1

Curvature Deformity and Symptom Bother Improvement Over Time in Patients with Peyronie's Disease Treated with Collagenase Clostridium Histolyticum

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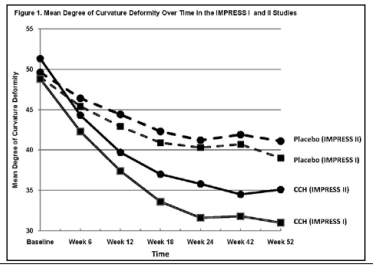
Introduction: The Investigation for Maximal Peyronie's Reduction Efficacy and Safety Studies (IMPRESS) I and II examined the clinical efficacy of collagenase clostridium histolyticum (CCH) in subjects with Peyronie's disease (PD). The effect of CCH on change from baseline penile curvature deformity and PD symptom bother score using the PD questionnaire (PDQ) was evaluated longitudinally.

Materials & Methods: The identical IMPRESS I and II randomized, placebo-controlled, double-blind, phase 3 studies enrolled subjects ≥ 18 years of age with stable PD symptoms for ≥ 12 months and penile curvature deformity of 30° to 90°. Subjects received up to 8 injections of 0.58 mg CCH given as two injections separated by approximately 24-72 hours, with the second injection followed 24-72 hours later by plaque modeling. Each cycle was separated by 6 weeks.

Results: Figure 1 shows the mean degree of curvature deformity during the study. The mean curvature reduction was significantly greater in the CCH treatment group vs placebo at Weeks 24, 42, and 52 ($p < 0.01$) in both trials. The 52-week improvement in PD symptom bother was significantly greater in the CCH groups than in placebo groups for both studies ($p < 0.05$).

Conclusions: Over time, PD patients treated with CCH experienced significant improvements in mean penile curvature deformity and PD bother scores. Clinically significant improvements in penile curvature were rapidly achieved and sustained with CCH treatment.



2

Combined Inflatable Penile Prosthesis-Artificial Urinary Sphincter Implantation-No Increased Risk of Adverse Events Compared to Single or Staged Device Implantation

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Introduction: Little data exist on outcomes for combined Inflatable Penile Prosthesis (IPP) and Artificial Urinary Sphincter (AUS) insertion for the treatment of erectile dysfunction and stress incontinence. This study's objective was to assess patient outcomes for combined vs. single device implantation procedures at a single institution.

Materials & Methods: A retrospective review of all patients undergoing IPP and AUS insertion at the Johns Hopkins Hospital from January 2000-December 2011 was performed. A total of 55 combined procedures were performed, compared with 336 IPP and 279 AUS.

Results: The surgical approaches consisted of penoscrotal incisions for IPP, and transperineal incisions for AUS cuff placement with a secondary lower abdominal incision for reservoir placement. Significant demographic differences between groups included those men undergoing combined implantation having a higher mean age, risk of prostate cancer diagnosis & treatment, and a lesser risk of Peyronie's disease compared to men undergoing IPP alone (all $p < 0.05$). Although the duration of surgery was significantly longer for the combined procedure (mean 218.1 minutes vs. 145.9 for IPP alone and 114.7 for AUS alone, $p < 0.0001$), there was no increased risk of device infection, erosion or malfunction in patients who received combined or staged procedures ($p > 0.05$).

Conclusion: Combined IPP-AUS insertion is safe with no increased risk of adverse outcomes compared to single prosthetic implantation. Patients should be counseled about this surgical option given the clear benefits of this approach, which include a single anesthesia event and faster resumption of sexual activity and urinary control.

3

Penile Straightening Maneuvers Employed During Inflatable Penile Prosthesis Insertion: Surgical Options and Outcomes

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Introduction: Straightening maneuvers (SM), including manual penile modeling, tunical relaxing incisions and corporal reconstruction using grafting techniques, may be required during inflatable penile prosthesis (IPP) insertion to ensure a functionally straight penis. Our aim was to compare the outcomes of men undergoing SM employed during IPP insertion compared to those wherein SM were not required.

Materials & Methods: A retrospective review of 390 patients undergoing IPP insertion at the Johns Hopkins Hospital from January 2000-December 2011 was performed. Patients in whom SM was employed (SM, n = 93, 23.9% of the overall cohort) were compared to those for whom SM was not required (IPP group, n = 297).

Results: Patients in whom a SM was used were younger (55.4 vs. 62.3 years) and more likely to have Peyronie's disease, and less likely to have prostate cancer, radical prostatectomy or to have previously used erectile aids (all $p < 0.05$). Mean surgical time in the SM group was longer (173.8 vs. 152.9 minutes, $p < 0.005$). Within the SM group, modeling was performed in 40 (43%), tunical relaxing incisions in 37 (39.8%), and tunical reconstruction in 16 (17.2%) (most commonly using allograft dermis or pericardium, or synthetic gore-tex grafts) patients. There were no significant differences in device infection ($p = 0.15$), mechanical failure ($p = 0.23$) or erosion ($p = 0.96$).

Conclusion: IPP insertion in men with penile deformity requiring complex reconstruction to achieve straightening may be done proficiently without increased adverse outcome risk. SM can achieve good results with an overall high safety profile.

4

Does Switching Patients from Finasteride to Dutasteride Result in Improved Measurable Outcomes?

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Introduction: Dutasteride inhibits both types I and II isoenzymes of 5-alpha-reductase (5-AR) while finasteride inhibits type II exclusively. There are theoretical benefits of more robust 5-AR inhibition, however, clinical benefit is unclear in patients switching from finasteride to dutasteride. Herein, we aim to determine whether patients taking finasteride for more than one year demonstrate clinical benefits upon switching to dutasteride.

Materials & Methods: 54 males age 50 to 80 were enrolled in this prospective cohort study that were stable on finasteride for at least 12 months. Baseline PSA and DHT levels, along with AUA-SI questionnaire, IPSS scores, post-void residual, and transrectal ultrasound guided prostate volume were recorded. Subjects discontinued finasteride and immediately switched to dutasteride 0.5 milligram. Follow up occurred at 1,3,6,9, and 12 months assessing the aforementioned variables.

Results: Mean age was 71.9 years, 52 and 48 percent of patients were black and white respectively. At baseline and 12 months, mean DHT levels were 96.4 and 54.4 ng/dL ($p = 0.001$), and mean prostate volumes were 36.5 and 40 mL respectively ($p = 0.03$). There were no significant differences with respect to IPSS scores, quality of life assessments, post-void residuals, or PSA.

Conclusion: We found statistically significant differences in lower DHT levels and larger prostate volumes when switching from finasteride to dutasteride. No clinically relevant differences were identified when accounting for AUA-SI questionnaire, IPSS scores, and post-void residual volumes. It is possible in the 12 months patients were on finasteride, the majority of therapeutic effects were realized and further improvement may not be appreciated.

MP1

Pathologic Findings at Radical Prostatectomy of Men Eligible for Active Surveillance: Impact of Race

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Introduction: To compare radical prostatectomy (RP) features between Caucasian (CM) and African American men (AAM) who met criterion for active surveillance (AS).

Materials & Methods: We queried our institutional RP database for pathologic data on prostatectomy specimens from 1991 to 2012. Eligibility Criteria: Gleason 3+3 disease in ≤ 3 positive cores with no single core having more than 50% tumor involvement; PSA < 10, and clinical stage ≤ T2a.

Results: We identified 610 men from 3097 RP specimens who met eligibility criteria for AS of which 160 were AAM (26.2%). AAM had a slightly higher risk of seminal vesicle invasion (3.1% vs. 0.66%, p = 0.018), positive margins (25% vs. 17.5%, p = 0.04) and biochemical recurrence (21.8% vs.14.2%,p = 0.02) compared to CM. No statistically significant differences were seen with upgrading, upstaging, nodal disease, or the percent of patients with primary Gleason 4 or 5 at final pathology.

Variables	African American	Caucasian	P
# of patients	160	450	
pT3 disease	12.5% (20)	10.6% (48)	0.52
pT4 disease	1.25% (2)	0.22% (1)	0.11
Mean age	56.5	59.11	
pN1/N2	0% (0)	0.22 (1)	0.55
pGleason sum or more	32.5% (52)	26.6% (120)	0.15
SVI	3.1% (5)	0.66% (3)	0.018
Positive margins	25% (40)	17.5% (79)	0.04
BCR	21.8% (35)	14.2% (64)	0.02
% with primary Gleason 4/5 on final pathology	1.875% (3)	4.2% (19)	0.17

Conclusions: AAM who meet AS criterion had a slightly higher risk of seminal vesicle invasion, positive margins and biochemical recurrence compared to CM. AAM who are appropriate candidates and seek active surveillance may harbor more aggressive disease than CM with similar features and should be counseled appropriately.

MP2

Outcomes of Salvage Prostate Cryoablation After Primary External Beam Radiation or Brachytherapy: Is There a Difference?

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Introduction: Prostate cryoablation (CRYO) is a treatment option for biochemical recurrence (BCR) after primary external beam radiation therapy (EBRT) or brachytherapy (BT) for localized prostate cancer (CaP). It is unknown whether one modality is more amenable to salvage CRYO. We sought to evaluate outcome differences in salvage CRYO following primary EBRT vs. BT.

Materials & Methods: Using the Cryo Online Database (COLD), we collected data on men having received BT or EBRT for localized CaP with salvage CRYO for BCR. Biochemical disease-free survival (bDFS) was defined using Phoenix criteria, and compared at 5 years post-CRYO. Groups were also compared in terms of post-operative complications 1 year post-CRYO: incontinence, pad use, urinary retention, potency, and rectourethral fistulae. Subsequent prostate biopsy data were compared between groups during the first year post-CRYO.

Results: 101 and 566 men had undergone BT and EBRT, respectively, followed by salvage CRYO for BCR. No differences existed in age, Gleason score, stage, baseline PSA, or D'Amico risk. There were no significant differences in 1-year post-CRYO complications. During the first year post-CRYO, there was no difference in repeat biopsy rate, nor any difference in biopsy outcome. At 5 years, 32% receiving BT+CRYO and 43% receiving EBRT+CRYO remained free from biochemical failure (p = 0.7481).

Conclusions: bDFS with salvage CRYO was slightly higher with EBRT compared to BT, but did not reach statistical significance. No differences in 1-year post-CRYO complications existed between these two groups. Similarly, equal percentages in both groups underwent post-CRYO prostate biopsies during the first year, with no difference in outcome.

