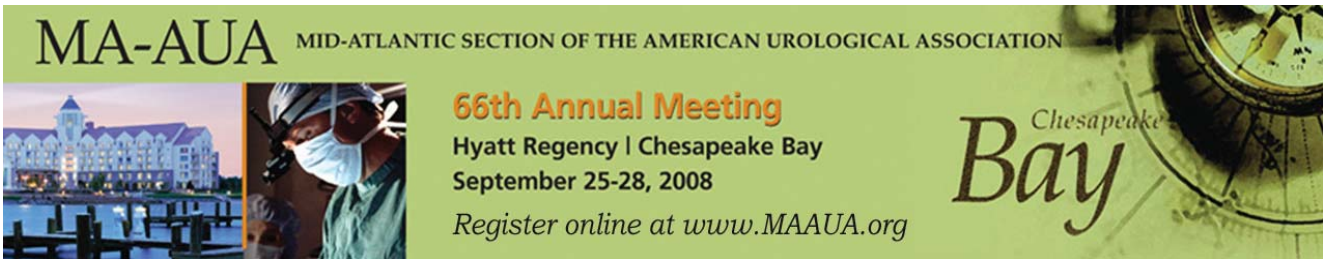

The Canadian Journal of Urology

is pleased to publish the following abstracts

from the 2008 Mid-Atlantic Section

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P1

T-Cell Coregulatory Molecule Expression in Urothelial Cell Carcinoma: Clinicopathological Correlations and Association with Survival

Stephen A. Boorjian[*1], *Yuri Sheinin*[*2], *Paul L. Crispen*[*2], *Sara A. Farmer*[*2], *Christine M. Lohse*[*2], *Susan M. Kuntz*[*2], *Bradley C. Leibovich*[*2], *Eugene D. Kwon*[*2], *Igor Frank*[*2]
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Introduction: Aberrant expression of T-cell coregulatory molecules has been investigated as a mechanism by which certain cancers may evade host immune surveillance. We evaluated expression of the T-cell coregulators B7-H1, B7-H3, and PD-1 in urothelial cell carcinoma (UCC) of the bladder.

Methods: Immunohistochemistry for B7-H1, B7-H3, and PD-1 was performed on paraffin-embedded sections from 318 consecutive patients with UCC who underwent radical cystectomy. Expression was correlated with clinicopathological outcomes and postoperative survival.

Results: B7-H3 was widely expressed in UCC, as 222/314 (70.7%) tumors demonstrated positive staining. Expression in UCC was significantly increased compared to adjacent, non-tumor urothelium, as a median of 70% of tumor cells expressed B7-H3, compared to 20% of cells in non-tumor specimens ($p<0.001$). The increase in B7-H3 expression was independent of tumor stage ($p=0.13$). Expression of B7-H1 by UCC tumors ($p<0.001$) and PD-1 by tumor-infiltrating lymphocytes ($p=0.012$) were significantly associated with increased pathological stage. Patients who had received intravesical bacillus Calmette-Guerin prior to cystectomy tended to demonstrate increased expression of B7-H3 ($p=0.023$) and PD-1 ($p=0.071$), but were less likely to express B7-H1 ($p=0.027$). Among the subset of patients with organ-confined disease (n=167), moreover, B7-H1 expression predicted all-cause mortality following cystectomy (HR 2.18; 95% CI 1.26-3.77; $p=0.005$).

Conclusions: B7-H3 is highly expressed in UCC across tumor stages, while B7-H1 and PD-1 expression are associated with advanced disease. B7-H1 expression predicts mortality following cystectomy for patients with organ-confined tumors. These molecules may represent novel diagnostic or prognostic markers, as well as therapeutic targets, for patients with UCC.

P2

The Impact of Temporal Presentation on Clinical and Pathological Outcomes for Patients with Sporadic Bilateral Renal Masses

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Introduction: The origin of bilateral renal masses has not been definitively established to date. Here, we evaluated the impact of synchronous versus metachronous presentation on clinicopathological outcomes of patients with bilateral renal masses.

Methods: We identified 310 patients who underwent surgical resection of sporadic bilateral renal tumors between 1970-2003, including 148 (47.7%) with synchronous tumors and 162 (52.3%) with metachronous lesions. Clinicopathological features of synchronous and metachronous tumors were compared. Survival rates for patients with synchronous (n=92) and metachronous (n=100) renal cell carcinoma (RCC) were estimated using the Kaplan-Meier method and compared with the log rank test.

Results: Metachronous tumors had a greater degree of pathological concordance than synchronous lesions, with 87.7% of metachronous tumors representing bilateral RCC, compared to 69.2% of synchronous masses ($p=0.002$). Patients with synchronous RCC tended to have an increased incidence of papillary RCC compared to patients with metachronous RCC, who were more likely to have bilateral clear cell RCC ($p=0.076$). A longer interval between tumors was inversely associated with the risk of cancer death for patients with metachronous RCC (HR 0.90, 95% CI 0.81-0.99, $p=0.039$). Compared to patients with metachronous RCC, patients with synchronous bilateral RCC had similar 10-year CSS (70.5% versus 69.4%, $p=0.51$) and OS (47.5% versus 51.2%, $p=0.58$).

Conclusions: Metachronous bilateral solid renal masses have a greater degree of pathological concordance and were more likely to represent malignancy. Surgical resection may provide durable cancer control for patients with bilateral RCC, with no difference in survival noted between synchronous and metachronous cancers.

P3

Abstract not available

P4

Abstract not available

P5

Percutaneous Cystolithopaxy in Reconstructed Bladders: The Role of CT-guided Access

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Introduction: Patients who have undergone augmentation cystoplasty or continent urinary diversion are at increased risk for the development of bladder calculi. Although minimally invasive treatments, such as percutaneous cystolithotomy, may be less morbid than an open approach, in many cases percutaneous access by standard techniques would be unsafe due to the proximity of adjacent structures. Herein, we review our experience with CT-guided access for percutaneous cystolithopaxy in this group of patients.

Methods: Between July 2006 through March 2008, 9 patients with calculi in urinary diversions or augmented bladders underwent percutaneous cystolithopaxy. The mean stone size was 5.2 cm (range 1.2-8.1 cm); 5 patients had multiple stones, and 4 patients had solitary stones. In all cases, percutaneous access was achieved with CT-guidance. A standard balloon dilator was used to place a 30 French sheath, and cystolithopaxy was performed with an offset nephroscope and ultrasonic or ballistic lithotripsy.

Results: In all cases percutaneous access was achieved without complication. Mean operative time was 78 minutes; there were no intraoperative complications. Mean length of hospitalization was 2.3 days. Post-operatively, one patient developed a UTI that was managed with antibiotic therapy.

Conclusions: CT-guided access for the percutaneous treatment of calculi in augmented bladders or urinary diversions is an effective approach for this complex group of patients. The benefit of axial imaging is its ability to define a safe pathway from the skin to the stone, an important consideration in these patients who have all undergone multiple prior abdominal surgeries.

P6

Zinc Chelation Induces Rapid Depletion of the X-linked Inhibitor of Apoptosis Protein (XIAP) and Sensitizes Prostate Cancer Cells to TRIAL-mediated Apoptosis

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Introduction: X-linked inhibitor of apoptosis (XIAP), the most potent member of the inhibitor of apoptosis protein (IAP) family of endogenous caspase inhibitors, blocks the initiation and execution phases of the apoptotic cascade. As such, XIAP represents an attractive target in treating apoptosis-resistant forms of cancer. We evaluate the effect of treating a prostate cancer cell line with the membrane-permeable zinc chelator, N,N,N′,N′,-tetrakis(2-pyridylmethyl) ethylenediamine (TPEN).

Methods: Various cancer cell lines, including PC-3 prostate cancer cells, were incubated with 8 µM TPEN. Cell lysates were evaluated with Western blotting. XIAP mRNA levels were detected by RT-PCR. Inhibition was tested with inhibitors of proteasomes (MG-132), caspases (Z-VAD-FMK), and cathepsin (ALLM and CA-074), lysosomal proteases (chloroquine), cysteine proteases (E64d), aspartic proteases (pepstatin A), and serine proteases (Pefabloc). Caspase-3 activity was measured using the flurometric tetrapeptide substrate DEVD-AMC.

Results: Treatment of PC-3 cells with TPEN induced rapid depletion of XIAP. The depletion of XIAP was selective, as TPEN had no effect on the expression of other zinc-binding members of the IAP family including cIAP1, cIAP2 and survivin. The down-regulation of XIAP in TPEN-treated cells occured via proteasome- and caspase-independent mechanisms and was completely prevented by the serine protease inhibitor, Pefabloc. In addition, administration of TPEN sensitized PC-3 cells to caspase-dependent apoptosis in response to treatment with death ligands CD95/Fas, TNF-Éø or tumor necrosis factor-related apoptosis inducing ligand (TRAIL).

Conclusions: Zinc-chelating agents may be used to sensitize malignant cells to established cytotoxic agents via down-regulation of XIAP.

P7

Identification of Novel Mechanisms Involved in Pro-apoptotic, Neuroprotective, and Anti-metastatic Effects of Cryo-shock Conditioned Media on Prostate Cancer Cells

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Introduction: Cryotherapy is an accepted modality for prostate cancer treatment. In this study, we designed experiments to identify factors induced in response to cryo-shock temperatures that may have potential direct and bystander effects.

Methods: PC-3 cell cultures were subjected to temperatures of 4°C, 0°C, -5°C, -10°C, and -20°C. Cryo Shock Conditioned Media (CSCM) was collected after treatment and underwent (1) protein precipitation and sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE) coupled with Matrix Assisted Laser Desorption/Ionization-Time Of Flight (MALDI-TOF) sequencing; and (2) TransSignal Human Cytokine Antibody Array analysis. RNA was isolated for Real-Timea Polymerase Chain Reaction Apoptotic SuperArray gene analysis. The bystander effect of CSCM was assessed in growing PC-3 cells using Real-Time Cell Electronic Sensing system.

Results: SDS-PAGE analysis revealed a unique band at the 18 kilodalton range in CSCM from -20°C cells. MALDI-TOF sequencing of this band revealed the presence of CypA (cyclophilin A) and NM23 (nonmetastatic protein 23). Significant induction of interleukin-1Éø (IL-1Éø) was shown in Cytokine Antibody Array analysis. Apoptotic SuperArray gene analysis revealed significant up-regulation of NOD1. 80% reduction in cell growth was observed in PC-3 cells exposed to CSCM from -10°C cells.

Conclusions: CypA has been shown to facilitate neuroprotective mechanisms. IL-1Éø has been reported in animal models to cause tumor regression. NM23 may suppress metastatic deposits. NOD-1 has been linked to caspase induced cell death. This study reveals the presence of multiple factors in CSCM that can contribute to effective prostate tumor management through apoptosis, neuronal protection, and suppression of metastasis.

P8

In Patients Eligible for Active Surveillance Treated with Radical Prostatectomy, Does Race Impact Postoperative Outcomes?

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Introduction: Active surveillance has become a reasonable option for patients with low grade, low stage tumors. While early data suggests that there is little risk in delaying definitive treatment, there is little data to reconcile racial disparities surrounding prostate cancer outcomes in candidates for active surveillance.

Methods: We reviewed our database of 2407 patients who underwent radical prostatectomy and isolated 648 White and 91 African-American patients who, preoperatively, fulfilled eligibility criteria for active surveillance. We studied pre- and postoperative parameters to discern any racial differences in this group of patients.

Results: In patients eligible for active surveillance, all-cause mortality was found to be 4.9% and 7.7% in Whites and African-Americans respectively (p=0.271) and the risk of biochemical failure determined to be 5.9% and 5.5% (0.888). White and African-American patients manifested no significant differences in surrogate markers of disease control including risk of extraprostatic extension, risk of seminal vesicle invasion, the risk of positive surgical margins, or tumor volume. Upgrading at pathology was common, occurring in 27.5% of patients eligible for active surveillance, however, there was no significant difference in the risk of upgrading between Whites and African-Americans.

Conclusions: In patients eligible for active surveillance who undergo radical prostatectomy, there are no significant differences in either surrogate measures of disease control, risk of upgrading, estimated tumor volume, overall, or recurrence-free survival between Whites and African-Americans. Taken together, these data suggest that there is no need to modify inclusion criteria for African-American patients enrolling in active surveillance protocols.

P9

A Novel Method for Accurate Shock Wave Lithotripsy of Moving Kidney Stones; In Vitro Evaluation

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Introduction: Shock Wave Lithotripsy (SWL), a standard treatment for kidney stones, targets the stones most effectively when they are positioned at the shock wave's focal point. However, kidney stones are moving targets due to respiration and thus do not remain constantly at this optimal location. Current SWL systems generate shock waves indiscriminately, with only a small fraction of the waves actually contacting the stone while it is at a wave's focal point.
To address this problem, we developed the FTS (patent pending) software that, when used with SWL, controls the shock waves that are generated only when the kidney stones appear at the said focal point.

Methods: We placed a gypsum stone in a net basket, then positioned the basket inside a custom-designed water container. We attached the stone to a small motor simulating respiratory motion, used a TWINHEADS TH-103 lithotripter and ultrasound imaging for stone localization. As a control, we used a comparable stone treated by SWL without FTS software.

Results: The FTS software accurately identified the focal point of the shock waves as well as the stone was positioned movement. The software successfully limited the generation of shock waves to only those time intervals when the stone was positioned at the said focal point. Treatment using SWL and FTS software completely disintegrated the stone at 560 shocks, compared to 1,780 shocks with SWL alone.

Conclusions: FTS software increases the accuracy of SWL in vitro. Further studies are needed to confirm this finding in clinical setting.

P10

Abstract not available

P11

Chromosome 17q12 Genetic Variants, Diabetes, and Prostate Cancer Aggressiveness

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Introduction: Epidemiological studies have suggested an inverse relationship between diabetes and prostate cancer (CaP) risk. A newly discovered CaP susceptibility locus on chromosome 17q12 (SNP rs4430796) is located within the TCF2 gene. This locus also confers protection against type 2 diabetes, potentially explaining some of the observed link between these conditions. Less is known about the effect of diabetes mellitus (DM) on CaP features among carriers and non-carriers of these 17q12 risk alleles.

Methods: From a radical prostatectomy series, we identified 593 genotyped men with information on DM. We evaluated the relationship between rs4430796 carrier status, DM, and treatment outcomes.

