and recurrence suggesting a potential role for long term surveillance.

Table 1. Clinical characteristic of fibroepithelial polyps of the ureter.

Age (mean)	42 (range 2 to 74 years)
Sex	63% male
Time to diagnosis (mean)	24 months (weeks to 9 years)
Pain (total)	59%
Hematuria (total)	26%
Renal colic without gross hematuria	41%
Incidental	19%
Painless hematuria	15%
Renal colic with hematuria	11%
Other presentation	4%
History of urolithiasis	30%
History of chronic urinary obstruction	15%
History of ureteral stenting	7%
History of recurrent urinary tract infection	4%
No associated risk factors	33%
Left vs. right ureter	63% left 37% right
Location	61% upper ureter (26% at the UPJ) 10% mid ureter 14% distal ureter 4% diffuse ureteral polyps
Multiple Polyps	19% (range 2-20)
Polyp diameter (mean)	1.7 cm

Poster 86

IS THE 4.6F STENT AN IMPROVEMENT OVER THE 4.8F STENT? A PROSPECTIVE RANDOMIZED STUDY USING THE URETERIC STENT SYMPTOM QUESTIONNAIRE

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Introduction: Studies comparing the 6 and 4.8F ureteral stents have shown no significant benefit in symptoms. Recently, further decreases in stent size have claimed increased tolerance. We prospectively compared the 4.6F stent with the commonly used 4.8F stent using the validated Ureteric Stent Symptom Questionnaire (USSQ).

Methods: 48 consecutive patients undergoing ureteroscopy and stent placement were randomized to either a 4.6F stent (Applied Medical Resources) or a 4.8F stent (Boston Scientific). The USSQ was administered at the time of stent removal.

Results: Patient characteristics were similar, and mean stent duration was 15 days. 38 patients (79%) expressed dissatisfication with urinary symptoms and 16 (33%) reported significant interference in daily activities due to stent discomfort. Comparison of the USSQ revealed no significant differences in individual domain scores (Table 1). 25 patients (52%) expressed displeasure if stent placement was required in the future and did not vary between groups.

Conclusions: Ureteral stent placement is associated with patient morbidity and dissatisfaction. Results in this ongoing study show no difference on patient symptoms and quality-of-life between the established 4.8F and the newer 4.6F stents.

Table 1: Comparison of Mean Individual USSQ Domain Index Sum Scores (±SD)

Number of Patients	4.6F stent 23	4.8F stent 25	p-value
Urinary symptoms	30.09 (8.64)	30.88 (7.24)	0.73
Body pain symptoms	25.17 (13.35)	22.32 (13.31)	0.46
General health symptoms	15.09 (3.88)	12.52 (6.11)	0.09
Work performance symptoms	13 (6.91)	9.05 (5.12)	0.06