MP3

A Novel Technique of Robotic Combined Simple Prostatectomy for Patients on Antiplatelet Therapy

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Introduction: Open simple prostatectomy is a surgical treatment option for men with severe lower urinary tract symptoms and larger prostate glands. We present a novel technique of robotic simple prostatectomy which can safely and effectively be performed on patients receiving aspirin therapy.

Materials & Methods: We conducted a retrospective review of data collected prospectively for a quality improvement database and identified eleven patients from February 2009 to August 2012 who met the inclusion criteria. All patients in the study received 324 mg of aspirin before surgery to reduce the risk of perioperative cardiovascular and thromboembolic events. The surgical technique combined elements from both suprapubic and retropubic prostatectomy approaches involving a vertical cystotomy extending from the prostatic capsule through the bladder neck to the mid anterior bladder wall which provided adequate exposure for enucleation of the adenoma and hemostasis.

Results: The median age of our patients was 69 years (54-80) and median resection size was 70.7 grams (25.1-101.4). Median operative time was 180 minutes (147.0-287.0). Median estimated blood loss was 200 mL (35.0-500.0). Median length of hospital stay was 1 day (1-9). Median duration of indwelling urinary catheters was 9.5 days (7.0-15.0). No patient experienced a cardiovascular or thromboembolic event. Median International Prostate Symptom Scores improved from 19.5 to 10.0, and the maximum flow rates improved from 9.5 to 13.0 mL/sec.

Conclusions: The robotic combined simple prostatectomy is an effective, minimally invasive alternative for patients with large prostate glands, and it can be performed safely with concomitant aspirin therapy.

MP4

Has the United States Preventive Services Task Force (USPSTF) Recommendation Against Prostate Specific Antigen (PSA) Screening Affected Patients Undergoing Radical Prostatectomy? A Multi-Center International Analysis

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Introduction: Recently, the USPSTF gave PSA screening for prostate cancer a grade of "D" with recommendations against its use, and there has been a strong trend towards active surveillance for clinically organ confined cancers. We aim to study the early effects of the USPSTF recommendations on our radical prostatectomy series and compare it to a contemporary international cohort in Korea.

Materials & Methods: We retrospectively reviewed the records of 921 patients who underwent a robotic assisted radical prostatectomy at a single US institution between 10/2006 and 9/2012; 1155 radical prostatectomy patients during the same time frame in Korea served as the control group. Patients were stratified into pre- and post- USPSTF recommendations. The Pearson Chi-Square and t-test were used for statistical analysis.

Results: In the US group, 122 patients were excluded due to incomplete data, leaving 799 patients for the analyses.

Table 1. Results from Group 1 (USA)

	Pre-USPSTF recommendations	Post-USPSTF recommendations	P-value
Total number	760	39	
Mean age	60.087	62.462	0.769
Gleason score (8 or greater)	39/760 (5.13%)	4/39 (10.26%)	0.17
Positive surgical margins	148/760 (19.47%)	9/39 (23%)	0.58
T stage ≥ 3	109/760 (14.34%)	12/39 (44.44%)	0.005
Abnormal DRE	154/760 (20.26%)	15/39 (38.46%)	0.007
Mean PSA	6.287	7.605	0.04

Table 2. Results from Group 2 (Korea)

	Pre-USPSTF recommendations	Post-USPSTF recommendations	P-value
Total number	1073	82	
Mean age	65.46	65.43	0.962
Gleason score (8 or greater)	209/1073 (19.48%)	17/82 (20.73%)	0.78
Positive surgical margins	210/1073 (19.57%)	28/82(34.15%)	0.0017
T stage ≥ 3	375/1073 (34.95%)	27/82 (32.93%)	0.71
Abnormal DRE	219/1073 (20.41%)	18/82 (21.95%)	0.74
Mean PSA	9.945	7.156	0.018

Conclusions: There was a statistically significant trend towards higher PSA, abnormal DRE and pathologically advanced T stage since the USPSTF announcement against PSA screening in April 2012, although no such change was observed in the Korean group. Longer follow up with a larger cohort is needed.

MP5

Increased Use of Adjunctive Intravenous Antibiotics at Time of Prostate Needle Biopsy Fails to Reduce Infectious Complications

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Introduction: We reviewed the utilization of adjunctive intravenous antibiotics for transurethral ultrasound-guided prostate needle biopsy (TRUS-PNB) to determine impact on post-procedural infectious complications.

Materials & Methods: Our institutional TRUS-PNB database was reviewed to identify consecutive men undergoing biopsy over a 24-month period (March 2010-March 2012). Patients were chronologically grouped into 6-month intervals to determine utilization of peri-procedural IV antibiotics. The incidence of infectious post-biopsy complications (defined as fever > 38.5°C with a positive blood and/or urine culture) was compared between patients receiving oral alone versus IV plus oral antibiotic prophylaxis. Univariate and multivariate analyses determined characteristics associated with infectious complications.

Results: Of 393 men in our cohort, 118 (30%) received adjunctive IV antibiotics at time of TRUS-PNB. Common regimens included aminoglycosides, penicillin family, and quinolones. Utilization of adjunctive IV antibiotics rose significantly in the last 6-months of the study period (22% vs. 55%, $p < 0.001$). Six patients (1.5%) developed culture positive febrile complications with an increase in each subsequent 6-month interval (0% vs. 0.9% vs. 1.0% vs. 4.2%, $p = 0.03$). No difference in infection rates were noted between the oral and IV + oral antibiotic prophylaxis cohorts (1.45% vs. 1.69%, $p = 1.0$). In a multivariate model, whilst adjunctive IV antibiotic use (OR 1.05) was not associated with infections, antibiotic use in the last 6-months (OR 3.65, 95% CI 1.8 - 5.1, $p = 0.03$) and prior biopsy (OR 1.4, 95% CI 1.0 - 2.1, $p = 0.05$) were associated with infectious complications.

Conclusions: Adjunctive peri-procedural IV antibiotic use does not reduce infectious complications following TRUS-PNB.

MP6

Effects of Prostate Cancer Diagnosis and Treatment on Delay to Renal Transplantation

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Introduction: The effects of prostate cancer screening and subsequent treatment selection on transplant candidacy are poorly understood.

Materials & Methods: We examined 4,326 patients evaluated in the kidney transplant clinic from 1/1996 to 8/2011 for ICD-9 codes pertaining to CaP and PSA elevation. Exclusion criteria included history of transplantation prior to diagnosis of CaP. A final cohort of 58 patients was examined for age at diagnosis of CaP, D'Amico risk category, the presence of delay to renal transplantation due to CaP diagnosis or treatment, treatment type, and biochemical recurrence.

Results: Average age at CaP diagnosis was 63.3 years. Treatment selection included prostatectomy in 9 patients, external radiation in 31, brachytherapy in 11 patients, cryotherapy in 1 patient, and no active treatment in 5 patients. There were 32 low, 10 intermediate and 10 high risk patients. A log regression model of age, D'Amico risk category, type of treatment, and biochemical recurrence found that D'Amico risk category was the sole significant factor ($p = 0.03$) in delayed transplantation.

Conclusions: Only worsening D'Amico risk category was a significant factor in delay to renal transplantation. The lack of significance in the treatment selection category may have important implications on the referral of renal transplant candidates for external radiation. Low risk disease was not a significant risk factor for delay, which argues that screening for CaP does not lead to transplant delay. Future studies should include co-morbid confounders and the time difference between CaP diagnosis and transplant.

MP7

Does Routine Cystoscopy Before Robotic Assisted Laparoscopic Radical Prostatectomy Change Management?

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Introduction: Our study evaluated the value of cystoscopy findings prior to robot assisted laparoscopic prostatectomy (RALP) at our institution. Although there are no standard guidelines, some investigators have advocated the routine use of cystoscopy prior to radical prostatectomy secondary to incidental cystoscopy findings that may lead to management changes.

Materials & Methods: We retrospectively reviewed the records of 116 patients with organ confined prostate cancer undergoing RALP from 2010 to 2012. We assessed how many patients had significant findings on cystoscopy leading to a change in management.

Results: Cystoscopy was performed on 97 of the 116 patients. Management was changed for 9 patients (9.3%) due to cystoscopy findings. 1 patient was found to have bladder tumor on flexible cystoscopy at the time of prostatectomy and therefore the bladder tumor was resected and prostatectomy was aborted. This patient ultimately required cystoprostatectomy with urinary diversion due to T1 high grade and diffuse CIS bladder tumor. 8 patients required bilateral ureteral stent placements to identify the ureteral orifices intraoperatively (7 had large median lobes and 1 had ureteral orifices less than 1cm from bladder neck).

Conclusion: Results from our institution indicate routine cystoscopy prior to prostatectomy changed management in 9.3% of our patients. Therefore, we believe cystoscopy should be routinely performed before robotic assisted laparoscopic prostatectomy.

MP8

Pleural Effusion as a Predictor of Early Mortality Following Cytoreductive Nephrectomy (CN)

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Introduction: A significant proportion of patients with metastatic renal cell carcinoma (mRCC) demonstrate rapid disease progression following cytoreductive nephrectomy (CN) and, thus, likely do not benefit from surgery. With clinical predictors of rapid disease progression lacking and pleural effusion (PEF) common at presentation in mRCC patients, we sought to identify the association between PEF at presentation and early mortality following CN.

Materials & Methods: Using a prospectively maintained database, we identified all patients undergoing CN for mRCC from 1993-2012. PEF was identified via routine preoperative plain or axial imaging. Primary outcomes were overall (OS) and disease-specific survival (DSS) following CN. Survival curves were estimated using the Kaplan-Meier product-limit method. Logistic regression models were used to test the association between PEF and survival outcomes, adjusting for patient and disease characteristics.

Results: Of the 138 patients with mRCC identified (median follow up 14.5 months), PEF was identified in 18 patients (13%). PEF patients had higher rates of nutritional deficiency ($p = 0.24$) and clear cell histology ($p = 0.03$). Both disease specific ($p = 0.02$) and overall survival (OS) ($p = 0.003$) were decreased in PEF patients. On multivariate analysis, patients with PEF had increased overall (HR = 2.4 , 95% CI 1.3-4.4; $p = 0.005$) and disease specific (HR = 2.8, 95% CI 1.4-5.7; $p = 0.005$) mortality.

Conclusion: In our institutional cohort, PEF appears to be a marker for early mortality in patients with mRCC undergoing CN. As such, pending validation in other cohorts, presence of PEF may help prognosticate rapid disease progression following CN and thus better select patients for a "litmus test"with upfront targeted therapy.