Results: Approximately 7% of the study population had DM. Although BMI was higher in diabetic patients, pathological tumor features were similar regardless of DM status. 17q12 carriers were significantly more likely to have a prostatectomy Gleason score ≥7. DM did not affect the likelihood of adverse outcomes among carriers or noncarriers of the 17q12 susceptibility alleles.

Conclusions: DM was not related to treatment outcomes in this cohort. However, there were relatively few men with diabetes in our prostatectomy database, particularly compared with the prevalence of diabetes in up to 21% of the U.S. population over age 60. This may reflect selection bias, genetic protection from CaP among diabetic patients, or both. Despite these limitations, our data suggest that diabetes status alone does not appear to correlate with disease-specific outcomes among carriers and non-carriers of the 17q12 susceptibility genes with clinically localized CaP.

P12

A Survey of Ethically Challenging Issues in Urologic Practice

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Introduction: The purpose of this study was to survey opinions regarding ethically challenging cases in urologic practice.

Methods: An ethics survey asked 3 demographic questions: type of practice (Q1: academic urologist, private practice urologist, medical student), age range (Q2: <45, 45-60, >60), and location of practice (Q3: urban, suburban, rural) and presented 10 ethical scenarios (Q4-13) (Table 1, Ethics Survey). Email surveys were sent out to academic urologists (N= 249), private practice urologists (N= 258) and medical students (N= 360) selected at random from published lists. Answers were compared between demographic groups using Fischer's Exact tests.

Results: Responses were received from 86 (35%) academic urologists, 62 (24%) private practice urologists, and 116 (32%) medical students. Lack of consistent opinion was common with <50% agreeing on a single answer choice for 4/10 ethical questions. Responses to Q5 differed based on type of practice and age ($p<0.05$). Responses to Q7 differed based on age and location of practice. Responses to Q13 differed based on type and location of practice ($p<0.05$).

Conclusions: This is the first study to survey opinions regarding ethically challenging questions in urologic practice. Responses were widely distributed and differed based on type of practice, age, and practice location. This study represents a first step toward the establishment of evidence-based consensus guidelines for ethically challenging issues in urologic practice.

P13

Chronic UTI in Children is not Associated with Bladder Wall Bacterial Pods

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Introduction: Recurrent UTI in various patient populations is a major clinical challenge whose pathophysiology remains incompletely defined. Recent evidence demonstrating the presence of bacterial pods in the mucosa of the bladder in animals would explain some recurrence and suggest alternative therapeutic approaches. A new method of tissue fixation (Carnoy's fixative) that preserves the mucosa and mucus layer should demonstrate bacteria in children with recurrent UTIs.

Methods: 13 patients with neuropathic bladder (9), reflux (3), or dysfunctional voiding (1) had open or endoscopic biopsies at the time of open bladder surgery, or at cystoscopy for recurrent UTI refractory to extended antibiotic regimens. Tissue was studied using Carnoy's fixative and the presence of bacteria assessed by FISH (fluorescent in situ hybridization) to a universal bacterial antigen. 10 patients had a history of recurrent UTI and 5 had active infection at the time of biopsy. Human tonsil specimens were used as the positive control for mucus layers and bacteria.

Results: No bacteria were detected in any of the bladder specimens. Cystitis cystica was present grossly in 4 patients with histologic evidence of lymphoid infiltrate. Hypervascularity and submucosal inflammatory infiltrates were noted in most patients.

Conclusions: Despite experimental evidence of bacterial pods in bladder biofilms, we could not identify any comparable pattern in humans with recurrent UTIs even in the presence of active UTI and cystitis cystica. The clinical significance of this finding remains to be defined. Alternative theories for recurrent UTIs need to be developed.

P14

Patient Perceptions Regarding Post-Prostatectomy Incontinence (PPI) and its Treatment

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Introduction: Incontinence rates vary widely in the literature following radical prostatectomy, secondary to differing definitions of incontinence; patient or physician reported rates, and whether subjective or objective measurement tools are used. What are not known are the patients concerns and perceptions of PPI as well as their knowledge of the current treatment options. An online questionnaire was administered to evaluate patients who have undergone a prostatectomy.

Methods: The survey was conducted in November 2007 in conjunction with Us TOO. Invitations were sent to 10,497 email addresses in the Us TOO Prostate Cancer NEWS You Can Use newsletter. 940 respondents agreed to participate of these 271 had urinary incontinence and continued. No incentive was given to the patients to participate.

Results: 77% of patients were between 56 and 75. 80% of patients had their prostatectomy > 1 year ago. 22% of men did not know SUI was a complication of surgery and 65% still had PPI. 39% of patients state that PPI has a major impact on quality of life, 34% state it affected their relationships and 50% state they would do anything to cure it. 74% of patients have discussed their condition with a MD, 70% of these were urologist but only 29% of the time the physician introduced the conversation. 25% were familiar with the AUS and 19% viewed it favorably.

Conclusions: PPI continues to be a significant problem for patients, this survey shows that we need to communicate better with our patients about PPI and its treatment.

P15

AdVance Male Sling in Patients with Moderate to Severe Stress Urinary Incontinence

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Introduction: Although the artificial urinary sphincter (AUS) is the gold standard for the treatment SUI in men, many refuse or are not candidates. For these patients treatment options are few, either pelvic therapy, injectables or a sling procedure. We present our experience in men with moderate to severe incontinence who elected to have an AdVance trans-obturator sling.

Methods: Data was collected on 27 patients with moderate to severe incontinence that elected to undergo an AdVance sling. Preoperatively, all patients underwent urodynamics and cystoscopy. Baseline and post-operative pad usage as well as quality of life (QOL) questionnaires were collected.

Results: The etiology of the SUI was prostatectomy in 24 pts., cryotherapy, photovaporization and TURP in 1 pt each. Follow-up ranged from 4 to 19 months with a mean of 11.6 months. Mean pre-operative pad usage was 6.3 pads, ranging from 5 to 12. 16 patients were wearing < 1PPD post-operatively. The average number of pads used post-operative is 1.5 (2 tailed T-Test, $p < 0.0001$). 2 patients experienced no improvement. The other 9 patients were at least >50% improved. QOL questionnaires show a significant improvement. There were no erosions, infections or patients in long term retention.

Conclusions: In men with moderate to severe SUI who refuse or are not candidates for an AUS, the AdVance sling can be performed with excellent results in 90% of patients. The durability of the AdVance sling needs to be confirmed with longer follow-up, but short term results appear very encouraging.

P16

Prostate Cancer Localization with 3 Tesla Endorectal T2-Weighted Magnetic Resonance Imaging: Correlation with Whole-Mount Histopathological Specimens

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Introduction: The sensitivity and specificity of magnetic resonance imaging (MRI) for the detection of prostate cancer vary widely in the literature. It is crucial that the accuracy of MRI be determined in order to appropriately use MRI for diagnosis, planning and treatment of prostate cancer. We correlated T2 weighted preoperative 3 Tesla endorectal MRI (3T erMRI) findings with postoperative whole-mount step-section histopathology to verify the diagnostic abilities of MR imaging in localizing prostate cancer.

Methods: We performed pelvic 3T erMRI on 22 patients with biopsy-proven prostate cancer who subsequently underwent radical prostatectomy. MR images were jointly reviewed by two radiologists, and prostatectomy specimens were jointly reviewed by two pathologists to determine the presence and location of prostate cancer. Correlation of the T2 weighted axial MR images to the whole mount pathologic specimens was then determined by side-by-side comparison. The correlation was based on division of the prostate into 5 levels from apex to base, and 6 sectors per level based on zonal anatomy. Each sector was evaluated for the presence and volume of prostate cancer. All lesions > 0.5 cc were included in analysis.

Results: The sensitivity and specificity of T2-weighted erMRI for the detection of prostate cancer lesions greater than 0.5 cc was 85.7% and 78.4% respectively.

Conclusions: Based on a rigorous review of MRI and whole-mount prostatectomy specimens, we have demonstrated that the high degree of sensitivity and specificity of 3T erMRI may permit use of this imaging modality for prostate cancer diagnosis, staging, and treatment.

P17

Fesoterodine Significantly Improves Treatment Response Rates in Subjects With Overactive Bladder as Early as 2 Weeks: Subpopulation Analyses of 2 Phase III Trials

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Introduction: This was a post hoc subanalysis of pooled data from 2 double-blind, placebo (PBO)-controlled trials in subjects with overactive bladder.

Materials and Methods: Eligible subjects were randomized to PBO, fesoterodine (FESO) 4 mg, or FESO 8 mg for 12 weeks. Patient-reported Treatment Response rates, defined as responses of "improved" or "greatly improved" on the 4-point Treatment Benefit Scale, were analyzed using asymptotic normal approximation methodology.

Results: Treatment Response rates were significantly higher in all subgroups treated with FESO 4 (n=532) or 8 mg (n=543) compared with PBO (n=545) at weeks 2 and 12, except for men receiving FESO 4 mg at week 2 (Table). FESO 8 mg was significantly more effective than FESO 4 mg among incontinent subjects and all subjects combined at weeks 2 and 12 and among women and subjects aged ≥65 years at week 12.

Conclusions: The percentage of subjects reporting a positive Treatment Response was significantly higher in the FESO 4 and 8 mg groups vs PBO at 2 weeks and sustained through the end of treatment. In several subgroups, Treatment Response rates were significantly higher among subjects who received FESO 8 mg compared with those who received FESO 4 mg.

Table. Treatment Response Rates (%) at Weeks 2 and 12 in Subjects Stratified by Gender, Age, and Incontinence Status (Missing Values Imputed via LOCF)

Population	PBO	FESO 4 mg	FESO 8 mg
2 Weeks			
All subjects	45	61*	67*†
Men	43	51	61*
Women	46	64*	69*
Age <65 y	47	61*	67*
Age ≥65 y	40	61*	68*
Continent	38	56*	61*
Incontinent	47	62*	69*†
12 Weeks			
All subjects	49	69*	77*†
Men	49	66*	75*
Women	49	70*	77*†
Age <65 y	53	74*	79*
Age ≥65 y	42	59*	71*†
Continent	47	64*	62*
Incontinent	50	71*	80*†

LOCF=last observation carried forward.
*$P<0.05$ vs placebo; †$P<0.05$ vs FESO 4 mg.

P18

mRNA Analysis of Inflammatory Cytokines in Normal Prostate Epithelial Cells, Benign Prostatic Hyperplasia Cells, and Human BPH Tissue Samples

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Introduction: The histologic finding of benign prostatic hyperplasia associated with chronic inflammation occurs in up to 80% of men, suggesting a role for inflammation in BPH. We investigated the expression levels of 84 inflammatory cytokines in a BPH cell line and in BPH patient samples, as compared to those in a normal prostate epithelial cell line.

Methods: Total RNA was isolated from the BPH-1 cell line, the PReC cell line, and the paraffin-embedded tissue specimens from 6 BPH patients obtained from transurethral resections of the prostate. First strand cDNA synthesis was performed with real-time PCR using the SuperArray inflammatory cytokine gene array. The array contained 84 disease-focused genes and several controls. Data was analyzed according to the É¢É¢Ct method (Ct=threshold cycle). Expression in PReC cells was compared with expression in BPH-1 cells and human BPH samples.

Results: The BPH-1 cells demonstrated 380-fold increased expression of monocyte chemotactic protein (MCP-1), followed by IL-8-RB (95-fold) and IL-10-RA (100-fold), when compared to PrEC cells. Sufficient RNA was obtained from 4 of the human samples, which also revealed an average of 9000-fold increased expression of MCP-1 in 2 cases, when compared to PrEC cells.

Conclusions: The overexpression of MCP-1 in BPH cells and clinical samples suggests a link between inflammatory cytokine overexpression and BPH cell proliferation. Subsequent investigations will examine the cause of overexpression and the effect of anti-inflammatory agents on cellular proliferation.

P19

Dutasteride in the Treatment of Hematospermia Refractory to Antibiotic Therapy

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Introduction: Hematospermia is often a benign but bothersome finding in men of all age groups. Antibiotic therapy has been the standard first-line treatment given its association with infectious etiologies. No other standard of care for refractory hematospermia has been designed. Our study evaluated the effectiveness of dutasteride, a dual 5-alpha-reductase inhibitor, to treat hematospermia refractory to antibiotic therapy.

Methods: 65 men between the ages of 40 and 72 presented over a two year period with hematospermia of 1 to 26 weeks duration. Eleven of them were found to have elevated PSAs and were excluded from the study. The remaining 54 patients were given a 6-week course of flouroquinolone antibiotics. Patients who complained of persistent hematospermia were further evaluated with transrectal ultrasonography and given a 3-month trial of dutasteride 0.5 mg.

Results: 30 of the original 54 patients had complete resolution of their hematospermia with antibiotics alone. Of the 22 patients with persistent hematospermia and nonmalignant lesions on ultrasound, 16/22 men (66.7%) had resolution of their hematospermia on dutasteride therapy.

Conclusions: Initial treatment of hematospermia frequently and appropriately includes fluoroquinolone therapy. If the antibiotic therapy fails to resolve the hematospermia, and further workup does not reveal a definitive and treatable cause, dutasteride seems to be a reasonable second-line treatment independent of patient age or PSA.

P20

Single Stage Urethral Reconstruction Following UroLume® Failure

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Introduction: Recurrent urethral stricture disease after UroLume® insertion is a common occurrence. Management options include endoscopic resection, additional stent placement and open reconstruction. We describe our experience with post-UroLume® single stage urethral reconstruction.

Methods: A retrospective review was performed on 13 patients with recurrent stricture following placement of UroLume® endoprosthesis. Of the patients, 10 had anterior strictures and 3 had Urolume® placed for pelvic fracture urethral distraction defect. Reconstruction had been attempted in 6 patients prior to UroLume® placement. The average time to UroLume® failure was 22 months (range 2-144). Mean stricture length was 6.7 cm (range 2-13). The primary stricture location was bulbar (7), membranous (3), panurethral (2) and pendulobulbar (1). Single stage reconstruction was completed in all patients. Reconstructive techniques included excision and primary anastomosis (2), augmented anastomosis buccal mucosal graft (BMG) onlay (4), BMG onlay (2), circular penile skin island on dartos fascial flap (3), combined tissue transfer with scrotal skin island (1), and BMG to a perineal urethrostomy (1).