MP9

Cost Comparison Among Laparoscopic, Open and Robotic Partial Nephrectomy at a Single Institution

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Introduction: Robotic PN (RPN) has been associated with a faster convalescence compared to open PN (OPN) and a shorter learning curve compared to laparoscopic PN (LPN), but at a potentially higher healthcare cost. We performed a comparative cost analysis of LPN, OPN and RPN at our institution since 2006.

Materials & Methods: We retrospectively reviewed the medical records of patients undergoing LPN, OPN and RPN at a single institution. Patients were eliminated if the medical record was not complete or radical nephrectomy was performed. Charges were broken up into total hospital charges, total OR charges, OR supply charges and OR services charges.

Results: Overall 232 patients underwent PN (89 LPN; 54 OPN; 89 RPN) between 2006-2012. Average lesion size was 3.4 cm, 4.2 cm, 3.1 cm in LPN, OPN and RPN, respectively. Mean length of stay (LOS) was 3.1d, 5.8d, and 2.8d, in LPN, OPN and RPN, respectively. Mean total hospital cost was highest in the OPN group, and lowest in RPN. Overall OR costs were highest in LPN, with RPN being the second overall (Table1).

Conclusions: OPN was associated with the lowest OR costs but the highest overall hospital costs, likely related to the use of continuous epidural anesthesia postoperatively and significantly longer hospital stay in this group. RPN had the lowest hospital cost, mainly due to reduced LOS and OR services costs.

TABLE 1. Cost Breakdown by Surgical Approach

Cost Breakdown	Lap	p	Open	p	Robotic	p
Mean Total Cost	$49,146	0.61	$51,182	0.003	$40,899	< 0.001
Mean OR Supplies	$9,365	< 0.001	$3,530	< 0.001	$8,220	0.03
Mean OR Services	$18,069	0.31	$17,153	< 0.001	$13,025	< 0.001
Mean Total OR	$27,434	< 0.001	$20,683	0.61	$21,245	< 0.001

MP10

Comparison of Clinical and Oncologic Outcomes in Patients Undergoing Robotic Versus Open Partial Nephrectomy: A Single Surgeon Experience

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Introduction: Robotic partial nephrectomy (RAPN) has become increasingly utilized for the treatment of small renal masses and this study aims to assess outcomes when compared to open partial nephrectomy (OPN).

Materials & Methods: This is a retrospective study of 137 patients who underwent either OPN or RAPN by a single surgeon from 2008-2012. Nephrometry scores were compared across groups using chi-square testing. Inter-observer agreeability was assessed on a kappa scale. Complications were assessed using the Clavien-Dindo classification.

Results: Of the 137 patients, 77 (56%) underwent OPN and 60 (44%) underwent RAPN. The robotic group was subdivided in the first and second 30 cases. There was a significantly shorter hospital stay in robotic group at 2.7 versus 5.05 days ($p = 0.0005$). Renal function was best preserved in the second robotic group ($p = 0.73$. The positive margin rates for the open, 1st and 2nd robotic groups were 9.5%, 31%, and 23.3%, respectively ($\chi 2 = 7.77$, $p = 0.021$). Complication rates were comparable across groups ($\chi 2 = 7.25$, $p = 0.84$). 68.9%, 13.3% and 42.9% had a moderate/high complexity mass in the open, 1st, and 2nd robotic groups ($p = 0.0005$). The inter-observer agreeability between the blinded reviewers regarding renal mass complexity was substantial at 80% ($\kappa = 0.65$).

Conclusions: In our series, robotic partial nephrectomy appears to yield slightly improved renal function outcomes and improved length of hospital stay when compared to an open approach. However, there was a 17.6% higher positive surgical margin rate in the robotic group. Furthermore, using the nephrometry system may help urologists select which surgical approach will optimize patient outcomes.

MP11

Robot-assisted Radical Cystectomy in a Private Practice Community Setting

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Introduction: We reviewed our oncologic survival data and surgery related short term and long term complications after RARC to ensure that the high standards achieved at tertiary academic centers can be replicated in the community setting.

Materials & Methods: A total of 18 consecutive patients with muscle invasive bladder cancer underwent RARC with extended lymphadenectomy and with extracorporeal urinary diversion over a 3 year interval between 2009 and 2012 by four surgeons in a single urologic practice.

Results: Extended pelvic lymphadenectomy was performed on all patients with an average of 13 lymph nodes removed. On final pathology, extravesical disease was common (7/18 patients, 39%). Positive surgical margins were detected in 2 patients. Disease-free, cancer-specific, and overall survival rates at 13 months were 77.8%, 77.8%, 77.8%, respectively. After RARC, one or more complications occurred within 90 days of surgery in 7/18 (39%) patients. Low grade complications were mostly infectious (57%) and cardiogenic (14%). High grade complications occurred in 5 patients. Urethral stricture (neobladder), wound dehiscence, myocardial infarction, and septic shock constituted the high-grade complications.

Conclusion: In a busy private community practice, RARC can achieve comparable oncologic outcomes to reported series from tertiary centers with high lymph node yields and a low positive margin rate. Early survival outcomes are similar to those reported in published RARC series with an encouraging low incidence of local recurrence. Even among our relatively old and sick cohort, the incidences of complications after RARC were lower than reported open cystectomy series complication rates.

MP12

Epidural Analgesia in Cystectomy Population: Synergistic With Alvimopan?

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Introduction: Cystectomy is a procedure that is frequently complicated by delayed return of bowel function. Previous work by our group confirmed that alvimopan, a peripherally-acting mu opioid antagonist, accelerated recovery of bowel function in cystectomy patients. Epidural analgesia also has been touted as a cornerstone of perioperative pathways to speed gastrointestinal convalescence after cystectomy. In this study, we sought to evaluate if epidural analgesia exerts a synergistic effect with alvimopan in reducing length of stay (LOS).

Materials & Methods: Using an IRB-approved database of cystectomy at a single institution from September 2010-April 2012, we examined length of stay in the setting of routine perioperative alvimopan administration. Of thirty-six procedures evaluated, twenty-one patients underwent preoperative epidural catheter placement while fifteen patients lacked epidural analgesia.

Results: The groups were equal with respect to age, gender, indication, surgeon, and type of diversion. Median time to clear liquid diet was 3 days for the epidural group and 5 days for the no epidural group ($p = 0.02$). Time to regular diet was not different between groups. Patients with epidural had a median LOS of 8 days (range 5-13) while those without epidural had a median LOS of 7 days (range 6-22) ($p = 0.79$). No patient in either group experienced readmission for ileus.

Conclusions: Although our findings did not identify a synergistic effect with alvimopan on LOS, there was earlier initiation of diet in the epidural cohort. For cystectomy patients in whom minimizing systemic opioids is advisable, epidural analgesia in combination with alvimopan is a reasonable option.

MP13

Androgen Deprivation Therapy with GTx-758 Significantly Decreases Markers for Bone Turnover Compared to Leuprolide in Men with Advanced Prostate Cancer

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Introduction: GTx-758 is an oral estrogen receptor-α agonist being evaluated for the treatment of advanced prostate cancer (CaP). Preliminary results indicate that GTx-758 reduces free testosterone (T) more effectively than leuprolide depot (LD). Adverse side effects of androgen deprivation therapy (ADT) include increased bone loss and pathologic fractures. C-terminal peptide (CTP) and bone specific alkaline phosphatase (ALP) are markers of bone turnover (BT). Herein, we compare GTx-758 and LD on serum BT markers.

Materials & Methods: In G200705, a phase II clinical trial, 159 men with advanced CaP were randomized to receive GTx-758 1000 mg or 2000 mg daily, or a 30 mg LD. CTP and ALP were measured at day 1 and 120. Statistical analysis was performed where $p < 0.05$ was considered statistically significant.

Results: Mean percent change of CTP (pg/mL) at day 1 and 120 for LD, GTx-758 1000 mg and 2000 mg was 44.9 ± 48.7, -56.9 ± 12.5, and -54.8 ± 23.1 respectively ($p < 0.001$). Mean percent change of ALP (U/L) at day 1 and 120 for LD, GTx-758 1000 mg and 2000 mg was 8.4 ± 24.0, -28.5 ± 11.7, and -19.8 ± 14.7 respectively ($p < 0.001$). The study was terminated prior to completion due to increased thromboembolic events (VTEs).

Conclusions: Compared to LD, GTx-758 had statistically significant lower levels of BT markers. Limiting side effects of ADT is essential to improve patient compliance and minimize pathologic fractures. A phase II clinical trial utilizing lower doses of GTx-758 is ongoing to determine if similar effects on T and BT markers can be demonstrated with a lower rate of VTEs.

6

Re-examination of the Natural History of High-grade T1 Bladder Cancer: Analysis of a Large Cohort

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Introduction: High-grade T1 (HGT1) urothelial carcinoma of the bladder represents a clinical challenge, in that the urologist must balance the risk of disease progression against the morbidity and potential mortality of early radical cystectomy. Using two non-muscle invasive bladder cancer (NMIBC) databases, we re-examined the rates of recurrence and progression of HGT1 bladder cancer in our population.

Materials & Methods: We queried the NMIBC databases established independently at the Atlanta Veterans Affairs Medical Center and the Hospital of the University of Pennsylvania to identify patients who presented with HGT1 as their initial bladder cancer diagnosis. Demographic, clinical, and pathologic variables were examined as well as rates of recurrence and progression.

Results: A total of 222 patients were identified; 198 (89.1%) and 199 (89.6%) were male and non-African American, respectively. Mean patient age was 66.5 years. 191 (86.0%) of the patients presented with isolated HGT1 disease while 31 (14.0%) presented with HGT1 disease and concomitant carcinoma in-situ. Induction BCG was utilized in 175 (78.8%) patients. Recurrence of urothelial carcinoma occurred in 112 (50.5%) patients with progression occurring in only 19 (8.6%) patients. At a mean follow-up of 51 months, overall survival was 76.6%. 52 patients died, with only 13 (25%) patient deaths being bladder cancer related.

Conclusions: In our large cohort, we found that the risk of progression of primary HGT1 at five years was only 8.6%. While limited by its retrospective nature, this study could potentially serve as a starting point in re-examining the treatment algorithm for HGT1 bladder cancer.

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MRI Characterization of the Dynamic Effects of 5-Alpha Reductase Inhibitors on Prostate Zonal Volumes and the Clinical Utility of Prostate Segmentation in BPH

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Introduction: Volumetric effects of 5-alpha reductase inhibitors (5ARI) on the prostate have been studied using transrectal ultrasound, which provides poor visualization of prostatic zones. We investigate the temporal impacts of 5ARI on prostate zonal volumes and the clinical utility of prostate segmentation based on high-resolution MRI in men with BPH.

Materials & Methods: Nineteen patients with established BPH who were treated with 5ARI and underwent 3.0 Tesla MRI between 2007 and 2012 were studied. An age-matched group of 40 patients who were not on any therapy was selected as the control cohort. Total prostate volume (TPV), transition zone volume (TZV), and peripheral zone volume (PZV) were calculated using 3D segmentation from T2-weighted MRI.

Results: Following over two years of treatment, 5ARI decreased TPV by 16.7%, $p < 0.0001$. There were similar decreases in TZV (7.5%, $p < 0.001$) and PZV (27.4%, $p = 0.0002$). In the control group, TPV and TZV increased ($p < 0.0001$) while PZV remained stable. When adjusted for the natural growth of prostate zonal volume dynamics seen in the control cohort, approximately 60% reduction of TPV from 5ARI resulted from change in TZV and 40% reduction from change in PZV.

Conclusions: MRI characterization of dynamic effects of 5ARI on prostate zonal volumes demonstrates significant decreases in TPV, TZV, and PZV. 5ARI blocks the natural growth of TZV as men age and decreases both TZV and PZV. As imaging technology improves, prostate imaging segmentation based on high-resolution MRI allows for more accurate assessment of drug effect and evaluation of patients with BPH.

7

Long Term Follow-up of Carcinoma-in-situ of the Distal Ureter at Cystectomy

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Introduction: Concomitant ureteral CIS at the time of cystectomy has an incidence of 2-8.5%. Management of this finding is controversial due to the unclear natural history of these patients.

Materials & Methods: From 1999 to 2013, 10 patients were identified who underwent cystectomy for bladder cancer who had positive carcinoma-in-situ involving the distal ureteral at the time of the procedure. The median follow up was 79 months.

Results: Only one patient is free of recurrence. Eight patients developed recurrence in the upper tract. Two of those patients progressed into complete panurothelial transitional cell carcinoma involving both upper tracts and are alive with disease at the time of follow up. Four patients died from metastatic disease to the small bowel, liver, lung and brain. Two of the patients with one upper tract recurrences were lost to follow up.

Conclusions: The presence of carcinoma-in-situ at the distal ureter margin confers a dismal prognosis with unpredictable pattern of recurrence. Some patients with high stage disease, multifocality, may benefit from prophylactic upper tract topical therapy or early removal of all urothelium at risk.

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Return of Urinary Continence after Robotic Prostatectomy Not Improved by Bilateral Nerve Sparing: Initial Results with Minimum 1 year Follow-up

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Introduction: Refinements of surgical technique for radical prostatectomy using a robotic-assisted laparoscopic approach (RALP) appear to offer improved post-operative functional outcomes. We examined the impact of the degree of nerve-sparing on post-operative stress urinary incontinence (SUI).

Materials & Methods: We performed a retrospective review of RALP using our institutional IRB approved functional outcomes database. Patients who were continent pre-op and had a minimum of 12 months follow-up were included. One pad per day (PPD) for protection only or no pads were considered continent. The degree of nerve sparing during RALP was recorded prospectively for each side on a 1 to 4 scale: 1 = complete nerve preservation; 2 = possible nerve damage; 3 = definite partial nerve damage; 4 = complete nerve resection. Right and left were combined to yield a Total Nerve Sparing Score (TNSS), grouped into 3 categories: TNSS 2, 3-4, and 5-8. A Chi-squared test for trend was used for analysis.

Results: There were 253 patients who met inclusion criteria. Seventy three had a TNSS of 2, and 2.7% were incontinent and 97.3% were continent at 1 year. For TNSS 3-4, there were 89 patients, of which 11.2% were incontinent and 88.8% continent. There were 91 patients with a TNSS of 5-8, and 7.7% were incontinent and 92.3% were continent ($p = 0.2778$).

Conclusions: The degree of nerve sparing as stratified by TNSS did not correlate with recovering continence at 1 year. Other mechanisms apart from preserving the neurovascular bundle are likely more important in preventing SUI.

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Preoperative Statin Use and Predictors of Change in Renal Function After Partial Nephrectomy With Ischemia

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Introduction: Prior studies have implicated that statin medications can attenuate the loss of renal function following surgeries subjecting the kidney(s) to ischemia. The specific impact following partial nephrectomy remains unclear. We evaluated predictors of change in estimated glomerular filtration rate (eGFR) after partial nephrectomy in statin users and non-users.

Materials & Methods: Patients undergoing partial nephrectomy with ischemia (warm or cold) at 4 medical centers were reviewed. eGFR was calculated at 3 time points (1 day, 2-6 weeks, and 6-14 months following surgery) using the CKD-EPI formula. Multivariate linear regression analysis was performed to identify factors associated with changes in eGFR. Subgroup analysis was performed in patients with preop eGFR < 60 mL/min/1.73m^2.

Results: 795 patients met criteria for inclusion including 261 statin users and 534 non-users. When considering all patients, preoperative eGFR ($p < 0.01$), patient age ($p < 0.01$), hypertension ($p < 0.01$) and operative time ($p = 0.04$) all were associated with changes in eGFR. In patients specifically with a preoperative eGFR < 60 mL/min/1.73m^2, patient age ($p < 0.01$), nephrometry score ($p = 0.02$), and operative time ($p < 0.01$) were associated with eGFR changes. In contrast, statin use, ischemic duration, and type of ischemia (warm vs. cold) all were not significantly associated with change in eGFR.

Conclusions: Statin usage does not significantly protect against loss of renal function after partial nephrectomy. The lack of effect contrasts with prior clinical studies and may be due to lower warm ischemia times in this study and unilateral clamping of renal arterial flow.

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Nutritional Deficiency is Associated with Early Mortality in Patients with Metastatic Renal Cell Carcinoma Undergoing Cytoreductive Nephrectomy

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Introduction: Nutritional deficiency (ND) has been shown to be associated with higher mortality following surgery for locoregional renal cell carcinoma (RCC). We examined if ND was associated with early mortality following cytoreductive nephrectomy (CN).

Materials & Methods: We queried prospectively maintained databases from two institutions to identify patients undergoing CN for metastatic RCC from 1993-2012. ND was defined as: serum albumin < 3.5 mg/dL, weight loss > 5% or BMI < 18.5. Primary outcomes were overall survival (OS) and disease-specific survival (DSS). Survival curves were estimated using the Kaplan-Meier product-limit method. Logistic regression models were used to test the association between ND and survival outcomes, adjusting for patient and disease characteristics.

Results: Of 246 patients undergoing CN, 119 (48%) patients were categorized as ND. Differences in ECOG PS > 1 (16% vs 4%, $p = 0.005$), tumor stage < T3b (60.5% vs 80.3%, $p < 0.001$) and high nuclear grade (42.3% vs 37%, $p = 0.003$) were identified between ND and nutritionally replete (NR) groups. Compared to NR patients, ND patients had decreased overall (10 vs. 23 months, $p < 0.001$) and disease specific survival (14 vs. 51 months, $p < 0.001$). On multivariate analysis, ND remained a significant predictor of death for both overall (HR 1.80; 95% CI 1.28-2.54, $p < 0.001$) and disease-specific mortality (HR 1.90; 95% CI 1.28-2.82, $p < 0.001$).

Conclusions: Nutritional deficiency is associated with a reduced overall and disease specific survival in patients with metastatic renal cell carcinoma undergoing CN. Future research should investigate whether nutritional deficiency is a modifiable risk factor in patients with metastatic renal cell carcinoma.

11

Clinical and Pathologic Characterization of ERG Expression and Testosterone in African-Americans

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Introduction: Prostate cancer exhibits a wide range of pathology, from indolent to highly aggressive disease, with significant racial disparity. Distinguishing between these two disease states has proved challenging. In recent years substantial interest in ERG oncogenic activation has been generated, although only limited data is available on African-American cases. This study sought to determine the ERG oncoprotein correlation with patient demographics, tumor pathology, cancer progression, and biochemical recurrence by examining a large cohort of serial African-American prostatectomy specimens.

Materials & Methods: All hormone naïve African-American men presenting for radical prostatectomy at a single institution over an 18 year period with 2 years of follow up were included in this study. The whole-mounted radical prostatectomy specimens from these 306 African-American men were evaluated by immunohistochemistry with the anti-ERG antibody 9FY. These results were then correlated with clinical and pathologic variables.

Results: ERG frequencies were similar to previous reports for African-American men, with 26% of patients positive in index tumors and 48% of patients positive when examination included any tumors. ERG positive tumors were more likely in younger African-American men. ERG positive tumors were significantly enriched in lower grade tumors, and ERG positive tumors correlated with higher testosterone levels.

Conclusions: ERG positive tumors in African-Americans correlate with lower grade tumors, especially if associated with normal serum testosterone. This can be applied after the time of biopsy to risk-stratify patients for less invasive treatments. Further prospective study is needed to incorporate this finding into clinical practice.

MP14

Pivotal Phase 3 Study in Overactive Bladder (OAB) Patients with Urinary Incontinence Confirms OnabotulinumtoxinA 100U Significantly Improves All OAB Symptoms and Patients' Quality of Life

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Introduction: To confirm the efficacy and safety of onabotulinumtoxinA 100U for the treatment of overactive bladder (OAB) patients with urinary incontinence (UI) inadequately managed by anticholinergics.

Materials & Methods: In this pivotal phase 3 study (NCT00910520), OAB patients who had been inadequately managed by anticholinergics, had ≥ 3 urgency UI episodes/3 day, and ≥ 8 micturitions/day were randomized to onabotulinumtoxinA 100U (n = 277) or placebo (n = 271). Co-primary endpoints were change from baseline at week 12 in UI episodes/day and proportion of patients with a positive response on the treatment benefit scale (TBS). Other OAB symptoms, volume/void, and health-related quality of life (HRQOL) were evaluated, as were adverse events (AEs), post-void residual urine (PVR), and need for clean intermittent catheterization (CIC).

Results: At week 12, the change from BL in UI episodes/day was -2.95 for onabotulinumtoxinA vs -1.03 for placebo ($p < 0.001$). Reductions from baseline in other OAB symptoms were also significantly greater following onabotulinumtoxinA compared to placebo ($p \leq 0.007$). Volume/void was significantly increased with onabotulinumtoxinA (43.0 vs 12.6 mL; $p < 0.001$). Significantly more onabotulinumtoxinA patients reported a positive response on the TBS (62.8% vs 26.8% placebo; $p < 0.001$) and large improvements in HRQOL ($p < 0.001$ vs placebo). AEs were mainly localized to the urinary tract. Mean PVR significantly increased from baseline with onabotulinumtoxinA (46.9 vs 10.1 mL at week 2, $p < 0.001$); 6.9% of onabotulinumtoxinA patients initiated CIC.