Results: Mean age at time of reconstruction was 42 years (range 15-60). Median office follow-up was 31 months (range 6-158). In 11 patients (85%) the urethra is patent without further instrumentation. Two patients are on chronic home dilation. There were no complications related to positioning or donor site morbidity.

Conclusions: Single stage repair following UroLume® failure is a reasonable option in patients with a variety of stricture locations and etiologies. Overall clinical success in this series is 85% (11/13). Chronic self-dilation has been a successful salvage measure.

P21

The Significance of Ureteral Abnormalities at the Time of Radical Cystectomy

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Introduction: Frozen sections of ureteral margins (UM) are routinely obtained at the time of radical cystectomy (RC) to attempt a cancer free ureto-intestinal anastomosis, evidence suggests this may not affect survival. Our goal was to determine the incidence of ureteral abnormalities at RC and assess its impact on clinical outcomes.

Methods: We retrospectively reviewed a prospectively maintained RC database from our institution. Patients with ureteral abnormalities ranging from atypia to carcinoma in-situ (CIS) were identified by frozen section analysis. Univariate cox regression analysis and Kaplan-Meier survival curves were constructed to evaluate the effect of abnormal ureteral frozen sections on patient survival.

Results: Forty-seven out of 284 (16.5%) patients were identified having ureteral abnormalities: 18 CIS, 18 dysplasia, and 11 TCC. There was no significant difference in 5 and 10-year overall survival (OS) and disease specific survival (DSS) between patients with abnormal UMs and normal UMs (p=0.66, p=0.71).
Nine of the 284 (3.1%) patients in our analysis developed upper urinary tract recurrences (UUTRs). Two had CIS at the time of frozen section analysis, 2 dysplasia, and 5 normal margins. Four of the 47 (8.5%) patients with abnormal UMs had UUTRs compared to 5 of the 237 (2.1%) patients with normal UMs.

Conclusions: Abnormal UMs at time of RC does not appear to effect survival. The incidence of UUTRs was higher in patients with abnormal UMs. This suggests patients with abnormal UMs at the time of RC need closer upper urinary tract follow-up than patients with normal UMs.

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The Impact of Surgical Delay on Renal Mass Interval Growth Based on Preoperative Imaging and Final Pathologic Specimen

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Introduction: Growth rates have been defined for renal masses. We examined renal mass sizes based on preoperative imaging and final pathologic specimen to define the impact of treatment delay on lesion size and pathological stage.

Methods: Patients with RCC treated laparoscopically at our institution since 1999 with CT or MRI imaging reports were included. Pre-operative imaging and pathologic sizes were compared. Time intervals between diagnosis and surgery were determined.

Results: 132 patients met inclusion criteria. Mean pre-operative tumor size and pathologic specimen were 5.1cm. Average delay from diagnosis to surgery was 14.3 weeks. By size 40% of lesions were larger, 53% smaller, and 7% unchanged. Pathologic stage was unchanged in 80% of patients (106/132). However, 10% (13/132) of patients were up-staged from a T1a to T1b or a T1b to T2. 10% of patients (13/132) were downstaged. Difference in treatment delay was significant between tumors that were upstaged (18.4 weeks) versus those downstaged (7.6 weeks) ($p \leq 0.05$). The average growth rates for tumors that enlarged (n=53) was 1.67 mm/week and 2.1 mm/week for upstaged tumors (n=13).

Conclusions: Delay in treatment impacts candidates for partial nephrectomy as many patients crossed among pT1A, pT1B and pT2 disease. Higher growth rates in our series may reflect imaging underestimation or selection bias. Our data suggests treatment delay beyond 14 weeks may increase the risk of tumor upstaging.

Renal Mass Changes From Imaging To Pathologic Specimen

	Radiographic Size (cm)	Pathologic Size (cm)	Growth (mm/week)	Treatment Delay (weeks)
Size (n=132) (mean)	5.1	5.1	N/A	14.3
Size-no change (n=9)	5.0	5.0	N/A	16.8
Size-increase (n=53)	4.4	5.8	1.67	20.3
Size-decrease (n=70)	5.5	4.6	N/A	9.4
TNM-no change (n=106)	5.0	5.0	0	14.6
TNM-upstage total (n=13)	5.3	5.3	2.1	18.4
TNM-upstage T1a to T1b(n=9)	3.2	5.1	1.2	22.1
TNM-upstage T1b to T2 (n=4)	5.8	9.9	4.0	10.0
TNM-downstage total	6.2	4.2	N/A	7.6

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Abstract not available

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Measurement of Force Feedback in Laparoscopy: A Step Toward Safer Surgery?

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Introduction: Trocars are used universally in laparoscopy to insert instrumentation through the body wall. Direct and fulcrum forces are applied to the trocar and thus to the tissues. Despite widespread use of trocars, little is known about how these forces are transferred to patients. Robotic systems with minimal haptic feedback further disconnect the surgeon from the patient. The goal of this project was to design a system for force feedback and study force translation through laparoscopic trocars.

Methods: This project was a unique collaboration between a student design team, biomedical engineer, and urology mentor. Problem identification, solution design, and prototype production were performed. Proof of concept was achieved as well as development of a working prototype.

Results: Using a plastic trocar, strain gauges were fixed in four quadrants around the base. Strain gauges measure the force deformation of the trocar and can be calibrated to known forces. Measured force was then compared to critical force for tissue damage. Feedback utilizing a LED indicator was given when measured force exceeded critical force. The critical force can be changed according to clinical circumstances. Force history recordings for each individual trocar could provide interesting data for further study.

Conclusions: The development of "smart" instrumentation that maintains treatment efficacy and improves patient safety is a desirable evolution in surgery. As a first step, we present a novel system to measure force from laparoscopic trocars that provides surgeon feedback. Further study is needed to determine how this information can be utilized to improve patient outcomes.

P25

Laparoscopic Repair of Iatrogenic Bladder Injury

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Introduction: To evaluate the technique and results of laparoscopic cystorrhaphy after a laparoscopic iatrogenic bladder injury at a single institution.

Methods: From our patient database, we identified six patients that had iatrogenic bladder injuries during laparoscopic gynecologic procedures from January 2007 through April 2007. All of these patients underwent a laparoscopic cystorrhaphy by one surgeon. The procedure was performed using a two layer closure with 2-O vicryl, for a water-tight closure. A 20 French foley catheter was placed and the bladder was filled after the repair using 300ml of saline to test the integrity of the repair. All demographic data, surgical details, anatomic location of bladder injuries, and outcome results were reviewed.

Results: Patient ages ranged from 35 to 50 for a mean patient age of 44±6 years. None of the patients had a visualized leak after repair intraoperatively, and all repairs were done through the already existing ports. A cystogram at one week follow up did not reveal any contrast extravasation. The foley catheter was removed on the same day of the cystogram in all patients. Mean follow up ranged from 7 to 10 months for a mean of 8.5 months. None of the patients have developed complications from the repair such as a fistula, urinary incontinence, bleeding, wound infection, bladder calculi or urinary tract infections. All patients have remained catheter free.

Conclusions: Patients undergoing laparoscopic surgery with an iatrogenic bladder injury identified at the time of surgery can be safely and effectively managed with a laparoscopic cystorrhaphy.

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Robot Assisted Laparoscopic Prostatectomy: A Single Institutions Learning Curve

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Introduction: To evaluate the results of robot assisted laparoscopic prostatectomy (RALP) at a high volume conventional laparoscopic radical prostatectomy (LRP) center to determine if a learning curve still exists.

Methods: A total of 293 consecutive men underwent RALP between May of 2000 and November of 2006. Patient data was prospectively collected and reviewed including the preoperative PSA and Gleason score, operative duration, blood loss, duration of hospitalization, pathologic Gleason score and margin status.

Results: Mean operative duration for the entire group was 158±50min, blood loss was 533±416ml, hospital duration was 5 days and age was 61 years. Operative time showed a statistically significant decline at two different break points; after the first 12 cases, and after 189 cases dividing the patients into three groups. Operative times were 242±64 min, 165±43 min, and 134±45 min for each group respectively. The positive margin rate in each group was 7/12 (58%), 41/180 (23%), and 10/89 (9%) which was statistically significant. Foley catheter duration was also statistically significant between the three groups. Age, preoperative Gleason and PSA were statistically significant between the second and third groups only. There was no statistical significance demonstrated in blood loss, post operative Gleason score, and length of hospital stay.

Conclusions: As experience with the RALP technique increases, there continues to be a significant decrease in operative time, positive margin rate, and duration of foley catheterization. Therefore, even at a high volume LRP center a learning curve exists when performing RALP.

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High-Frequency Jet Ventilation versus Conventional Anesthetic Techniques during Extracorporeal Shock Wave Lithotripsy: Is There a Benefit When Utilizing a Newer Unit with Smaller Blast Paths?

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Introduction: The benefit of high-frequency jet ventilation (HFJV) during extracorporeal shock wave lithotripsy (ESWL) has been reported. However, these studies employed older lithotripsy units with larger blast paths when compared to newer machines. We investigated how HFJV affects the clinical parameters of ESWL utilizing a newer lithotripsy unit with a smaller focused blast path.

Methods: We retrospectively reviewed all patients who underwent ESWL by a single surgeon from July 2006 until December 2007 with the Seimens LITHOSTAR Modularis. Either HFJV or conventional anesthetic techniques were utilized based on the anesthesiologists' preference. Preoperative imaging was reviewed for stone size, number, and location. Total OR time, procedure time, number of shocks and total energy delivery were analyzed. Postoperative imaging was review for stone-free rates.

Results: A total of 112 patients underwent ESWL with 80 undergoing conventional anesthesia, and 32 with HFJV. Age, BMI, preoperative stone size, number, and location were not significantly different between the groups. The HFJV group required significantly less total shocks (3358 vs. 3754, p=0.0015) and total energy (115.8 joules vs. 137.2 joules, p=0.0015). Total operating room time, ESWL procedure time, and postoperative stone-free rates were not significantly different.

Conclusions: Previous studies utilizing older ESWL units with larger blast paths have shown that HFJV can be effective in reducing total shocks and total energy. Reduced shocks and energy may be beneficial in terms of decreased postoperative pain and nausea. Our data is consistent with these studies but demonstrates benefit with new units that have smaller blast paths.

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Abstract not available

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Female Sexual Dysfunction (FSD) in Patients with Painful Bladder Syndrome (PBS): Evaluation of the Use of Elmiron

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Introduction: We have previously reported that patients with PBS receiving anti-depressant medication exhibit significantly worse symptom scores employing the Female Sexual Function Index (FSFI) than those taking other medication (ANOVA, $p< 0.001$). The authors report herein the data on 1300 subjects further indexed by the use of Elmiron and compare the degree of FSD associated with the disease.

Methods: Domain values were obtained by using the FSFI. This 19-item questionnaire evaluated FSD in the following six domains: desire, arousal, lubrication, orgasm, satisfaction, and pain. The respondents were indexed first by the use of anti-depressant medications and the absence of such medication (Control), then further by the use of Elmiron.

Results: Respondents taking anti-depressant medication and Elmiron exhibited an overall FSFI of 12.12 + 6.05 when compared to those taking anti-depressant medication alone 12.01 + 6.44 (NS). Those taking Elmiron alone reported an overall FSFI of 13.32 + 6.47 compared to those denying the use of both anti-depressant medication and Elmiron 13.18 + 6.12 (NS). The Table below further compares these data across the six domains measured by the FSFI.

FSFI Domains	Antidepressants Elmiron N = 223 Mean+S.D.	Antidepressants No Elmiron N = 242 Mean+S.D.	Control P value	Control Elmiron N = 260 Mean+S.D.	No Elmiron N = 575 Mean+S.D.	P Value
Desire	2.19 + 0.99	2.24 + 1.12	NS	2.54 + 1.21	2.39 + 1.16	NS
Arousal	2.68 + 1.61	2.61 + 1.67	NS	2.94 + 1.65	2.89 + 1.65	NS
Lubrication	2.49 + 1.58	2.41 + 1.64	NS	2.72 + 1.93	2.73 + 1.54	NS
Orgasm	2.66 + 1.90	2.58 + 2.03	NS	2.84 + 1.95	2.93 + 1.94	NS
Satisfaction	2.90 + 1.58	2.83 + 1.62	NS	3.00 + 1.62	2.93 + 1.60	NS
Pain	1.86 + 1.41	1.92 + 1.62	NS	2.13 + 1.58	2.22 + 1.62	NS
Overall FSFI	12.12 + 6.05	12.01 + 6.44	NS	13.32 + 6.47	13.18 + 6.12	NS

Conclusions: Elmiron had no effect in the patients taking anti-depressant medication or the control subset of this data. Therefore, Elmiron is ineffective in reducing the degree of FSD in patients suffering from PBS, regardless of anti-depressant therapy use.

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Transurethral Needle Ablation of the Prostate for Men with Chronic Urinary Retention

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Introduction: While TURP is the gold standard for relief of urinary obstruction due to BPH, it cannot be offered to men who are poor surgical candidates. This is a retrospective review of 26 men with chronic urinary retention who underwent TUNA.

Methods: A retrospective chart review identified 29 patients who had undergone TUNA in our office from January 2004 through December 2006, three of whom were lost to follow-up. All of these patients were in chronic retention pre-operatively. The primary outcome assessed was ability to void spontaneously after TUNA. A secondary outcome was the effect of mean prostate size on a patient's likelihood of voiding spontaneously after TUNA.

Results: Urinary retention was relieved in 17 of 26 patients post operatively (65%). The mean prostate gland size was larger in patients whose retention resolved after TUNA [mean=95.7 grams (SD=54.5)] as compared to patients whose retention did not resolve after TUNA [mean=77.7 grams (SD=64.2)]. This difference was not statistically significant [difference in means=18.0 grams; 95% CI (-37.0, 73.0); p-value=0.50]. Of patients whose prostate measured greater than 100 grams, 83% (5 of 6) were no longer in retention after TUNA, versus 62% (10 of 16) of those whose prostate was less than 100 grams. At a median follow-up of 8.5 months (25th percentile=3.6 months, 75th percentile=24.6 months), all of the patients whose retention resolved after TUNA continued to void spontaneously.

Conclusions: TUNA offers a minimally invasive, safe alternative to TURP for men in retention who are poor surgical canidates.