Conclusions: In patients inadequately managed by anticholinergics, onabotulinumtoxinA 100U was confirmed to be well tolerated and demonstrated significant, clinically relevant improvements in all OAB symptoms, patient-reported benefit, and HRQOL.

MP15

The Efficacy of OnabotulinumtoxinA (Botox) on Neurogenic Detrusor Overactivity (NDO) patients in a Community Urology Practice

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Introduction: Recent literature has demonstrated the effectiveness of Botox injections in patients with urinary incontinence due to NDO. We review the results from our community practice of Botox injection therapy for patients with NDO that have that have failed at least two anticholinergic medications.

Materials and Methods: Between January 2009 to January 2013, 31 patients with NDO and urge urinary incontinence (UUI) who failed at least two anticholinergic agents received an average of two Botox injections with a mean of 178 units. Patients completed voiding diaries assessing the number of incontinent episodes per day, and post-void residuals were measured. Patients also reported any improvement in quality of life during office visits.

Results: The mean number of incontinent episodes per day prior to Botox was 4.24 compared to 1.72 after Botox injections and mean post-void residuals were 41 mL and 160 mL respectively. Eighty-four percent (26) of subjects reported an improvement in their quality of life after the first injection of Botox. Thirteen percent (4) of patients experienced one episode of acute urinary retention requiring catheterization within 2 weeks after injection.

Conclusions: OnabotulinumtoxinA injections have shown a statistically significant reduction in the number of UUI episodes in patients with NDO. ($p < 0.0001$). Our patients also reported a significant quality of life improvement after injection.

MP16

Human Detrusor Muscle Strips Display Length Adaptation of Active Tension and an Adjustable Preload Tension

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Introduction: The preload and active length-tension (L-T) curves of most muscles are chronically adjustable but acutely fixed. However, rabbit detrusor smooth muscle (DSM) exhibits acutely dynamic L-Tcurves. The objective of this study was to determine whether human DSM exhibits dynamic L-T curves.

Materials & Methods: Rabbit and human DSM strips were contracted with KCl at increasing lengths until peak active tension (T_{ref}) was identified. Strips were then contracted three times at this length (L_{ref}) and tension measured to assess for adaptation of the active L-T curve. After relaxation, tissues underwent a repetitive loading (stretch from L_{ref} to 1.3-fold L_{ref})-unloading (release back to L_{ref}) protocol. The preload tension thereby lost was a measure of preload tension at L_{ref}. Tissues were frozen before and after the loading-unloading protocol to measure myosin light chain phosphorylation (MLCp).

Results: In strips of human DSM (5 strips from 3 bladders), the 3rd KCl-induced contraction at L_{ref} was ~15% greater than the 1st. A loading-unloading protocol reduced the degree of preload tension at L_{ref} by ~60%, indicating that the contractions generated considerable preload tension. In rabbit DSM, the preload tension loss induced by loading-unloading corresponded with a loss of MLCp.

Conclusions: These data support the hypothesis that human DSM displays acutely adjustable preload and active L-T curves, which may explain the ability of the bladder to contract over a broad volume range. An adjustable preload tension provides a myogenic mechanism for compliance regulation, which if altered, uniquely explains DSM instability.

MP17

Vessel-Sparing Anterior Urethral Reconstruction

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Introduction: We present our outcome with the vessel-sparing urethral reconstruction. The preliminary Excision and Primary Anastomosis series was expanded to include Augmented Anastomosis Urethroplasty.

Materials & Methods: From June 2003 to December 2011, 49 patients underwent vessel-sparing anterior urethral reconstruction. Surgeries were performed by GHJ, KAM and RV, all using the same technique first described in 2007.

Results: Patients' age range was from 3 to 80 years (mean 48). Stricture length ranged from 1 to 15 cm (mean 2.66). Etiologies: congenital in one, hypospadias in one, trauma in 10, iatrogenic in 2, and idiopathic in 35. After a mean follow up of 11.27 months (range 6 to 57), 96% of the patients had a patent urethra, calibrating over 16 Fr. Two patients failed the procedure, requiring either DVIU or dilation, after which all patients were free of symptoms and have not, to date, required further instrumentation.
Four patients were incontinent after the urethroplasty and 3 were implanted with an artificial urinary sphincter, using the transcorporal approach in two of them. One patient received a male sub-urethral trans-obturator sling. Overall complication rate was 22%, including erectile dysfunction, wound infection and urinary tract infection. De novo postoperative ED was 3.7 %.

Conclusion: Preservation of blood supply is a noble achievement in surgery; however, it technically often requires significant effort, and in some instances has not been shown to improve results. The vessel-sparing technique for anterior urethral reconstruction is reproducible and reliable. Larger studies and longer follow up are needed to support these results.

MP18

Female Sexual Dysfunction in Patients with Painful Bladder Syndrome (PBS): Evaluation of the Effect of Body Mass Index (BMI)

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Introduction: Female Sexual Dysfunction (FSD) in patients with Painful Bladder Syndrome (PBS) is well documented. We report herein the data on 344 subjects indexed by the Body Mass Index (BMI) and compare the degree of FSD associated with the disease.

Materials & Methods: Domain values were obtained by using the Female Sexual Function Index (FSFI). Each question in the survey was targeted to a specific indicator of FSD and the answers were rated on a Likert scale. Data were analyzed on an item-for-item basis and by the six domains of FSD for these subjects.

Results: Obese subjects exhibited significantly higher levels of Desire when compared to all other levels of BMI ($P < 0.001$). Subjects with Normal Weight and Overweight BMI's exhibited higher levels of both arousal and satisfaction when compared to both Under Weight and Obese subjects ($p < 0.001$). Significant differences were observed in the domains of Lubrication and Orgasm across all four BMI groups ($p < 0.001$). Subjects in the Normal Weight BMI experienced significantly less pain then those in the Over Weight, Obese and Under Weight BMI ranges ($p < 0.001$).

Conclusions: Individuals with a BMI falling in the Normal Weight range exhibited significantly less FSD associated with PBS. Whether this can be attributed to diet, overall fitness or exercise remains to be evaluated and is a source of ongoing investigation.

Domain (Means +/- St. Dev.)

DOMAIN	Under Weight	Normal Weight	Over Weight	Obese	ANOVA p value
Desire	2.00±0.01	2.09±0.03	2.08±0.03	2.17±0.01	< 0.001
Arousal	1.68+0.09	2.00+0.15	2.00+0.08	1.78+0.09	< 0.001
Lubrication	1.57+0.17	2.24+0.16	2.08+0.16	1.82+0.11	< 0.001
Orgasm	1.95+0.22	2.27+0.13	2.05+0.09	1.84+0.08	< 0.001
Satisfaction	2.29+0.36	2.40+0.23	2.43+0.21	2.02+0.24	< 0.001
Pain	1.14±0.19	1.71±0.18	1.42±0.25	1.40±0.21	< 0.001

MP19

The AdVance Sling Proves Efficacious in Severe Stress Urinary Incontinence in Men Who have Not had Radiation Therapy

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Introduction: Although the AdVance sling is effective in treatment of mild to moderate stress urinary incontinence (SUI), it's use in patients with severe SUI or previous pelvic radiation treatment (RT) remains controversial. We evaluated the efficacy of the AdVance sling in those patients with severe SUI, including previous RT.

Materials & Methods: We retrospectively reviewed the outcomes of men treated with the AdVance sling for SUI. Only patients with severe incontinence, defined as greater than or equal to five pads per day, were selected. Treatment "success" was defined as a safety pad or less (cured) or greater than 50% improvement in pad count (improved).

Results: Sixty-three patients with severe SUI were treated with an AdVance sling. Eighteen (29%) patients had previous RT with a mean of 7.9 years from RT to sling placement. At final follow up, success was 73% and 44% and cure rate was 38% and 17% for the non-RT and RT groups, respectively. Only one patient (non-RT group) had post-operative worsening of SUI. See Table 1.

Conclusions: With a success rate of 73%, the AdVance sling proves efficacious in men with severe SUI without previous RT, rivaling the success of those with mild to moderate SUI in previous studies. Although no worsening of SUI or intra-operative complications was noted, RT was associated with decreased efficacy of the AdVance sling in severe SUI.

Table 1. Group findings

	No radiation (n = 45)	With radiation (n = 18)
Age at AdVance (years)	66.3	72.3
Mean follow-up (months)	26.8	24.8
Pre-op pad count (pads/day)	6.8	6.4
Pad count at last follow-up (pads/day)	2.1	3.5
BMI (kg/m^2)	28.6	27.9
Bladder neck contracture (%)	24	44
Urodynamic findings		
Detrusor overactivity (%)	41	79
Valsalva leak point pressure (cmH2O)	45	40

MP20

Robotic Assisted Ureteral Re-implantation (RAUR): A Case Series

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Introduction: Minimally invasive surgical techniques are currently used for numerous urologic disorders, offering in many cases, decreased morbidity and equivalent outcomes compared to open surgery. There is a relative paucity of data on robot-assisted ureteral re-implantation (RAUR) in adult patients for benign stricture disease.

Materials & Methods: We retrospectively reviewed our recent experience with mid/distal ureteral reconstruction at a single tertiary care center. From 2010-2012, 13 consecutive patients presenting with benign obstruction of mid/distal ureters were managed with RAUR.

Results: In all cases, the operative procedure was undertaken with six-port transpertitoneal access and were completed robotically without open conversion. All ureters (left n = 5, right n = 7, bilateral n = 2) were re-implanted in a standard Bricker fashion into the dome of the bladder with (n = 8) or without (n = 6) a psoas hitch. Mean operative time was 282 (range 174-418) minutes. Mean time until discharge was 2.5 days. Catheters were removed 4-11 days postoperatively and all cystograms were negative for leak. Stents were removed 14-48 days after surgery. One patient had mild hydronephrosis on follow up ultrasound. Average follow up was 10 (range 2-20) months. There were 2 grade I, 2 grade II, 2 grade III and no grade 4 or 5 complications in three patients (23%).

Conclusions: RAUR with or without a psoas hitch is safe and effective. Extensive laparoscopic lysis of adhesions represent the primary challenge to an otherwise straightforward minimally invasive surgery. At out institution, RAUR has replaced open ureteral re-implantation as the preferred treatment for benign mid/distal ureteral stricture disease.

MP21

Genitourinary Trauma in the Elderly: An Economic Analysis

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Introduction: Given the aging population and potential for increased incidence of genitourinary (GU) trauma in the elderly, we sought to investigate the economic implication.

Materials & Methods: Nationwide Inpatient Sample databases 2003-2009 were used. Patients ≥ 18 years admitted emergently and nontransfer-ins, with ICD-9-CM codes for kidney, ureteric, bladder, urethral, penile, scrotal or testicular injury, and at least one E-code, were identified. The cohort was stratified into: 18-64 years (YGUTP) and ≥ 65 years (EGUTP). Further stratification grouped patients according to percent of EGUTPs treated at a single hospital: 0-25%, 26-50%, 51-75%, 76-100%. Costs were estimated from charges, and adjusted for inflation. Generalized linear models compared mean cost of hospitalization between groups, adjusting for patient, hospital, and injury characteristics, treatment (operative/non-operative) and geographic pricing differences.

Results: The 36,156 patient that met all criteria comprised 17,973 (49.7%) YGUTPs and 18,183 (50.3%) EGUTPs. Most were males (82.2%). YGUTPs were more likely to sustain kidney injury (50.8% vs. 7.3%), but less likely to sustain bladder or urethral injuries (44.6% vs. 91.0%) ($p < 0.001$). Overall, the adjusted mean cost for EGUTP was $2,124 (95% CI: $2,028-$2,220) lower than that of YGUTP. Based on percent of EGUTPs treated at a facility, adjusted mean cost was 22% lower (relative cost: 0.78; 95% CI: 0.71-0.85) for 76-100% compared to 0-25%. Mortality was 3.7% and 5.2% ($p < 0.001$) for YGUTP and EGUTP, respectively.

Conclusions: Our study demonstrates overall lower cost for treatment of GU trauma in elderly compared to young patients, and significant cost savings when GU trauma patients are treated at centers caring for high proportion of EGUTPs.

MP22

A Prospective Single Center 4 Year Study of the Efficacy and Safety of the GreenLight Laser HPS in Men with Clinical BPH

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Introduction: To demonstrate safety and long term efficacy of treatment with the 532 nm KTP (120 watt) laser for patients with male lower urinary tract symptoms (LUTS) and clinical benign prostatic hyperplasia (BPH) in a prospective single surgeon study under a unified protocol.

Materials & Methods: A prospective, single-arm study with a single surgeon conducted in the US. Thirty-five consecutive patients were enrolled and 33 underwent treatment with the KTP 532 nm laser. The study included subjects aged > 45 years who were indicated for surgical intervention for obstructive BPH. Subjects are followed at 3 and 6 months, 1 year and annually through 4 years. Mean age was 65.6 +7.7 years.

Results: All actively participating subjects have completed at least 4 years of follow up. Length of stay was 3.9 + 4.4 hrs, length of catheterization 21.7 + 3.2 hrs, procedure time was 55.9 + 23.4 min, and total energy used 189 + 84.8 kJ.
Adverse events were all mild including urgency, dysuria, retrograde ejaculation and hematuria with the exception of 1 bladder neck contracture.

Conclusions: In this single-center prospective single arm study, the 532 nm KTP laser provided 17.2 point (72.3%) improvement in IPSS at 4 years with a commensurate QoL improvement, reduction in PVR and improvement in Qmax, while inducing a volume decrease of 41%. Observed AEs were as expected for surgical ablation of prostate tissue.

Results (mean + SD)

	Pre-op	3 Month	6 Month	2 Year	3 Year	4 Year
IPSS	23.8 (4.7)	7.8 (4.5)	5.0 (3.2)	6.6 (4.5)	6.3 (3.5)	6.6 (4.4)
QoL	4.4 (1.2)	1.3 (1.3)	1.0 (1.1)	1.3 (1.0)	1.0 (1.0)	1.2 (1.2)
Qmax (mL/s)	12.4 (4.9)	21.9 (8.9)	21.0 (8.6)	18.0 (9.0)	17.2 (6.6)	19.0 (7.6)
PVR (mL)	109.8 (81.3)	60.6 (51.3)	69.0 (52.7)	64.7 (38.7)	61.1 (38.7)	60.2 (40.7)
TRUS Vol (cc)	67.2 (31.5)		34.7 (22.8)		39.9 (25.3)	

MP23

Diagnostic Imaging Patterns in Children with Nephrolithiasis Prior to Referral to a Tertiary Children's Hospital

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Introduction: Analyses of administrative databases of children with nephrolithiasis do not capture events that occur prior to referral to a pediatric hospital. Therefore, we characterized the imaging patterns employed by non-children's hospitals (NCH) as compared to a children's hospital (CH) to diagnose nephrolithiasis.

Materials & Methods: We performed a cross-sectional study of all children who were diagnosed with their first episode of nephrolithiasis and treated at a CH from 2003 to 2009. We compared CT and ultrasound (US) utilization, and determined the patient and institutional characteristics associated with each imaging modality.

Results: Of the 222 patients, 161 (73%) presented to an NCH and 61 (27%) presented to a CH. The mean age was 13.1 ± 4.0 years (SD) and there was an even gender distribution. At presentation, CT was used in 141 (88%) and US in 20 (12%) cases at an NCH, and CT was used in 30 (49%) and US in 31 (51%) cases at a CH. Children were more likely to undergo evaluation with a CT scan than US at an NCH ($p < 0.001$). For children at a NCH, 35% had repeat imaging studies, of which 33% were CT. Both patient (gender, race, and age) and institutional (ED volume, availability of US, and presence of urology) characteristics had no influence on imaging choice at an NCH.

Conclusions: When children are diagnosed with nephrolithiasis at an NCH, they are more likely to undergo a CT scan than US. Both patient and institutional characteristics have limited influence on imaging modality selection.

MP24

Identifying Patients with Chronic Urologic Disorders Requiring Transition from Pediatric to Adult Urology Care

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Introduction: Pediatric patients with chronic urologic conditions frequently require lifelong evaluation and treatment. Transition to adult urologic care is of critical importance as these patients mature and goals shift towards sexual function, fertility, and reconstruction. We suspect that a substantial percentage of adult patients followed for congenital or childhood-acquired urologic problems have difficulty making this important transition.

Materials & Methods: We reviewed our electronic record to identify adult patients (age 19 to 35) seen in pediatric urology clinic between January 2007 and July 2012. Patients without a chronic urologic issue were excluded. We identified each patient's primary urologic diagnosis and status with respect to transition of care to an adult urologist.

Results: Four-hundred and fifty 19 to 35 year-old patients were seen in pediatric urology clinic during this time period. Ninety-nine of these had a chronic congenital or childhood-acquired urologic diagnosis. Myelomenigocele (36.4%), spinal cord injury (15.1%), posterior urethral valves (7.1%), and cerebral palsy (5.1%) were the most-common diagnoses. Forty of 99 patients (40.4%) had successfully transitioned to an adult urologist. Fifty-nine of 99 patients (59.6%) were still seen by a pediatric urologist. Only eight of these patients (13.6%) had discussed transition-of-care during a previous visit. Four of these (50%) declined transition and continued to follow-up in pediatric clinic.

Conclusions: Many patients with congenital or childhood-acquired urologic conditions continue to receive care from pediatric urologists into adulthood despite maturation of urologic care needs. This study brings to light the importance of preparing these patients for transition to adult urologic care.

MP25

The Audience Response System as an Educational Tool for Urologic Conferences

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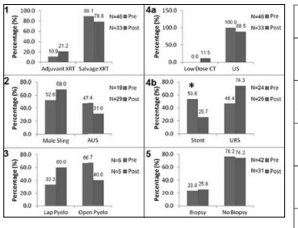
Introduction: Audience Response Systems (ARS) have not been used to gauge knowledge transfer and retention in the setting of large medical conferences. In this study, we explore the utility of an ARS in a large urology conference.

Materials & Methods: At the 2011 joint meeting of the Mid-Atlantic and New England sections of the AUA, attendees used a web-based and cell-phone accessed ARS. 6 ARS questions were asked during 5 point-counterpoint debate topics. Questions were presented by experts from each of the sections (table 1). At the beginning and end of each 15-minute session, attendees used the ARS to select the best management option.

Results: The results of the 6 ARS questions pre and post-presentation are shown in Figure 1. In all questions except #5, at least 10% of participants changed their response, and a > 25% change in response was noted from questions #3 and #4b. A statistically significant change was noted for question #4b ($p = 0.037$).

Conclusions: This is the first study which demonstrates the potential utility of an ARS in a large urology conference. With further research it may be possible to use this technology to identify high-yield topics for medical education and improve outcomes during lecture-based educational activities.



ARS Question & Topic	Case	Management Option 1	Management Option 2
1 Prostate Cancer	An otherwise healthy 65yo man had a radical prostatectomy which revealed Gleason 3+4 prostate cancer, stage PT2c with positive margin	Adjuvant radiation	Salvage radiation if PSA becomes detectable
2 Incontinence	A patient has moderate urinary incontinence 1 yr following radical prostatectomy	Male perineal sling	Artificial sphincter
3 Pediatrics	An infant presents with unilateral severe obstruction at the ureteo-pelvic junction	Robotic pyeloplasty	Open pyeloplasty
4a Stone Disease	A 26wk pregnant woman with a history of nephrolithiasis presents with flank pain	Low dose CT	Ultrasound
4b Stone Disease	You identify a 6mm obstructing stone on imaging	Stent until after delivery	Immediate ureteroscopy
5 Renal Cancer	A 65yo otherwise healthy man presents with a 2.5cm enhancing renal mass on CT	Renal mass biopsy	Observation or intervention without biopsy

Table 1.

12

An Obese Body Habitus Does Not Preclude a Minimally Invasive Partial Nephrectomy

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Introduction: Outcomes of minimally invasive partial nephrectomy (MIPN) in the obese patient population are incompletely defined. We investigate the feasibility of MIPN in obesity class I - III patients via comparison of surgical outcomes to those with a lower BMI.

Materials & Methods: Clinical, radiographic, procedural, and pathologic data were collected for 184 consecutive patients undergoing MIPN via laparoscopic (n = 109) or robotic (n = 75) techniques. Patients were classified into the following patient cohorts stratified by BMI: 1) BMI < 30; 2) BMI 30-35 - obesity class I; 3) BMI 35-40 - obesity class II; 4) BMI > 40 - obesity class III. The association between obesity class and operative duration, EBL, length of stay, complications, and margin status was determined.