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Outcomes Analysis of Open versus Robotic Radical Prostatectomy: A Single Surgeon Experience

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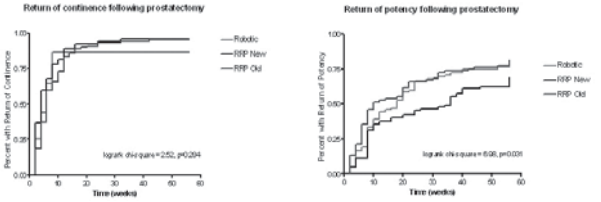
Introduction: The current study presents functional outcomes of robotic prostatectomy compared to a contemporaneous group and historical group undergoing open surgery.

Methods: Three groups undergoing radical prostatectomy were followed for 1 year: A contemporaneous group of consecutive patients undergoing RRP New (131) and RALP (129) as well as a historic group of patients undergoing RRP Old (148). Pre- and postoperative clinical parameters were compared.

Results: There was no difference in all preoperative clinical and postoperative pathological parameters. Although the EBL was lower for the Robotic group, the transfusion rate was the same for all three groups. The return of urinary continence was best for the RRP New group; there was no difference between RRP Old and Robotic. The return of erectile function was best for the Robotic group; there was no difference between RRP Old and Robotic. The complication rates and biochemical failure rates were similar for all groups.

Conclusions: There are more similarities than differences between open and robotic prostatectomy in almost every outcome measure. Since the outcomes are more dependent on the skill of the surgeon rather than an inherent difference in the technique, the choice between the two should be predicated upon patient and physician preference.



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Relative Survival after Surgical Treatment of Localized RCC A S.E.E.R. Analysis: Is Age Important?

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Introduction: Recent data report that age may be a significant independent prognostic variable following treatment for RCC. We analyzed data from the Surveillance Epidemiology and End Results (SEER) database to calculate relative survival of patients surgically treated for localized RCC as related to tumor size and patient age at treatment.

Methods: The SEER database was used to create a cohort of patients treated surgically for localized, node negative RCC from 1988 to 1997. Patients were stratified and analyzed by age and tumor size. Three- and five-year relative survival rates were calculated using SEER-Stat software.

Results: Review of the SEER database identified 8578 patients as having undergone definitive surgery for pathologically localized RCC. Three- and five-year relative survival rates are presented in the table. We did not identify scientifically meaningful trends in 3- and 5-year relative survival across age groups for those with small (<4 cm) or large (>7 cm) tumors. However, a scientifically meaningful trend towards lower relative survival was demonstrated with increasing age in patients with medium size tumors (4-7 cm).

Conclusions: This data suggests that advanced age may be related to worse outcomes in patients with localized RCC tumors between 4 and 7 cm. The cause of this observation warrants further investigation.

Relative Survival (RS) in RCC by Age and Tumor size

	Age 40-49	Age 50-59	Age 60-69	Age 70-79	Age 70-79
< 4 cm (n)	419	654	853	718	718
% 3-year RS	97.4	96.0	96.5	97.8	97.8
% 5-year RS	95.5	94.2	94.2	96.6	96.6
4-7 cm (n)	616	923	1086	985	985
% 3-year RS	97.6	96.0	93.9*†	91.8*††	91.8*††
% 5-year RS	95.5	91.2*††	90.3*††	85.8*††	85.8*††
>7 cm (n)	402	530	524	411	411
% 5-year RS	92.6	88.5	91.0	90	90
% 5-year RS	88.6	83.6†	86.5	83.8	83.8

* $p<0.05$ for comparison with 30-39 group
† $p<0.05$, †† $p<0.01$ for comparison with 40-49 group

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Multimodal Analgesic Therapy with Pre-operative Pregabalin Reduces Opioid Use in Patients Undergoing Robotic Prostatectomy

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Introduction: Minimally invasive surgical techniques have many benefits, including reduced post-operative pain. Despite this, the majority of patients require opioid analgesia, which can have significant side effects and toxicity. We report the first urologic study using multimodal analgesia with pregabalin, a gabapentin derivative.

Methods: This retrospective IRB approved study included 52 patients undergoing robotic assisted laparoscopic radical prostatectomy (RALP). All patients received a standard post-operative analgesic regimen with intravenous ketorolac 15 mg every 6 hours with oxycodone 5 mg/ acetaminophen 325 mg, one to two tablets every 4 hours as needed for pain. Twenty-six patients received additional multimodal treatment with pregabalin 150 mg, acetaminophen 975 mg, and celecoxib 400 mg PO 2 hours prior to the start of the procedure and continued post-operatively.

Results: Patients in the multimodal treatment group had a significantly reduced intra-operative opioid requirement, as measured by mean morphine equivalent dose administered (38.4 mg vs. 49.1 mg, $p < 0.01$). The mean post-operative opioid use was also significantly reduced (10.7 mg vs 26.2 mg, $p=0.034$).
The operative time, estimated operative blood loss, antiemetic use, post-operative creatinine and hemoglobin, and length of stay were similar in both groups. There were no operative or treatment complications in either group.

Conclusions: This retrospective review indicates that a multimodal analgesic approach with pregabalin decreases intra-operative and post-operative opioid use in patients undergoing RALP. A larger prospective study is necessary to fully evaluate the benefits of a multimodal approach, including quality of pain control and opioid related side effects.

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Cryoablation of Renal Fossa Recurrence Following Radical Nephrectomy

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Introduction: Renal fossa recurrence of renal cell carcinoma (RCC) following radical nephrectomy historically requires open surgical resection. The failure rate is high (50%), and the procedure is associated with a high morbidity. Cryoablation of a solitary, local recurrence may provide a minimally invasive alternative to open resection. We describe our experience in treating two patients experiencing fossa recurrence with percutaneous cryoablation.

Methods: We retrospectively reviewed medical records of two patients with renal fossa recurrence of RCC treated with percutaneous cryoablation.

Results: Two patients developed remote local recurrence following radical nephrectomy and underwent percutaneous cryoablation with 17-gauge needles and two freeze-thaw cycles. A 69 y/o male with a history of bilateral nephrectomy for clear cell carcinoma developed a 3.2 cm recurrence 6 years after surgery. He received percutaneous cryoablation with four needles. After nine months, the mass showed continued enhancement, and he underwent a second treatment for biopsy-proven clear cell carcinoma. Surveillance imaging for the past 18 months is free of residual disease. A 52 y/o male received percutaneous cryoablation with three needles for a 2.3 cm mass that recurred 17 months after radical nephrectomy for clear cell carcinoma. One year after cryoablation, he underwent surgical extirpation. He is currently receiving Sutent for metastatic disease. Both patients tolerated percutaneous cryoablation well and were discharged home within 24 hours.

Conclusions: Percutaneous cryoablation provides a minimally invasive intervention with low morbidity. However, the patient requires close follow-up and may require re-treatment.

P35

Racial Differences and Timing of Anastomotic Strictures following Radical Retropubic Prostatectomy

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Introduction: Anastomotic stricture is a potential complication following radical prostatectomy. The incidence within different ethnic groups has not been studied. Endoscopic bladder neck incision or dilation is commonly used as the initial management of anastomotic strictures.

Methods: We retrospectively studied case notes of 718 patients who had radical prostatectomy between 1994 and 2007 by one urological surgeon. The incidence of anastomotic strictures and the time to clinical presentation in white, black and Asian men were recorded. Odd ratios and linear regression analysis were used to investigate potential differences.

Results: Anastomotic strictures were observed in 65 patients (9.05%). The incidence of strictures in black patients was significantly higher ($p=0.04$) than in whites. There was no significant difference in the time to clinical presentation between all three ethnic groups. Whites developed strictures after 6 months, black after 6.83 months and Asians after 5.66 months in the absence of evidence of cancer recurrence (normal PSA). There was no difference in the numbers of endoscopic therapeutic procedures performed in each group (1.70 in whites versus 2 in blacks versus 1.66 in Asians).

Conclusions: Black patients are relatively prone to anastomotic strictures following radical prostatectomy. The mechanism explaining this tendency could be similar to that of cheloid scars commonly observed in that ethnic group.

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Practice Patterns in the Management of Stone Disease

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Introduction: In recent years, the field of endourology has witnessed great progression in endoscopic technology and surgical technique. We performed a study to define the type of procedures performed for stone removal over a 1 year period in two academic, tertiary referral practices focused on the treatment of stone disease.

Methods: A multi-center, retrospective evaluation of all patients undergoing procedures for stone removal over a 1 year period was performed. Procedures were categorized as shock wave lithotripsy (SWL), ureteroscopy, (URS), or percutaneous nephrolithotomy (PNL). All procedures at each institution were performed by a single surgeon with a practice focused on the treatment of stone disease.

Results: From August 2006 to July 2007, a total of 369 procedures were performed for the purpose of stone removal. The procedure distribution was 28 SWL (7.5%), 256 URS (69.3%), 85 PNL (23.0%). Stone-free rates were comparable among the endoscopic interventions (78.5% for URS and 91.7% for PNL) and superior to SWL (42.8%). Complications were comparable among all groups.

Conclusions: In these two tertiary referral practices focused on the treatment of stone disease, there is an increasing reliance on endourologic interventions; indeed, it is the minority of patients in these practices that undergo SWL. These data are hypothesis-generating, and it remains to be seen whether other urologic surgery practices are experiencing, or will experience, a similar paradigm shift towards a greater utilization of endourology and a more restricted utilization of SWL in the treatment of patients suffering from stone disease.

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Angiography and Embolization for Traumatic Renal Injuries

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Introduction: Excellent rates of renal salvage have been reported for nonoperative management of severe traumatic renal injuries. Small series have reported the use of angiography in the evaluation of renal trauma; however no guidelines exist to direct its use. We now report our use of angiography for acute traumatic renal injuries and review the world literature.

Methods: We analyzed the world literature and our urologic trauma database for blunt/penetrating renal injuries evaluated by renal angiography from 1995-2005.

Results: 17 patients underwent angiography for CT findings of traumatic renal laceration associated with vascular extravasation (8), segmental infarct (6), or lack of ipsilateral contrast enhancement (3). 7 patients underwent successful embolization of a main renal artery (3) or segmental branch (4). Literature review revealed 225 instances of renal vascular embolization after iatrogenic (26%) or traumatic (74%) injuries. Technical success was achieved in 86% and only 6% required surgical exploration. Only 55(24%) of these were performed for acute injuries rather than delayed manifestations of renal trauma.

Table1. Patients with renal vascular trauma undergoing angiography

	All patients	Angiography only only	Angiography + renal embolization	*P* value
No. patients(%)	17 (100%)	10 (59%)	7 (41%)	-
Mean age, years	35.1	31.2	41.7	0.22
Mechanism: blunt/ penetrating	14/3	8/2	6/1	1.0
No. hematuria (%)	16 (94%)	9 (90%)	7 (100%)	1.0
No. urine extravasation (%)	1 (6%)	0 (0%)	1 (14%)	0.41
Mean time to angio, minutes	195	199	188	1.0
Transfusion rate (%)	8 (47%)	3 (30%)	5 (71%)	0.15
Post-angio transfusion rate (%)	4 (24%)	2 (20%)	2 (29%)	1.0
Mean discharge creatinine	0.9	1.0	0.8	0.22

Conclusions: Angiography is important in the management of suspected renal vascular injuries. While published series of renal embolization describe excellent outcomes, few published cases involve renal trauma. We have performed angiography safely and effectively for renal lacerations with CT evidence of acute infarct, vascular contrast extravasation, or lack of ipsilateral renal contrast enhancement. Nonoperative management utilizing renal angiography should be considered in hemodynamically stable patients with renal vascular injuries.

P38

Laparoscopic Retroperitoneal Lymph Node Dissection with Therapeutic Intent: Perioperative Outcomes and Early Oncological Results

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Introduction: Laparoscopic retroperitoneal lymph node dissection (L-RPLND) is emerging as an alternative for the management of clinical stage I non-seminomatous germ cell tumors (NSGCT). While initially performed for staging purposes, L-RPLND has evolved into an operation with therapeutic intent aiming to duplicate the open approach. We present early perioperative and oncological outcomes.

Methods: Between December 2006 and April 2008, 11 men with clinical stage I NSGCT underwent L-RPLND using a modified template. A bilateral dissection was performed if frozen section confirmed disease in the retroperitoneum. Perioperative and postoperative records were reviewed.

Results: The mean age in this cohort was 33 years and 9 men had right sided tumors. The proportion of patients harboring a predominant embryonal component, teratoma, or having lymphovascular invasion in the primary tumor was 64%, 55%, and 64% respectively. The mean blood loss, OR time, and length of stay was 125cc, 215 minutes, and 2 days. The mean number of lymph nodes retrieved was 19. Of the 8 men found to have pN0 disease, 1 has recurred in the chest 8 months following surgery. Of the 2 patients with pN1 disease, neither has received chemotherapy and both are free of recurrence at 6months. The 1 patient with pN2 disease received chemotherapy 2 weeks postoperatively and is recurrence free at 10 months. There have been no retroperitoneal recurrences or complications.

Conclusions: L-RPLND with therapeutic intent is safe, and oncologically sound with short follow-up. Longer follow-up and larger cohorts are needed to confirm its oncological durability.

P39

Expert Training with Standardized Operative Technique Helps Establish a Successful Penile Prosthetics Program for Urologic Resident Education

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Introduction: The purpose of this study was to evaluate the impact of yearly training sessions from a recognized expert in the establishment of a successful penile prosthetics program for urologic residency education.

Methods: For the last four years, a recognized expert conducted annual operative training sessions to teach standardized technique for penile prosthetics to resident urologic surgeons. Each session consisted of 3 to 4 operative cases supervised directly by the expert. We retrospectively reviewed all penile prosthetic operations before (1/2000 to 7/2004: N=48) and after (8/2004 to 10/2008: N=59) implementation of these sessions. Outcomes reviewed included patient characteristics, operative time, estimated blood loss, proportion of inflatable vs. malleable implants, operations per year, and explantation/revision rates. Data were analyzed using Student's T or Fisher's exact tests.

Results: Patient age and race did not differ pre- vs. post-training. Operative time decreased from 113.3 ± 5.4 (pre-training) to 99.3 ± 4.8 minutes (post-training) (P=0.05). Estimated blood loss decreased from 95 ± 21.7mL to 58 ± 9.3mL, but did not reach significance (P=0.09). Inflatable implants increased from 27/48 (56.3%- pre-training) to 48/59 (81.4%, post-training) (p<0.0001). Operations per year increased from 10.9 (pre-training) to 18.6 (post-training) (p<0.05). Revision/ explantation occured in 8/48 patients (16.7%, pre-training) vs. 2/59 (3.4%, post-training) (P<.05).