Results: 95 men and 89 women with a median age of 55 years, BMI of 31, tumor size of 2.9 cm, and RENAL nephrometry score of 6 were included. Median operative duration was 218 minutes, ischemia duration was 23.5 minutes, EBL was 150 cc, and length of stay was 3.0 days. 6 patients had positive surgical margins. Compared to patients with a BMI < 30, the degree of obesity was not associated with any adverse perioperative or pathologic outcomes. In a multivariate model querying variables associated with complications, only a RENAL nephrometry ≥ 8 was significant.

Conclusions: An increase in obesity classification was not associated with an adverse perioperative or pathologic outcomes related to MIPN. The presence of an obese body habitus alone should not preclude offering appropriate patients a MIPN.

13

Critical Analysis of 30-day Complications Following Radical Nephroureterectomy for Upper-Tract Urothelial Carcinoma

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Introduction: Radical nephroureterectomy (RNU) remains the gold standard for managing upper-tract urothelial carcinoma (UTUC). Perioperative complications following RNU are incompletely defined in the literature. We critically review 30-day events following RNU to define the incidence and risk factors associated with complications.

Materials & Methods: Records of 92 consecutive patients undergoing RNU were reviewed. Complications occurring within 30-days of surgery were graded using the modified Clavien-Dindo scale. The number, severity, and type of complications were recorded. Minor complications were classified as Clavien II or less, while major were Grade III or greater. Univariate and multivariate analyses determined variables associated with complications.

Results: 57 men and 35 women with a median age of 70 years were included. Three-quarters of the cohort underwent a minimally invasive RNU and 45% had a regional LND. Final pathology noted that 53% had muscle-invasive and 70% had high grade UTUC. Overall, 35 patients (38%) experienced complications within 30-days of RNU including 11 (12%) with major complications. On univariate analysis, patient age, ECOG performance status, surgical approach, non-organ confined disease, and cardiac history were associated with complications. In a multivariate model including these variables, only ECOG ≥ 2 (OR 3.9, 95% CI 1.6-7.4, $p < 0.001$) was independently associated with post-RNU complications.

Conclusion: Almost 40% of patients in this cohort experienced a complication within 30-days of RNU. One-third were major complications. Poor performance status conferred a four-fold greater risk of a perioperative complication. Such knowledge may guide appropriate patient counseling as well as surgical expectations for the postoperative period.

14

High Grade Prostatic Intraepithelial Neoplasia or Atypia on Prostate Biopsy are not Predictors of Pathologic Upstaging in Patients who are Eligible for Active Surveillance

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Introduction: Several criteria have been proposed to identify candidates for active surveillance (AS). However, the significance of concomitant high-grade prostatic intraepithelial neoplasm (HGPIN) and prostate atypia on eligible patients is not known.

Materials & Methods: We identified patients with low risk prostate cancer (Gleason score ≤ 6, stage T1c-T2a, & PSA ≤ 10) on ≥ 10 core biopsy who underwent radical prostatectomy (RP) at our institution from 1991-2005 who were eligible for AS by Epstein criteria (low risk with PSA density ≤ 0.15 & ≤ 50% involvement of any core) or NCCN criteria (low risk with ≤ 3 positive cores & ≤ 50% involvement of any core). Pathological outcomes from RP were compared to determine if HGPIN or atypia impacted the risk of being upstaged to adverse pathology after RP.

Results: 235 (42%) patients met Epstein criteria & 400 (72%) met NCCN criteria. Within each AS cohort, HGPIN was present in 32% and atypia in 12%. When comparing those with HGPIN to those without it, there was no significant difference with regard to pathologic stage, pathologic Gleason score, estimated tumor volume, extracapsular extension, lymph node invasion, seminal vesicle invasion, upstaging, upgrading, or 5-year biochemical recurrence in either AS cohort. Similarly, no differences were seen for these outcomes when comparing AS candidates with atypia to those without it.

Conclusions: Concomitant HGPIN or atypia in patients meeting Epstein or NCCN criteria did not have worse RP outcomes and should not affect AS eligibility. However, it has yet to be determined whether HGPIN or atypia impact progression on AS.

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Peri-Procedural Povidone Iodine Rectal Preparation Reduces Infectious Complications Following Ultrasound-Guided Needle Biopsy of the Prostate

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Introduction: To evaluate if peri-procedural povidone iodine rectal preparation (PIRP) prior to transrectal ultrasound-guided prostate needle biopsy (TRUS-PNB) can reduce rectal microorganism colony counts and infectious complications.

Methods: Our institutional TRUS-PNB database was reviewed to identify infectious post-biopsy complications. Outcomes between 2 contemporary cohorts were compared. Cohort A consisted of 423 men receiving only pre-operative oral and/or parenteral antibiotics. Cohort B included 108 patients receiving peri-procedural PIRP in addition to standard pre-operative antibiotics. Adverse reactions to the PIRP were recorded. Rectal cultures were obtained in some Cohort B patients to quantify changes in microorganism colony counts.

Results: 531 men with a mean PSA of 10.6 ng/mL undergoing TRUS-PNB were included. 71% were undergoing initial biopsy and 16% had a history of antibiotic use within the previous 6 months. There were no differences in baseline or biopsy characteristics between the two cohorts. A reduction in the incidence of culture positive febrile infections were noted in Cohort B (0 of 108; 0%) compared to those in Cohort A receiving standard of care prophylaxis (8 of 423; 1.9%). No adverse effects of the PIRP were reported. Rectal cultures obtained in 50 men before and after PIRP administration noted a 96.5% reduction in microorganism colonies (1.9×10^5 CFU/mL vs. 6.6×10^3 CFU/mL, $p < 0.001$).

Conclusions: Peri-procedural povidone iodine rectal preparation significantly decreased microorganism colony counts and effectively reduced infectious complications following TRUS-PNB. This safe, cheap, and simple strategy may be a reasonable alternative to targeted antibiotic therapy to reduced post-biopsy infections.

16

Synthetic Lethality of Prostate Cancer Cells by Inhibiting Androgen Receptor and Mevalonate Pathways

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Introduction: Metastatic prostate cancer often progresses to castrate-resistance requiring new anti-cancer treatment investigation such as synthetic lethality. MDV3100 (enzalutamide) is a new oral androgen receptor (AR) inhibitor with increased affinity, inhibits nuclear translocation, and approved for castrate-resistant prostate cancer. We explored the synthetic lethal effect on prostate cancer LNCaP cells by inhibiting AR pathway and mevalonate pathway.

Materials & Methods: LNCaP cells were treated with MDV3100, atorvastatin, and combination of the drugs. Effects of the inhibitors on cell proliferation and cellular mitogenic and survival signaling were examined by cell counting, MTT assays, Western blots, and RT-PCR.

Results: LNCaP cells treated with MDV3100 showed dose dependent inhibition of cell proliferation. While treated with MDV3100 or atorvastatin alone did not cause a significant inhibition of LNCaP cell growth, treated with both MDV3100 and atorvastatin showed a striking synergistic inhibitory effect on cell proliferation and caused significant cell death. Immunoblotting revealed atorvastatin alone increased phosphorylation of Akt and expression of PSA, which may reflect adaptation of cells to atorvastatin-induced cytotoxicity by enhancing Akt and AR signaling. Addition of MDV3100 to atorvastatin effectively down-regulated phosphorylation of Akt and expression of PSA. This effect of MDV3100 was consistent with synergistic effect with atorvastatin on cell proliferation.

Conclusions: Our study showed increased lethality to LNCaP cells with combination of MDV3100 and atorvastatin than either alone suggesting synthetic lethal interaction of the AR signaling and mevalonate pathway. Clinically, addition of a statin with MDV3100 may show improved outcomes for advanced prostate cancer therapy.

17

Pathology at Radical Prostatectomy of Men Eligible for Active Surveillance: Impact of Gland Size

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Introduction: To compare the impact of gland size on radical prostatectomy (RP) features on patients who met criteria for active surveillance(AS).

Materials & Methods: We queried our institutional RP database for pathologic data on prostatectomy specimens from 1991 to 2012. Eligibility Criteria: Gleason 3+3 disease in ≤ 3 positive cores with no core having more than 50% tumor involvement; PSA < 10, and clinical stage ≤ T2a. We divided patients into two groups: gland size measured at TRUS biopsy ≥ 60 or < 60 grams.

Results: We identified 597 men from 3097 RP specimens who met eligibility criteria for AS and had gland size measured. Patients with smaller glands had an increased rate of pT3 disease (12.3 vs 5.4%) and positive margins (21.2 vs 12.6%). No statistically significant differences were seen between the two groups at final pathology with respect to the percent with: T4 disease, primary Gleason sum of 7 or more, seminal vesicle involvement (SVI), biochemical recurrence (BCR), or those with primary Gleason 4/5.No patients in either group had nodal disease.

Pathologic features of candidates for active surveillance.

	Equal to or greater than 60 grams	Less than 60 grams	P value
# of patients	470	127	
Mean age	58.8	61.6	
pT3 disease	12.3% (58)	5.4% (7)	0.03
pT4 disease	0.6% (3)	0% (0)	0.37
Gleason sum 7 or greater	29.5% (130)	23.6% (30)	0.36
SVI	1.4% (7)	0% (0)	0.16
Positive margins	21.2% (100)	12.6% (16)	0.03
Biochemical recurrence	16.4% (77)	12.6% (16)	0.30
% with Gleason 4 or 5 on final pathology	4.0% (19)	2.4% (3)	0.36

Conclusions: Smaller gland size is predictive of pT3 disease and positive margins at RP. Larger glands are adequately sampled by standard biopsies.

18

A Prospective Comparison of Quality of Life Outcomes of Cryoablation Versus Brachytherapy in Prostate Cancer Treatment

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Introduction: Quality of life (QoL) outcomes are an essential concern among patients undergoing prostate cancer treatment. A longitudinal comparison using validated QoL instruments is valuable in evaluating outcomes. We assess the impact that primary cryotherapy (cryo) and brachytherapy (BT) as primary treatment for prostate cancer has on QoL in patients using a validated QoL instrument.

Materials & Methods: We retrospectively reviewed the outcomes of men who received primary cryoablation or brachytherapy for prostate cancer. QoL data was collected prospectively within our institution's QoL database. Each patient completed the UCLA, Prostate Cancer Index prior to treatment and at intervals for up to 60 months after treatment. Domains included in the questionnaire were urinary function (UF), urinary bother (UB), general urinary function (GUF), bowel function (BF), bowel bother (BB), sexual function (SF), sexual bother (SB), and AUA symptom score. Outcomes were based on percent of baseline score (PBS) at final follow up.