Conclusions: These data demonstrate that yearly sessions with a recognized expert can improve surgical outcomes, type and volume of implants, and can reduce explanation/revision rates. This represents an excellent model for improved training of urologic residents in penile prosthetics surgery.

P40

Congenital Infundibulopelvic Stenosis with Renal Impairment: Surgical Management

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Introduction: Infundibulopelvic stenosis (IPS) is a rare condition affecting development of the renal pelvis and infundibuli that can produce renal deterioration. There is no well-defined surgical management strategy. Based on 3 cases over 10 years, a novel surgical approach is described.

Methods: Three patients (4 renal units) with IPS and renal deterioration have been surgically managed. All presented with azotemia or loss of unilateral function demonstrated by renal scan. The initial patient was managed with medial infundibuloplasties and a uretero-calicostomy. Subsequent patients underwent lateral nephrotomies with multiple calico-calicostomies and medial uretero-calicostomy.

Results: Patient #1 underwent multiple infundibuloplasties and a uretero-calicostomy at age 16 presenting with proteinuria and azotemia following nephrectomy at age 1 for MCDK. Her renal deterioration slowed, but she had incomplete decompression of her upper pole. She has been stable for 10 years. Patient #2 was diagnosed incidentally at 17 years with severe right IPS and minimal left. His split function deteriorated from 43 to 34 percent over 1 year. He had satisfactory decompression and stabilization of renal function with 3 years of follow-up. Patient #3 presented at age 10 with proteinuria, azotemia and hematuria with severe bilateral IPS. She underwent staged bilateral multiple calico-calicostomies and uretero-calicostomy. Her creatinine has decreased and both kidneys show improved drainage.

Conclusions: IPS is a rare condition that may produce renal deterioration. When surgical correction is appropriate, lateral nephrotomies through the thinned renal parenchyma with multiple calico-calicostomies and medial uretero-calicostomy can produce satisfactory renal drainage and is well tolerated.

P41

Circumcision May Improve Premature Ejactulation in the Uncircumcised Male

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Introduction: Premature ejaculation is a condition that affects approximately 30% of adult males. This condition is underdiagnosed and undertreated. It is also underreported due to the sensitive nature of the topic. There are multiple treatment modalities for this problem with different levels of success. Because of the theory that sensation is decreased after circumcision, we studied circumcision and its effect on premature ejaculation.

Methods: A phone survey was conducted with adult uncircumcised males who have undergone recent circumcision. In layman's terms, we asked the patients if circumcision have had any effect in their intravaginal ejaculatory latency time (IELT).

Results: A group of 40 males between the ages of 18 to 60 years, who have recently undergone circumcision at a single institution, were asked if circumcision have had any effect in their IELT. Of the 40 patients, 31 (78%) responded that there has been an increase in their IELT compared to prior to circumcision, 8 (20%) responded that they did not note any difference and one (2%) reported worsened IELT. Of the 9 patients who complained of premature ejaculation prior to circumcision, all 9 (100%) noted improvement in their IELT.

Conclusions: Circumcision in adult males may improve premature ejaculation in uncircumcised males with this condition.

P42

Comparative Analysis of Perioperative Outcomes in Patients Who Have Undergone Both Open and Laparoscopic Renal/Adrenal Surgeries

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Introduction: Patients with hereditary renal and adrenal tumors often present with multiple, metachronous, bilateral masses. We, therefore, perform organ-sparing surgery whenever possible. In recent years we have progressed from open to minimally invasive surgery. As a result, some patients have experienced both open and laparoscopic renal and adrenal surgery, which allows the opportunity to compare the perioperative outcomes of each approach.

Methods: Ten patients underwent both laparoscopic and open renal or adrenal surgery. Perioperative outcomes, including operative time, number of tumors removed, estimated blood loss (EBL), time to advancement of diet, hospital stay, postoperative narcotic use, and surgical complications were compared.

Results: Laparoscopic surgery showed a decreased number of tumors excised (2.38 vs. 4.89), increased operative time (460 vs. 318 mins), decreased EBL (550 vs. 1094 cc), and shorter hospital stay (2.38 vs. 7.78 days $p = 0.01$), but no difference in time to advancement of diet to regular (3.33 vs. 3.13 days). Narcotics use in the postoperative period was significantly lower after laparoscopic surgery (51 vs. 173.5 mg morphine equivalents $p < 0.01$). Three complications were identified in the open group (pleural effusion, rhabdomyolysis, and TIA) and one in the laparoscopic group (ileus).

Conclusions: This patient cohort allows the comparison of open vs. laparoscopic surgery among individual patients. The shorter hospital stay, decreased narcotics use, and lower complication rate suggest that, if possible, laparoscopic renal and adrenal surgery is a good alternative for patients requiring multiple procedures.

P43

Durability Trial of Transurethral Radiofrequency Collagen Denaturation for Treatment of Stress Urinary Incontinence: Efficacy Results at 12 Months

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Introduction and Objective: Nonsurgical, transurethral collagen denaturation, a safe one-time treatment for stress urinary incontinence (SUI) due to bladder outlet hypermobility, is performed in an office setting in ≈30 minutes. This trial evaluates long-term effectiveness.

Methods: An ongoing 3-year prospective study has evaluated patients at baseline, 3, 6, and 12 months. Study includes women with SUI for ≥12 months who failed prior conservative treatment. Women with urge/mixed incontinence or prior definitive treatment (surgery, bulking agents) were excluded. Women received a local periurethral lidocaine injection and procedure was performed (see Appell et al, Neurourol Urodyn 2006;25:331-335). Patients completed Incontinence Quality of Life (I-QOL), Patient Global Impression of Improvement (PGI-I), and Urogenital Distress Inventory (UDI-6) instruments, recorded daily SUI episodes, and underwent a 1-hour stress pad weight test. Twelve-month results are reported.

Results Obtained: Study enrolled 139 women (mean age, 47y; range 26-87y); 136 received treatment. Mean baseline number of leaks was 3.8/day; mean I-QOL and UDI-6 scores were 51.3 and 52.3. At 6 months, 119 patients were evaluated; 63.1% had ≥50% leak reduction. Mean I-QOL and UDI-6 improvements were 16.4 and 17.3 points (both $P<.0001$). At 12 months, 73 patients were evaluated; 69% reported ≥50% reduction in leaked volume (median reduction, 15.2g) on pad test ($P<.0001$). Pad test revealed that 45% of women were dry (29%, no leaks;16%, <1g leakage). Mean change in I-QOL from baseline was 19.6 points ($P=.0001$); 74% had improved UDI-6 scores (mean improvement, 17.6 points; $P=.0001$).

Conclusions: Nonsurgical collagen denaturation showed measurable durable improvement at 12 months.

P44

Double-Blind, Randomized, Parallel-Group Study to Define Electrocardiographic Effects of Silodosin, a Uroselective-Adrenergic Antagonist

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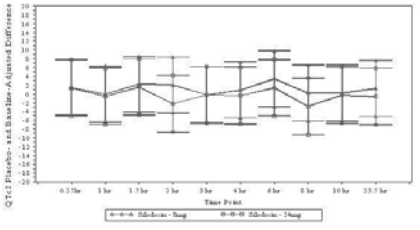
Introduction: This double-blind, randomized, parallel-group study compared the QTc effects of therapeutic and supratherapeutic doses of silodosin versus those of placebo and a positive control (moxifloxacin).

Methods: Healthy men (N = 186; 18-45 y) were randomized to receive silodosin (8 or 24 mg) or placebo for 5 days, or moxifloxacin (400 mg) once on day 5. ECGs were obtained with a Mortara Instrument H12 Plus continuous 12-lead ECG digital recorder. Five ECGs were extracted within a 1-3 min window at baseline (day -1) and on day 5 at -0.25, 1, 1.5, 2, 3, 4, 6, 8, 10, and 23.5 hr from dosing. Time-matched and time-averaged ECG parameters were analyzed with ANCOVA. (Central ECG laboratory blinded to treatment.)

Results: Time-matched analysis for placebo-corrected change from baseline in QTcI at day 5 revealed no upper limits >10 ms (noninferiority bound). (Figure) Placebo-corrected QTcI mean changes from baseline for clinical and supratherapeutic doses of silodosin were -1.7 and 1.4 ms, respectively; placebo was -0.8 ms and moxifloxacin 4.0 ms. Outlier analysis, morphologic review, and pharmacokinetic-pharmacodynamic modeling showed no meaningful effects. No statistically significant correlation was observed for maximum plasma concentration and QTcI change for silodosin or metabolites.

Conclusions: In this thorough ECG study, silodosin had no meaningful effects on heart rate, PR and QRS interval duration, or cardiac repolarization.



P45

Pharmacodynamic Interaction of the Highly Uroselective-Blocker Silodosin with the Phosphodiesterase-5 (PDE-5) Inhibitors Sildenafil and Tadalafil

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Introduction: This placebo-controlled, open-label, crossover study was conducted to evaluate the safety and orthostatic effects of coadministration of silodosin and PDE-5 inhibitors.

Methods: Twenty-two 45- to78-year-old healthy men received 8 mg silodosin for 21 days; on days 7, 14, and 21, subjects received in random sequence a single dose of 100 mg sildenafil, 20 mg tadalafil, or placebo. Supine (baseline) and standing orthostatic measurements were performed 0 hr (predose) to 12 hr after single-dose treatment. A positive orthostatic test was defined as a decrease in systolic (or diastolic) blood pressure by >30 (or >20) mm Hg, increased heart rate (>20 bpm), or orthostatic symptoms on change of position.

Results: Mean changes from baseline in 1 min-standing orthostatic tests were similar for all treatment groups (Table). The cumulative number of positive orthostatic tests was similar for all treatments in 16 subjects <65 years (sildenafil, 52; tadalafil, 55; placebo, 49) and in 6 subjects ≥65 years (sildenafil, 12; tadalafil, 11; placebo, 9). No treatment-related adverse events of symptomatic orthostasis or dizziness were reported. No serious adverse events occurred during the study.

Conclusions: Concomitant use of silodosin and maximum doses of sildenafil or tadalafil in healthy men caused no clinically important changes in blood pressure, heart rate, or orthostatic symptoms.

Mean Changes From Baseline (CFB) in 1 Min-Standing BP/HR After Administration of PDE-5 Inhibitors

	Systolic BP, CFB (mm Hg), N = 22			Diastolic BP CFB, (mm Hg), N = 22			Heart rate CFB (bpm), N = 22		
Time Postdose	Sil (100mg sildenafil	Tad (20 mg tadalafil)	Pbo (placebo)	Sil (100mg sildenafil)	Tad (20 mg tadalafil)	Pbo (placebo)	Sil (100mg sildenafil	Tad (20mg tadalafil)	Pbo (placebo)
Predose	-2.8	-3.0	-5.8	0.0	0.7	0.4	13.0	11.2	12.1
1 hr	-1.7	-1.7	-5.0	-0.6	0.1	-0.3	14.8	13.7	12.7
2 hr	-2.0	-5.0	-7.2	0.5	-1.9	-2.6	13.8	13.0	11.9
3 hr	-4.1	-3.6	-4.0	2.3	-1.3	1.7	14.0	14.2	12.7
4 hr	-4.8	-10.2	-5.6	-1.6	-5.2	0.0	15.6	12.7	13.9
6 hr	-5.0	-9.9	-10.7	0.6	-3.8	-2.5	8.7	9.0	11.9
8 hr	-4.1	-3.7	-0.7	1.2	1.4	3.0	15.4	13.4	11.5
12 hr	-1.6	-1.7	-1.3	1.1	-0.5	0.9	12.0	12.3	12.1

P46

Robotic Assisted Radical Prostatectomy For Locally Advanced Prostate Cancer: The Incidence and Clinical Features of Positive Surgical Margins

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Introduction: Although robotic assisted radical prostatectomy (RAP) has gain great popularity, its therapeutic role in locally advanced prostate cancer is less clear. We evaluated the incidence and clinical features of positive surgical margins in this cohort.

Methods: Between August 2003 and October 2007, 456 patients with clinically localized prostate cancer underwent a RAP, of which 55 patients had pathologically confirmed locally advanced prostate cancer (stage T3 or T4). The clinical features of these patients were subsequently evaluated in the context of the RAP learning curve.

Results: The mean age of men was 60 ± 7 years with mean PSA level of 6.3 ± 1.9 ng/ml. 30 patients (55%) had a palpable nodule on DRE. The median Gleason score was 3+4 with 11 men (20%) having Gleason grade 5. The overall margin positive rate was 60%, of which 23 and 10 patients having uni-focal and multi-focal positive margins, respectively. When further stratified by RAP experience, the margin positive rate was 67% (24/36 men) in the first 200 cases, and 47% (9/19 men) in the latter cases. The most common site of positive surgical margins was the posterior-lateral surface (67%), followed by the apex (52 %). Seven patients had elevated PSA (above 0.2 ng/ml) at 3 months follow-up.

Conclusions: In our series, up to 2 out of 3 men with locally advanced prostate cancer had positive surgical margins. More studies are needed before RAP is routinely offered to patients with high risk prostate cancer such as high Gleason score and abnormal DRE.

P47

Is there Correlation of Nerve Sparing Status and Return to Baseline Urinary Function after Robotic Assisted Laparoscopic Radical Prostatectomy?

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Introduction: Incontinence is a vital quality of life (QoL) concern for men undergoing radical prostatectomy. Using validated QoL instruments we sought to determine if urinary function was affected by nerve sparing status at prostatectomy and how this correlated with modalities of prostate cancer surgery practiced at our institution: retropubic (RRP), laparoscopic (LRP) or robotic-assisted (RALRP).

Methods: Percent of baseline urinary function score (PBUF) was calculated by dividing follow-up urinary function score by baseline urinary function score. Patients with scores <30 at baseline (n=10) were excluded. PBUF was compared across categories of nerve-sparing surgery at 3, 6, 12, 18, 24, 30, and 36 months. Survival analysis was conducted classifying a follow-up achievement of 75% of baseline score as a successful outcome.

Results: Overall 628 patients were available for analysis. Table 1 demonstrates significance of nerve sparing status across groups (BNS, UNS and NNS) only at 3 months post-operatively. Univariate analysis demonstrated a significant trend of returning to 75% of baseline urinary function in the BNS group. Multivariate analysis showed no correlation between nerve sparing, type of surgery and PBUF.

Conclusion: Percent return of baseline urinary function is not significantly affected by nerve-sparing after radical prostatectomy. Age greater than 64 inversely correlates with return to baseline urinary function. RALRP demonstrates non-statistically significant trends of returning to baseline urinary function when compared to other modalities.

Table 1:

Univariate	**HR (95% confidence interval)**
Type of Nerve-sparing Surgery	
Non-nerve sparing	REF
Unilateral	0.89 (0.68, 1.16)
Bilateral	1.21 (1.01, 1.46)*
Age Category	
<55	REF
55-64	0.82 (0.67, 0.99)*
64+	0.68 (0.53, 0.87)*
Race	
White	REF
Black	0.86 (0.71, 1.06)
Other	1.55 (0.74, 3.05)
Clinical Stage	
≤ T1c	REF
T2a	1.02 (0.81, 1.28)
T2b+	1.06 (0.76, 1.48)
Gleason Score	
≤7	REF
8+	0.72 (0.51, 1.01)
Type of Surgery	
DaVinci Laparoscopic	REF
Laparoscopic	0.86 (0.70, 1.06)
Open	0.74 (0.59, 0.92)*
Baseline Sexual Function	
≤75	REF
76+	1.05 (0.88, 1.24)
Multivariate	
Type of Nerve-sparing Surgery	
Non-nerve sparing	REF
Unilateral	0.82 (0.62, 1.08)
Bilateral	1.06 (0.87, 1.30)
Age Category	
<55	REF
55-64	0.83 (0.68, 1.01)
64+	0.69 (0.54, 0.90)*
Type of Surgery	
DaVinci Laparoscopic	REF
Laparoscopic	0.78 (0.62, 0.98)*
Open	0.87 (0.71, 1.07)

*p<0.05

1

Il18 Binding Protein is Produced by Prostate Cancer Cells and its Levels in Urine and Serum Correlate with Tumor Status

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Introduction: Cytokines may play a role in the initiation and progression of prostate cancer. We applied a cytokine antibody array to prostatic fluids, and found interleukin 18 binding protein (IL18Bp), which is secreted in mononuclear cells and is a potent inhibitor of interleukin 18, to be significantly upregulated in cases with large volume disease. We sought to further characterize the association of IL18Bp with prostate cancer and determine its presence in patient serum and urine samples.

Methods: Prostatic fluids from 40 fresh radical prostatectomy specimens were analyzed by human cytokine antibody array. IL18Bp expression was also examined in cell lines, and assessed by ELISA in post-DRE urine and serum samples. IL18Bp expression in the prostate tissues was immunohistochemically examined.

Results: IL18Bp was significantly elevated in prostatic fluid from patients with large vs. small volume prostate cancer in their radical prostatectomy specimens by ELISA (p=0.0158). IL18Bp was expressed and secreted from DU 145 and PC-3, but not from LNCaP and CWR-22, by interferon-É¡ stimulation cooperatively with TNF-Éø, interferon-Éø and interferon É¿. Immunohistochemical staining showed the positive staining of IL18Bp in prostate cancer cells in the radical prostatectomy specimens. Significant differences in post-DRE urinary IL18Bp levels (normalized by total protein) were found between cases with and without cancer on biopsy (p=0.0181). IL18Bp levels in serum correlated with Gleason score (p=0.0289).

Conclusions: Our finding of elevated IL18Bp secretion from prostate cancer cells suggests an attempt by cancer to escape immune surveillance. IL18Bp may be interesting to study further as a marker of aggressive prostate cancer.

2

Defects in Muscarinic Receptor Cell Signaling in a Bladder Urothelial Cancer Cell Line

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Introduction: Bladder urothelial cells (BUC) have been shown to be involved in bladder signaling. BUC can release and respond to various putative neurotransmitters. Based on data from keratinocytes, another epithelial cell type, non-neuronal acetylcholine is critical to keratinocyte growth and differentiation. This study explores the muscarinic receptor signaling in a bladder cancer cell line J82.

Methods: J82 cells were purchased from ATCC and normal human BUC were cultured from cystoscopic biopsies. Using PCR, cells were analyzed for the presence of m1-m5 transcripts. Cells were stimulated with carbachol (100 µM), a cholinergic agonist. Changes in intracellular calcium [Ca2+]i levels were measured using fura-2 ratiometric microfluorimetry. m3 plasmid transfection of J82 cells was performed.

Results: J82 cells expressed neither m2 nor m3 transcripts whereas normal BUC expressed both. Consistently, all J82 cells failed to respond to carbachol (0/64 cells). 47% of normal BUC (8/17 cells) responded to carbachol. m3-transfected cells had a positive m3 band on PCR. m3-transfected J82 cells responded to carbachol, but at a rate of 8% (17/212 cells).

Conclusions: This is the first description of muscarinic signaling in bladder cancer cells. Cancer cells expressed neither m2 nor m3 transcripts. Normal BUC expressed both these transcripts. J82 cells had no response to carbachol as measured by changes in [Ca2+]i whereas a large proportion of normal BUC responded. We could partially reverse the defect in J82 muscarinic signaling phenotype by transfecting these cancer cells with the m3 plasmid. Muscarinic signaling on urothelial cell growth and differentiation is unknown and will be explored further.

3

Prostate Cancer Treated with Cryoablation Therapy: A Three Year Review of Results

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Introduction: Since the early 1990's, cryosurgery has been used for the management of localized prostate cancer with reasonable cancer control rates. Current cryoablative technology involves third-generation instruments that have reduced morbidity. We performed a retrospective study of patients treated with prostate cryosurgery at a single institution using the Cryocare CS device to determine biochemical disease-free recurrence rates with short-term follow-up.

Methods: From 2003 to 2007, we retrospectively analyzed the data from 156 patients treated by cyroablation for the primary treatment of T1 to T3 prostate cancer. Our focus was on determining overall biochemical disease-free recurrence survival and how it might be affected with pre-treatment hormone therapy.

Results: The median follow-up for our study was 20 months, with 88% of patients nadiring < 0.5. Using a nadir plus 2 ng/dL definition, Kaplan-Meier analysis demonstrated a biochemical disease-free survival rate of 93% and 81% for 1 year and 3 year groups respectively. When comparing the survival difference with neo-adjuvant hormone therapy versus no hormone therapy, the rate was 90.5% and 95.2% at 1 year, and 87.2% and 77.8% at 3 years respectively, which was not statistically significant. The majority of complications were minor with a rate of 13%.

Conclusions: Our results are comparable to other series with regard to short-term cancer control. Neo-adjuvant hormone therapy was not statistically significant with overall survival. The complication rate was low using third-generation cryoablative technology. This further justifies the use of cryosurgery for the management of localized prostate cancer.

4

Abstract not available

5

Immunotherapy of Superficial Bladder Carcinoma with Intravesical Chitosan/il-12 is Superior to BCG Treatment in a Mouse Bladder Cancer Model

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Introduction: The failure to complete intravesical BCG treatment for bladder cancer is likely due to its side effects. IL-12, an inflammatory cytokine produced in high levels in bladders of BCG treated patients, complexed to a viscous chitosan solution may offer similar effectiveness with decreased adverse effects.

Methods: Mice bearing luciferase transfected non-immunogenic orthotopic bladder tumors (MB49.Luc) were treated intravesically with PBS, IL-12 alone, chitosan alone, or chitosan/IL-12 after tumor instillation and monitored for luciferase activity. Chitosan/IL-12 was also compared to BCG in mice bearing orthotopic MB49.Luc bladder tumors.

Results: At day 40, three of 5 mice treated with IL-12 alone were tumor-free, while 100% of mice treated with chitosan/IL-12 were tumor free. All control mice died within 35 days. Serum assays of mice treated with intravesical chitosan/IL12 also demonstrated higher serum levels of IL-12 and IFN-É¡ 24 hours after administration, compared to IL-12 alone, implying that chitosan facilitated greater local delivery of IL-12. Furthermore, all eight of the tumor-free mice rejected tumor rechallenge. Histological analysis of bladders from chitosan/IL-12 treated mice revealed no gross pathology.The median survival of mice treated with BCG was no different than that of control mice. However, chitosan/IL-12 treatment completely eradicated tumors in 55% of mice suggesting that chitosan/IL-12 is superior to BCG in the treatment of orthotopic MB49 tumors. Moreover, none of the chitosan/IL-12 mice showed any overt symptoms of toxicity when treated with chitosan/IL-12.

Conclusions: This suggests that chitosan/IL-12 may be a safe, translatable and durable immunotherapy for the treatment of superficial bladder cancer.

6

Racial Differences of Estimated Tumor Volume and the Effect on PSA-free survival among European Americans and African-Americans

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Introduction: Larger estimated tumor volume (TV) in radical prostatectomy (RP) specimens has been suggested as a risk factor predicting shorter PSA-Free survival (PSAFS). Recent work has suggested African-American (AA) men exhibit larger TV than European American (EA) men. We examined a prospectively maintained RP database from 1991 to 2005 to determine if differences in TV between races would account for racial disparities in PSAFS.

Methods: There were 2,163 patient evaluated. 1,877 patients were classified as EA and 286 patients as AA. A TV cutoff of >10% was used. Chi-square, univariate and multivariate regression analysis were utilized.

Results: 39% of EA and 49% of AA had TV>10% (p=0.004). The percentage of patients with TV >10% increase with increasing BMI. The percentages were 35%, 41% and 45% in underweight/normal, overweight and obese patients respectively (p=0.005). Mean follow-up was 49.38 months. TV remained a risk factor when controlling for age, psa, Gleason score, prostate volume, race, and BMI (HR=2.18 95%CI 1.63-2.90, p<0.001). TV was a significant risk factor in the subset of EA, but not in AA (HR=2.13, 95%CI 1.55-2.92 p<0.001 and HR=2.16, 95%CI 0.99-4.72 p=0.054 respectively).

Conclusions: Larger TVs were seen in AA men. TV >10% had a negative impact on PSAFS when controlling for race and BMI. When EA men were analyses independently this effect remained, but only neared significance in AA men. The impact of tumor volume should be considered in future studies comparing AA to EA patients.

7

Competing Causes of Death in Patients with Kidney Cancer

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Introduction: Incidental detection of small renal masses (SRM) has led to an increased incidence of Renal Cell Carcinoma (RCC). Development of metastases is uncommon in trials of active surveillance for SRMs. Although stage migration has been well documented, there has not been a significant improvement in cancer-specific or overall survival for patients with RCC.

Methods: Mortality and survival rates in the United States were determined from 2003 National Vital Statistics Reports. Patients were stratified into 5 age categories. Mortality was classified as RCC, non-RCC cancers, and non-cancer causes. Additionally Survival, Epidemiology, and End Results (SEER) database was queried for observed, expected, and relative 5-year survival in patients with localized RCC.

Results: 5-year mortality data for 2,448,288 deaths were analyzed. Nearly 25% of the US population >75 and 55% >85 will die of other causes within 5 years. In people >75 years old, the risk of death from RCC represents a very small percentage of mortality. Also, patients treated surgically for localized kidney cancer have a 5-year relative survival ≥90% across all ages compared to 48% or less in patients treated without surgery.

Conclusions: Mortality from RCC represents a small fraction of all causes of death. Five-year mortality from competing causes increases with age. Also, patients treated surgically for localized kidney cancer have significantly better relative survival compared to patients treated without surgery across all ages. Active surveillance of SRMs may be appropriate for selected elderly and co-morbid patients when their risk of mortality from competing causes supercedes their likelihood of death from RCC.

8

Tumor Volume is a Predictor of Biochemical Recurrence in Patients with Positive Surgical Margins Following Radical Retropubic Prostatectomy: A Case for Immediate Adjuvant Therapy?

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Introduction: Patients with positive surgical margins at radical prostatectomy represent a heterogeneous group with a wide range of post-prostectomy outcomes. We aimed to determine the relationship between tumor volume and the risk of biochemical failure in patients with positive surgical margins at radical prostatectomy.

Methods: We reviewed our database of 2407 patients who underwent radical prostatectomy and isolated 474 total patients (19.7%) with positive surgical margins, 103 of which (4.3%) were found to have pT2 disease, the remainder of which found to have pT3 disease. Kaplan-Meier, log-rank, and multivariate logistic regression analyses were undertaken to assess the relationship between tumor volume and survival.

Results: Increasing tumor volume, when stratified by quartiles, was directly associated with increasing risk of biochemical failure in those patients with positive surgical margins (p=0.005). The risk of biochemical recurrence at 5- and 10-years was directly related to increasing tumor volume, as presented in Table 1. tumor volume, when incorporated into a multivariable model, strongly trended toward significance in the prediction of biochemical failure (HR=1.41, 95%CI 0.96, 2.06, p=0.076).

Conclusions: Tumor volume at radical prostatectomy is a predictor of biochemical failure in patients with positive surgical margins. Coupled with other pre- and postoperative parameters, tumor volume may serve to further discriminate those who serve to benefit from immediate adjuvant therapy.

Recurrence-Free Survival Stratified by Estimated Tumor Volum e

	5 Year Survival	10 Year Survival
Overall	63.6%	51.4%
<2% Tumor Volume	83.1%	83.1%
2-10% Tumor Volume	70.4%	51.4%
11-25% Tumor Volume	67.4%	62.3%
≥26% Tumor Volume	48.7%	41.1%

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Prostate Volume Changes Over Time: Results from the Baltimore Longitudinal Study of Aging

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Introduction: According to a 1944 publication by Swyer, after age 45 some men develop BPH with further prostatic growth; whereas, in other men prostate size remains stable or decreases with advancing age (J Anat 1944; 78: 130). Although there is an abundance of literature describing prostatic enlargement in association with BPH, less is known about the phenomenon of prostate shrinkage.

Methods: In the Baltimore Longitudinal Study of Aging, serial pelvic MRI's were performed in men without prostate cancer beginning in 1993. From this population, we retrospectively identified 242 men with ≥2 MRI-determined prostate volume measurements, in order to examine differential growth rates in a cohort of community men over time.

Results: The median age was 55 years, and the median prostate size was 27 cc at study entry. At a median follow-up of 4.2 years, prostate size increased in 61%, and remained stable or decreased in 39%. The median rate of volume change was 0.58 cc/year (range, -9.9 to 11.8), corresponding to a median growth rate of 2.2% per year (range, -29.2 to 108.5%). Over follow-up, 63% of men with an initial prostate size <40 cc had prostate growth, compared to only 51% of men with an initial size ≥40 cc.

Conclusions: These results suggest that changes in prostate size are highly variable among aging men. Although BPH is common, a considerable proportion of aging men have prostate atrophy. Further research is needed to identify the underlying mechanism for such vast differences in prostate growth.

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Urodynamic Changes following AdVance Male Sling Insertion

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Introduction: The AdVance male sling is a treatment option for post-prostatectomy incontinence (PPI), with the goal of eliminating urinary incontinence without affecting voiding parameters. A concern of any procedure in treating men with PPI is whether the treatment induces obstruction and causes retention. We present the urodynamic changes and early results associated with the AdVance male sling.

Methods: Data was prospectively collected from 15 consecutive patients undergoing AdVance male sling for PPI. Urodynamics were performed at baseline and repeated at 6 months postoperatively, analyzing valsalva leak point pressure (VLPP), detrusor voiding pressure, post void residual (PVR), maximum and average flow rates. A 24-hour pad test was completed preoperatively and at 6 months.

Results: Median age at the time of the procedure was 63.8 years (44.6-74.7). 2 of the patients did not have urodynamics available and were subsequently excluded from analysis. The mean preoperative and 6-month patient-reported pad usage was 4.52 and 1.04 respectively (2 tailed t test, p=0.0009). The 24-hour pad test performed preoperatively and at 6 months yielded pad weights of 779.3 and 67.6 (p=0.03). The VLPP improved significantly (p=0.032) while the detrusor voiding pressure, PVR, maximum and average flow rates remained relatively unchanged.

Conclusions: These results are encouraging, as this series demonstrates a significant improvement in patient reported pad usage, 24-hour pad tests, and VLPP without signs of obstruction. The improvement in incontinence is accompanied without any changes in the other voiding parameters. Ongoing studies with longer follow-up are pending to compare with these promising early results.

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Abstract not available

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Ultrasound-guided Renal Cryoablation: Outcomes for Open, Laparoscopic, and Percutaneous Approaches

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Introduction: Ultrasound imaging supports the minimally invasive approach to renal cryoablation with few comparative studies available for determining the optimal approach.

Methods: We examined data from a consecutive series of 231 patients treated between 1996 and 2007. Thirty-three, 158, and 40 patients underwent open (ORC), laparoscopic (LRC), and percutaneous renal cryoablation (PRC), respectively.

Results: With a median follow-up of 62 months there were no treatment failures in the ORC group. Average length of stay (LOS) was 3.18 days. Only 1 (3%) required transfusion.
A total of 158 LRC's in 148 patients, with a median follow-up of 13.3 months and 1.55 days LOS demonstrated a 6.8% retreatment rate. Six patients (3.8%) developed perioperative bleeding; 3 (1%) required transfusion. Other postoperative events were pneumothorax and colonic injury each in 1 patient (0.6%).
Median follow-up for PRC was 19.65 months. Average LOS was 23 hours. One patient (2.5%) developed a delayed splenic hemorrhage requiring intervention. One patient (2.5%) with a solitary kidney developed anuria requiring stenting. 3/40 (7.5%) required a repeat procedure.
Cancer-specific survival rates were 100% in the ORC group, 98% in the LRC group, and 97.5% in the PRC group. Overall survival rates were 90.9%, 94.5%, and 95%, respectively.

Conclusions: Ultrasound guided renal cryoablation may be performed with an open, laparoscopic or percutaneous approach with a low risk of transfusion or renal injury. The more minimally invasive procedures are associated with a risk of disease persistence.

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Ureteral Frozen Section at the Time of Radical Cystectomy: Is it Always Necessary?

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Introduction: Ureteral margins are commonly sent for frozen section during cystectomy, but the clinical utility remain controversial. We reviewed our experience with intraoperative frozen section analysis of distal ureters in radical cystectomy series.

Methods: Clinicopathological data was collected into a multidisciplinary database for 257 consecutive patients who underwent radical cystectomy for clinically localized bladder cancer from January 2000. All had ureteral margins sent for frozen section analysis (per section). Frozen section results were compared with final pathological findings and clinical outcomes.

Results: A total of 514 ureteral units were examined intraoperatively, and 32 (6.2%) had positive frozen sections, ranging from atypia to urothelial carcinoma. Of these, 15 had positive margins on permanent section, for a positive predictive value of 46.9%. On multivariate analysis, both high local T stage (T3 or T4) and the presence of diffuse CIS were the independent predictors of positive frozen section examination. Of the patients with abnormal frozen section findings, there was one case of upper tract recurrence at a mean follow-up of 38 months (range 4 to 74 months). The total cost savings for limiting frozen section on select basis in this cohort would've been , 600.

Conclusion: Routine use of intraoperative frozen section analysis of the distal ureteral margins during radical cystectomy appears to be of questionable value for an organ confined disease. By limiting ureteral frozen sections to select cases such as the presence of diffuse CIS and high local cancer stage, the potential cost savings could be significant.

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The Benefit and Tolerability of Adjuvant Chemotherapy for Advanced Bladder Cancer

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Introduction: Surgery by radical cystectomy (RC) with lymph node (LN) dissection is standard therapy for muscle invasive bladder cancer (BC). Neoadjuvant chemotherapy followed by surgery improves survival over surgery alone. We aimed to examine the impact and tolerability of adjuvant chemotherapy (AC), whose benefit has been assumed but poorly defined.

Methods: We retrospectively reviewed records of 150 consecutive patients who underwent RC at our institution for invasive BC. We examined clinical parameters, pathologic findings, use of chemotherapy, and patient outcomes.

Results: Surgical results revealed significant clinical understaging: 63% of patients were upstaged; 83 patients (55%) were pathologically >T2 and 39 patients (26%) had positive LN metastases. Pathologic tumor stage, LN stage, total positive LN number and LN density were significantly correlated with outcome. Median follow-up was 13.6 months. AC was recommended to 58 patients, of whom 17 (29%) declined. 41 patients proceeded with AC, of which 27 (66%) completed the course. AC related mortality was 2% (1/41). In total, only 47% (27/58) of high-risk patients recommended for AC received full treatment; completion of AC appears to improve overall survival. (Figure)

Conclusions: AC shows a survival benefit for advanced BC, although most patients do not receive the full treatment. BC patients who do not complete AC have worse outcomes. Consideration should be made for neoadjuvant chemotherapy given the rate of pathologic upstaging and moderate AC completion rate.

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Trospium Chloride Once-Daily Extended Release (XR) is Effective and Well Tolerated in Elderly Patients (aged ≥75 years) with Overactive Bladder (OAB)

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Introduction: Specific properties of trospium chloride once-daily 60mg XR, including low propensity to cross the blood-brain barrier, minimal cytochrome P450 metabolism, and low adverse event (AE) incidence, may be beneficial in elderly patients.

Materials and Methods: Pooled data were analyzed for patients >75 years from two randomized, double-blind studies of OAB patients receiving trospium XR 60mg or placebo once daily for 12 weeks.

Results: Of 1165 patients randomized, 143 were >75 years (85 trospium XR, 58 placebo; mean 79 years [maximum 90 years], ~75% female). At week 12, trospium XR produced greater improvements from baseline than placebo in voiding diary parameters (Table 1), OAB Patient Global Assessment, and QOL. Incidence of dry mouth (10.6% vs. 10.8%) and constipation (10.6% vs. 8.1%) was similar for patients >75 and <75 years, respectively. Among placebo treated patients >75 years, prevalence of dry mouth and constipation was 3.4% and 0%, respectively. CNS-related AEs were not observed with trospium XR. All other AE incidence rates were similar between patients >75 and <75 years. Efficacy and tolerability persisted among patients receiving open-label trospium XR out to 1 year.

Table 1. Changes in selected efficacy parameters from baseline to 12 weeks in patients treated with trospium XR or placebo

Parameter	Trospium XR	Placebo	p-value
Average daily toilet voids (mean)	-2.15	-0.37	<0.001
Average daily urge urinary incontinence (UUI) episodes (mean)	-1.77	-0.54	<0.01
Percent change in weekly UUI episodes (median)	-69.9	-25.0	<0.05
Average daily urge frequency (mean)	-2.53	-0.61	<0.01
Average urgency severity associated with toilet voids (mean)	-0.28	-0.20	0.3
Daily volume/toilet void (mL; mean)	+30.73	+3.10	<0.01

Conclusions: In the elderly, who experience OAB with high prevalence, trospium XR was effective and well tolerated. Trospium XR's unique chemical and metabolic properties may contribute to improved tolerability when compared to other OAB medications (specifically considering the lack of CNS effects).

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Characterization of Urinary Incontinence in Patients with Normal Pressure Hydrocephalus (NPH)

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Introduction: NPH is a chronic neurologic condition affecting geriatric patients. It is characterized by cognitive impairment, gait disturbances, and incontinence. Currently, it is not possible to predict improvement in lower urinary tract symptoms (LUTS) after ventriculo-peritoneal (VP) shunting. The purpose of this investigation was to characterize the type, severity, and quality-of-life impact of urinary incontinence in patients with NPH.

Methods: Patients with NPH evaluated in a specialized neurosurgery clinic were administered validated surveys to assess for incontinence (ICIq-UI short form: scored 0-21), overactive bladder (ICIq-OAB, 4 questions, each scored 0-4) quality-of-life impact from lower urinary tract symptoms (ICIq-LUTSqol, scored 0-10), and the AUA symptom index bother score (scored 0-6). Data are presented a means ± SEM.

Results: Seventy-two patients with NPH completed all 4 surveys of which 35/72 (48.6%) were unshunted and 37/72 (51.4%) had been treated with VP shunts. ICIq-UI short form score was 9.42 ± 2.32. ICIq-OAB daytime frequency score was 0.82 ± 1.04, nighttime frequency score was 1.75 ± 1.13, urinary urgency score was 1.74 ± 1.08, and urinary incontinence score was 1.57 ± 1.02. Quality-of-life related to LUTS (ICIq-LUTSqol score) was 3.7 ± 1.73 and AUA-SI bother score was 3.39 ± 1.02.

Conclusions: This is the first study to establish the type, severity, and quality-of-life impact of LUTS related to NPH using validate survey instruments. With further research, it may be possible to identify factors that predict favorable responses to VP shunting.

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Clinical Outcomes of Polypropylene Vaginal Mesh Repair for Pelvic Organ Prolapse

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Introduction: To assess the anatomic and functional outcomes and morbidity of polypropylene vaginal mesh repair using the Prolift (Gynecare) system.

Methods: Forty-four patients had transvaginal pelvic organ prolapse repair by a single surgeon using the Prolift system between 5/2005 and 2/2008. Outcomes and complications were evaluated using the POP-Q and subjective assessment through retrospective chart review.

Results: Forty-four patients underwent pelvic organ prolapse repair with the Prolift polypropylene mesh system between May 2005 and February 2008. The mean age was 63.8 years (range 40-84) at the time of repair. Mean follow-up was 22 weeks (range 1-77). Patients presented with Stage 2, 3, and 4 prolapse using POP-Q staging, 38.6%, 54.5% and 6.8% of the time, respectively. Hysterectomy was not performed as part of the repair irrespective of the degree of uterovaginal descent. All patients had restoration of pelvic support to stage 0 or 1 in all compartments post-operatively and at subsequent follow-up. To date, there have been no recurrences beyond stage 2. Eighty-six percent of patients were discharged from the hospital within 23 hours. Mesh exposure through the vaginal epithelium occurred in 3 of 44 patients (6.8%) patients while dyspareunia occurred in 1 (2.3%).

Conclusions: Polypropylene mesh offers a durable method of repair for pelvic organ prolapse as assessed in the near term. The procedure is minimally invasive with acceptable functional and anatomic outcomes.

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Abstract not available

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Surgical Complications Following Robotic Prostatectomy: Lessons Learned During the Initial 500 Cases

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Introduction: We determined the incidence of surgical complications resulting from robotic prostatectomy (RAP) during the initiation phase of a new robotics program.

Methods: The first 500 patients undergoing RAP performed by two surgeons (HAF, JDE) without formal laparoscopic or robotic surgical training were reviewed for evidence of a complication during or after the surgery. The Clavien classification system, a standardized and validated scale for complication reporting, was applied to all complications. The complication rate was determined per 100 patients treated, and statistical significance was determined with the chi-square test.

Results: A total of 59 patients (11.9%) experienced a total of 82 complications. Fifty patients experienced a single complication and 9 patients experienced >2 complications. Two patients were converted to an open procedure. A total of 6 patients required a blood transfusion (1.2%). The average hospital stay was 1.3 days and 9.4% required either a return visit to the emergency department or readmission. Sixty five percent of complications were grade I or II, and 22% were grade III. Only 2 grade IV complications occurred, and there were no deaths. The complications rate decreased with experience (p= 0.048).

Conclusions: Complications following RAP are most commonly minor, requiring expectant or medical intervention only, even during the initiation of a RAP program. The complication rate improved throughout the study period, but stabilized significantly after 200 procedures in this cohort.

Complication rate with experience (per 100 patients treated).

Patients treated	Number of patients with a complication	p value
1-100	17	
101-200	14	
201-300	11	
301-400	10	
401-500	7	
		0.048

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Initial Experience with Transperineal Saturation Prostate Biopsies in Patients with Previous Negative Transrectal Prostate Biopsies

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Introduction: Saturation prostate biopsy (SPB) represents an evolution of the prostate biopsy paradigm. Rising prostate-specific antigen (PSA) levels after negative transrectal prostate biopsies remain a clinical problem for urologists. We conceptualize the prostate to have twelve zones (apex, mid, and base with anterior and posterior divisions) and have developed a transperineal template-guided process to better sample the anterior prostate.

Methods: SPB was conducted under general anesthesia with patient in lithotomy position. An ALOKA SSD-4000 ultrasound unit with a biplanar endorectal linear array transducer was used with a CIVCO stepper and brachytherapy grid stabilizing arm. Biopsies were obtained from each of the twelve prostate zones.

Results: Thirty-two patients underwent transperineal SPBs between June 2006 and March 2008. Prostate cancer was identified in sixteen patients: one had Gleason 8, two had Gleason 7, and thirteen had Gleason 6. Nine patients had exclusively anterior cancer; four had exclusively posterior cancer. Two patients experienced urinary retention requiring catheterization.

Conclusions: In patients with negative transrectal prostate biopsies and rising PSA levels, concern remains for the presence of prostate cancer. Our experience demonstrates that transperineal SPBs have a 50% yield in finding cancer in this heavily biopsied population. In 56% of positive cases, detection resulted from improved sampling of anterior prostate tissue. Transperineal template-guided SPB is a procedure with low morbidity that improves diagnosis of anterior-based prostate cancer.

Patient parameters at time of Transperineal Saturation Prostate Biopsy

Parameter	Median	Range
Age	61	48-75
Pre-procedure PSA (ng/mL)	9.68	2.16-65.21
Number of previous negative prostate biopsies	2	1-9
Number of cores taken during previous prostate biopsies	13	12-26
Prostate volume at time of saturation prostate biopsy	40.1	23-104
Number of cores taken during saturation prostate biopsy	51	17-91

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Prostate Cancer Detection with Contrast-Enhanced Ultrasound Using a Flash Replenishment Imaging Technique - MicroFlow Imaging

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Introduction: Sonographic detection of prostate cancer is limited with conventional gray scale and Doppler imaging. In order to improve the detection of prostate cancer by needle guided biopsy, we evaluated the MicroFlow Imaging (MFI) of prostatic vascularity during infusion of an ultrasound contrast agent.

Methods: Eighty one patients referred for prostate biopsy were evaluated by transrectal US using the microbubble agent Definity in a prospective IRB approved study. MFI is a flash-replenishment technique that uses high power flash pulses to destroy bubbles, followed by low power pulses to depict vascular architecture. Up to 6 targeted biopsies (TB) were obtained from areas of abnormal vascular enhancement, followed by a systematic 12 core biopsy (SB).

Results: A positive biopsy for cancer was found in 43% of subjects. Positive biopsies were obtained in 96/972 (9.9%) SB and 60/295 (20.3%) TB (OR=3.4, p<0.001). Two patients with cancer were identified only by TB, 19 by both, and 14 only by SB (p=0.0027). Among 33 patients detected by SB, 19 patients with a positive targeted core demonstrated an average of 3.8 positive systematic cores while 14 patients who were missed by TB demonstrated an average of 1.4 positive systematic cores (p=0.004). Mean SB core involvement was 31.2% among patients with a positive targeted core, compared with 11.6% among patients who were missed by TB (p=0.01). There was a trend toward increasing Gleason score (>6) among patients with a positive TB (p=0.07).

Conclusion: TB of the prostate based upon MFI efficiently detects high volume prostate cancer which is most likely to be clinically significant.

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Incidence and Antibiotic Resistance Patterns in Urosepsis Following Prostate Biopsy: A Review of 3,000 Cases

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Introduction: It is common practice to require a negative urine culture and to administer a short prophylactic course of an oral fluoroquinolone prior to performing a trans-rectal ultrasound (TRUS) prostate biopsy. Despite these measures, infections ranging from prostatitis to urosepsis are among the most common complications.

Methods: We retrospectively analyzed all cases of TRUS prostate biopsies performed between 2001 and 2006 at the 3 main hospitals within our healthcare system. All subsequent hospitalizations within one month of the biopsy were reviewed.

Results: A total of 3,000 biopsies were reviewed, and 26 cases of urosepsis requiring hospitalization were identified (incidence 0.87%). Median age at time of biopsy was 64.3 years. Sepsis started within 0 to 9 days following biopsy, leading to hospitalization for 1 to 21 days. 24 cases had received antibiotic prophylaxis using Ciprofloxacin with (2) or without (22) other agents. E. Coli was the most common pathogen (85.7%). Cultures were negative in five cases, two of which had received combination prophylaxis. Ciprofloxacin resistance was present in 89.5% of cultures.

Conclusions: Considering the high rate of Ciprofloxacin resistance in the community and in our series, it may be more appropriate to use other antibiotics prophylactically. Despite our best efforts, we cannot exclude the possibility that some cases may not have been captured in our data. This may account for the observed incidence being lower than expected. Another possibility may be the success of Ciprofloxacin in preventing less virulent cases of sepsis, leaving us to observe only the most virulent cases.

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Perioperative Complications of Radical Prostatectomy

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Introduction: Since the development of anatomic radical retropubic prostatectomy (RRP), the morbidity and mortality associated with radical prostatectomy has drastically decreased. Minimally invasive approaches to radical prostatectomy, like laparoscopic radical prostatectomy (LRP), are becoming more popular with the hope of minimizing perioperative morbidity and facilitating faster recovery. We compared perioperative complications of contemporary RRP and LRP - with and without robotic assistance - performed by multiple surgeons in a high-volume tertiary care center.

Methods: Departmental morbidity and mortality records between 1997 and 2007 were reviewed, and all complications of RRP and LRP in our institution were categorized. LRP was then stratified by year to account for progression in surgical skill along the learning curve.

Results:	**RRP 1997-2007**	**LRP 2001-2004**	**LRP 2005-2007**
Total # cases	10183	416	863
Complication Type	%	%	%
Technical/Surgical Injury (eg: ureteral, obturator nerve, rectal)	0.40	1.68	0.70
Surgical-site Related (eg: wound infection, abscess)	0.45	1.44	0.46
Infection (eg: UTI, C.diff colitis)	0.07	-----	0.12
Bleeding	;0.34	0.72	0.23
Requiring hemodynamic monitoring+transfusions	0.19	0.48	----
Requiring reexploration	0.16	0.24	0.23
Thromboembolic (DVT/PE)	0.55	0.72	0.58
Cardio-/Cerebrovascular	0.08	0.24	-----
Bowel related (eg: ileus, SBO)	0.66	1.20	0.81
Medical (eg: Pneumonia, ARF, AMS, immunologic)	0.57	0.24	0.81
Positional (eg: shoulder injury, compartment syndr)	0.05	-----	-----
Foley dislodgement	0.06	0.24	0.12
Aborted procedure	0.06	----	0.12
open conversion		1.44	-----
Reexploration (not due to bleeding)	0.16	0.96	0.23
Anesthesia-related	0.08	0.24	0.35
Misc	0.21	0.96	0.23
Total Morbidity	**3.89%**	**10.32%**	**4.98%**
Mortality	**0.03%**	**-----**	**0.12%**

With improvement in surgical skill and technique, the rate of complicated bleeding requiring hemodynamic monitoring and serial transfusion is lower in LRP (0.23%) than RRP (0.34%). However, there is a non-significant (all p-values derived between RRP (1997-2007) and LRP (2005-2007) > 0.1) increased risk of anesthetic, medical, and bowel-related complications in LRP than RRP.

Conclusions: Perioperative complications of RRP and LRP are rare at a high-volume, tertiary referral center. Although the differences in most categories did not appear significant, complications were more common in the LRP group than the RRP group. The rate of technical complications of LRP, however, is rapidly approaching the RRP baseline, as is the overall morbidity.

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Management of Rectal Injury During Radical Prostatectomy

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Introduction: We desired to critically evaluate the contemporary incidence and management of rectal injury (RI) during radical prostatectomy (RP).

Methods: RIs during RP were identified from departmental Morbidity and Mortality records. Electronic patient records were reviewed to evaluate the subsequent management and outcomes.

Results: From 1/1997-8/2007, 11,452 men underwent RP: 10,183 men by the radical retropubic approach (RRP), 1,269 by the laparoscopic approach (LRP) with or without robotic assist. RI occurred in 18 men - 12 in RRPs (0.12%) and 6 in LRPs (0.47%). Sixteen RIs were recognized intraoperatively and primarily repaired in 2 or 3 layers without a diverting colostomy. A pedicle of omentum was used as an interposing layer in 4 cases. Despite primary repair without interposed omentum and a diverting colostomy, 2 patients developed a rectourethral fistula. In one (RRP), the fistula closed with prolonged catheterization (9 weeks). In the other (LRP), the fistula persisted, and a transrectal advancement flap was required.
Two RIs (1 RRP, 1 LRP) were unrecognized at the time of RP but presented within 4 days. Despite conservative management, the rectourethral fistulas persisted in both men requiring subsequent repair via transrectal advancement flap.

Conclusions: In intraoperatively recognized RI, primary repair without diverting colostomy prevented subsequent rectourethral fistula formation in 87.5%. RI discovered postoperatively should be primarily repaired with omental interposition and a diverting colostomy. Without primary repair, the rectourethral fistula most likely will persist, requiring delayed surgical repair.

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Ureteroscope Cleaning and Sterilization by the Urology Operating Room Team: The Effect on Repair Costs

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Introduction: Flexible ureteroscopes are fragile devices, and the costs associated with their repair and replacement can be considerable. Although surgical use can degrade ureteroscope function, the cleaning and sterilization process can also cause great damage. We performed a study to define the effect of having the urology operating room nursing staff process and sterilize all ureteroscopes, rather than the central processing core; the total repair cost and cost per use were analyzed.

Methods: From April 2007 to March 2008, all ureteroscopes were processed by the urology nursing staff. We analyzed the average cost per use as a measure of the effectiveness of this strategy. For all endoscopic stone removal cases, a flexible ureteroscope is opened onto the operative field; therefore, after every endoscopic case the flexible ureteroscope requires processing and sterilizing. The number of times each ureteroscope was processed, the type and cost of repairs were recorded.

Results: From April 2007 to March 2008, 11 ureteroscopes were processed 478 times; average number of uses before repair was 28.1. Seven ureteroscopes were returned for repair due to: loss of deflection (2); loss of fiber-optic bundles (2); failed leak test (3). No ureteroscope damage was due to processing. The total repair cost in this 12 month period was .50. Amortizing repair costs over use gives a value of .63 cost per use.

Conclusions: Training the urology nursing staff to clean and sterilize ureteroscopes is a reasonable means to reduce processing-related damages.

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Robotic-assisted Laparoscopic Ureterocalicostomy in the Pediatric Population

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Introduction: Ureterocalicostomy is an alternative approach to ureteropelvic junction (UPJ) obstruction in patients with a significantly scarred or inaccessible UPJ. We report the first series of robotically assisted laparoscopic ureterocalicostomy (RALU) in the pediatric population.

Methods: Patients who underwent transperitoneal RALU as primary or secondary treatment for UPJ obstruction were reviewed. Diuretic renal scintigraphy (DRI) and renal bladder ultrasound were obtained prior to surgery. Outcome measured included operative time and length of hospital stay. Post operative follow up included ultrasound at 3 months and DRI at 6 and 12 month.

Results: Nine patients (age ranges 3 to15 years, mean 6.5) underwent RALU. Of the 9 patients, 6 had previous UPJ surgery, while 3 presented primarily. Six patients had stenotic UPJs in which 4 had previous UPJ surgery. Three patients had crossing vessel pathology. Mean operative time was 168 minutes (range 102 - 204) for the ureterocalicostomy portion. Two patients had concomitant renal calculi and underwent pyeloscopy and stone removal at the time of the surgery requiring an additional 14 and 21 minutes. The mean hospital stay was 21 hours (range 17 - 26). Ultrasounds performed 3 months after stent removal showed persistent dilation. DRI was performed in all the patients at 6 and 12 months after surgery revealing no evidence of obstruction in any patients.

Conclusions: This is the first series of RALU in the pediatric population. It appears to be a feasible, safe and successful operation in this population.

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Robotic Assisted Laparoscopic Partial Nephrectomy: Initial clinical experience and Technique for Pathologic T1NoMo Renal Cell Carcinoma

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Introduction: Open nephron sparing surgery is an accepted treatment option for patients with small renal tumors, compromised renal function, and solitary kidneys. Laparoscopic partial nephrectomy is an alternative to open surgery. The DaVinci surgical system may make the laparoscopic partial nephrectomy more feasible allowing for more technically complex procedures and reduced ischemia time. We present our initial experience of 22 robotic partial nephrectomies (RALPN).

Methods: We identified 20 consecutive patients with suspicious renal masses who underwent 22 overall procedures in a 7 month period. Intraoperative ultrasound was used to define the tumor margins, bulldog clamps used for vascular control, frozen sections were taken to assess margin status and reconstruction took place using several hemostatic agents.

Results: 22 masses in 20 patients, 17 men and 5 women, median age 55yr, underwent RALPN. Median ischemia time was 30min. Median EBL was 100ml. Median LOS was 3 days. Median tumor size was 3.0cm. Pathology revealed clear cell in 8, papillary in 6, cystic RCC in 3, oncocytomas in 2, chromophobe in 2 and AML in 1. All resection margins were negative. 0 patients required intraoperative transfusions, 2 patients required postoperative transfusions. Baseline median creatinine was 1.1 and postoperative median creatinine was 1.1.

Conclusions: RALPN is a technically safe and feasible procedure that appears to be an alternative to laparoscopic and open partial nephrectomy. The DaVinci surgical system allows intracorporeal suturing and excision of renal masses with ease and precision required for reconstruction, along with added benefits of keeping ischemia time to a minimum.

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Innovative Technique for Mesh Stablization to the Perineal Body for Robotic Pelvic Floor Reconstruction with Mesh Placement

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Introduction: Surgical options for pelvic prolapse (PP) have expanded with transvaginal kits increasing in popularity. Unfortunately, dyspareunia and mesh erosion (ME) is a concern, and vaginal anatomy may preclude this approach. The transabdominal colposuspension (TAC) enjoys long-term data demonstrating efficacy. The Robotic TAC offers a minimally invasive alternative. We describe our technique of Robotic TAC polypropolene mesh (PM) placement into the perineal body (PB).

Methods: Standard dissection exposes the sacral promontory (SP) and retroperitoneum to the PB. A 20 x 3 cm PM is prepared as a T-shaped graft with a 5 x 1 cm tail with a prolene stitch (PS) at the tip tied with a loop and delivered intraperitoneally. A spinal needle (SN) is passed internally through the PB by digitally identifying vagina and rectum. The PS free end is fed into the SN and both are externalized. The PS is grasped and pulled, externalizing the tail. The 3 cm portion of the PM closely abutts the internal border of the PB. The PM is cut at skin level. Internally, the PM is tacked to PB, posterior vaginal wall, apex, cervix and SP with 0 gortex and retroperitonealized.

Results: We have performed a variety of Robotic antiincontinence and PP repairs. This is our recent modification. To date exam there is excellent anterior, posterior and apical support without ME.

Conclusions: Robotic TAC with PM placement is technically feasible, safe, well tolerated and cost effective. This is the first documentation of this technique in the literature to date.