Results: 357 patients met criteria with a mean follow up of 43 and 40 months for cryo and BT, respectively. Cryo had greater PBS in urinary QoL parameters while BT had improved PBS in sexual parameters. Bowel QoL was similar for both cryo and BT. See Table 1.

Table 1, Percent of Baseline Scores

	n	Mean percent of baseline score brachytherapy	n	Mean percent of baseline score cryotherapy	p value
UF	179	87	169	93	p = 0.02
UB	158	90	158	94	p = 0.19
GUF	171	95	169	105	p = 0.03
AUA	167	107	158	184	p = 0.0008
BF	180	106	169	103	p = 0.93
BB	171	93	157	95	p = 0.75
SF	107	65	57	41	p < 0.0001
SB	112	80	91	66	p = 0.06
*Baseline scores < or = 30 were excluded					

Conclusions: At a follow up of over 40 months, cryotherapy offers less urinary side effects but greater sexual side effects versus that of brachytherapy for primary treatment of prostate cancer.

19

Long Term Outcomes and Reoperations Following Sacral Neuromodulation for Voiding Dysfunction: 8-year Experience at a Single Center

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Introduction: Sacral neuromodulation (SNM) is gaining popularity in the treatment of refractory voiding dysfunction. Currently, there are few reports discussing long-term outcomes including success rates and the need for reoperation/revision. We present an analysis of our outcomes in 300 patients over an 8-year period by a single surgeon at a single institution. To our knowledge, this is the largest SNM patient experience reported to date.

Materials & Methods: We retrospectively reviewed our InterStim® database to analyze outcomes and need for revision, reimplantation or explantation from 2004-2012.

Results: 300 patients have undergone InterStim® implantation at our institution over the previous 8 years. 259 women (mean age 49 years) and 41 men (mean age 55 years) underwent Interstim® placement for the following indications: frequency/urgency (44%), urgency with incontinence (35%), and nonobstructive urinary retention (20%). Other indications included nocturnal enuresis, fecal incontinence, and pelvic pain, with one patient undergoing SNM for each. Median follow up after implantation was 31.5 months (range 0-97 months), with 174 patients maintaining current follow-up. Our reimplantation and explantation rates were 24% and 20% respectively - reimplantations occurred most commonly for battery failure (n = 25) and lead migration (n = 24), while explantations occurred most commonly for poor response (n = 16) and device erosion (n = 14). The average time to reimplantation for battery failure was 56 months (median 60 months).

Conclusions: Based on our single-center experience of 300 patients over 8 years, patients can expect a 20-25% chance of revision or explantation. Additionally, patients will likely need to undergo battery replacement approximately 5 years following implantation.

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Effect of Transobturator Mid-urethral Sling Placement on Urgency and Urge Incontinence

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Introduction: We previously reported that TVT-O placement is associated with cure or improvement of urgency (U) and urge incontinence (UUI) in a significant portion of patients at 6-week follow up. This study comprises intermediate-term follow up to examine whether the beneficial effect of TVT-O placement on urgency symptoms persists through minimum 12-month follow up.

Methods: One hundred patients undergoing TVT-O placement were prospectively assessed using 3-day bladder diary, combined with multiple validated incontinence questionnaires focusing on UUI, U and QOL.

Results: At 12-month follow up, data were assessed in 87 patients, with 11 patients lost to follow up and 2 patients withdrawing from study participation. In comparison of baseline and 12-month outcomes, improvements in daily pad use (2.6 to 0.9) and incontinence episodes (3.6 to 0.7) were seen ($p < 0.05$). Sixty-eight patients (78%) reported cure of stress incontinence. ICIQ-FLUTS domain item score for UUI improved from 2.0 (± 1.1) to 1.0 (± 1.1) ($p < 0.001$), with 32% and 31% of patients reporting score resolution and improvement, respectively. Similarly, mean Urinary Perception Score improved from 10.1 (± 4.4) to 6.7 (± 4.5) (p 0.05). A statistically significant correlation between UUI and U scores and IIQ-7 scores was observed ($p < 0.05$).

Conclusion: TVT-O placement is associated with cure/improvement of UUI/U in a significant proportion of patients. Further, improved UUI/U outcomes are associated with improved quality of life. These findings appear to be durable through 12-month follow up.

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AdVance™ Transobturator Male Sling for Post-Prostatectomy Incontinence: Effect of Radiation on Objective Outcome and Patient-Perceived Satisfaction

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Introduction: Prior radiation has been sited as a risk factor for failure in transobturator sling treatment of post-prostatectomy incontinence, however data are still lacking. We examine the role that adjuvant radiation therapy plays in sling success.

Materials & Methods: This was a retrospective chart review for men undergoing AdVance™ sling placement for postprostatectomy incontinence at our institution from 2007 to present. Sling success was measured by pad per day use (ppd), EPIC questionnaire, and patient satisfaction. Outcomes in men who received radiation were compared to non radiated men.

Results: A total of 52 men underwent AdVance™ sling placement for post-prostatectomy incontinence at our institution from 2007 to present, 18 men received adjuvant radiation. 36 men were available for postoperative interview. Mean follow up was 19.4 months. Overall, significant improvement was seen in post-sling EPIC score (24.6, $p < 0.001$), EPIC Incontinence score (39.1, $p < .001$), and pad use (3.2 ppd to 1.4 ppd, $p < .001$). There was more significant improvement in EPIC score, pad use, and overall satisfaction in non-radiated men as compared to radiated men (Table 1).

Radiation effect on transobturator sling success

	Improvement in PPD	Improvement in overall EPIC score	Improvement in EPIC incontinence score	Patient satisfaction
Radiation (n = 14)	1.1 (3 to 1.9 ppd)	15.4	22.7	64%
No Radiation (n = 22)	2.3 (3.3 to 1 ppd)	30.5	49.6	95%
	p < 0.05	p < 0.05	p < 0.05	

Conclusions: Significant improvements in EPIC score and pad use can be seen in 92% of patients undergoing the AdVance™ sling procedure at our institution. Radiation was a risk factor for reduced improvement in EPIC scores and lower patient satisfaction rates.

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Buccal-Mucosa Graft Perineal Urethrostomy

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Introduction: To present the outcome of urethral reconstruction to a perineal urethrostomy augmented with a single Buccal Mucosa Graft (BMG).

Materials & Methods: The proposed is a retrospective observational study of all adult patients who underwent urethral reconstruction to a perineal urethrostomy with the use of a single buccal mucosal graft between January 1, 1999 and December 31, 2010, and had at least one post-operative follow up visit. All surgeries were performed by 3 surgeons, which applied the same technique (GHJ, KAM, and RV).

Results: A total of 57 patients were included in the analysis. Patients' age range from 27 to 81 years (mean 59). Stricture length ranged from 4 to 20 cm (mean 15, 22). Etiologies included unknown in 27, Hypospadias in 9, Lichen Sclerosus in 8, iatrogenic in 7, Fournier in 3, urethral cancer in 2 and penile cancer in 1. Mean follow up was 42 months (R 6.43 to 119). Overall success was 91%. Five patients had recurrence, of which two had a successful redo urethrostomy, two are being managed with periodic dilations and one patient died of another cause.

Conclusions: BMG perineal urethrostomy is a valid alternative for complex urethral strictures due to Lichen Sclerosus, previous failed reconstructions or hypospadias cripples. Midterm results are encouraging for this novel technique.

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Antibiotic Prophylaxis for GU Endoscopic Procedures in Patients with Spinal Cord Injury: Results of a Randomized Trial

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Introduction: The patient with spinal cord injury (SCI) is especially vulnerable to infections and septicemia stemming from urologic procedures. There have been limited studies that have explored antibiotic prophylaxis in the SCI population. Therefore, we designed a randomized controlled trial to compare a standard 5-day to a single dose of prophylactic antibiotics in patients with SCI and bacterial colonization of the urine to evaluate the safety and efficacy prior to endoscopic GU procedures.

Materials & Methods: Sixty persons with SCI scheduled to undergo elective endoscopic urologic procedures were randomized to receive either a single pre-procedural dose or a full 5-day course of prophylactic antibiotics. Complications and patient satisfaction surveys were recorded pre-and-post procedure and analyzed.

Results: There were no significant differences in vital sign measurements, WBC and patient satisfaction between patients randomized to short-course vs. long-course antibiotics. There were no increases in adverse effects from short-course antibiotics. The short-course group had a lower mean cost ($3.62 ± 6.14 vs. $33.07 ± 47.59, $p = 0.013$) and shorter length of stay (1.06 ± 0.34 days vs. 4 ± 1.53 days, $p < .0001$) compared with the long-course group. Additionally, there was a significant pre-procedural anxiety noted in individuals randomized to long-course antibiotics (17.86% vs. 0, $p = 0.010$).

Conclusions: Our findings suggest that short-course prophylactic antibiotics for endoscopic urologic procedures may be as safe and effective as long-course prophylactic antibiotics in persons with SCI and bacterial colonization of the urine.

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Impact of the USPSTF D Recommendation: Early Assessment of Referrals for Elevated PSA and Prostate Biopsies in a LUGPA Following Statement Revision

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Introduction: In October 2011, the U.S. Preventative Services Task Force (USPSTF) posted for public comment the draft of their recommendation against PSA-based prostate cancer screening. Extensive media coverage and discussion ensued. The formal statement of a D recommendation was released in May 2012. While the potential implications of the USPSTF recommendation upon prostate cancer screening will take years to manifest, the early impact of their recommendations upon the market is evaluable.

Materials & Methods: The electronic medical record of a large urology group practice (LUGPA) composed of 32 providers was queried for two variables: number of referrals for an elevated PSA and number of individuals who underwent a prostate biopsy. A control period of October 2010-September 2011 was selected and compared to October 2011-September 2012, the twelve month period beginning with release of the USPSTF draft against PSA-based prostate cancer screening.

Results: From October 2010 to September 2011, 28698 patients were evaluated for an elevated PSA by 32 urologists; from October 2011 to September 2012, 25075 patients were evaluated by the same number of physicians, a difference of 12.6%. From October 2010 to September 2011, 2465 patients underwent a prostate biopsy; from October 2011 to September 2012, 1989 had a biopsy, a difference of 19.3%.

Conclusions: A marked decrease in the number of patients referred to a LUGPA for evaluation of an elevated PSA, and an even greater decrease in the number of prostate biopsies performed, occurred in the 12 months following release of the USPSTF D recommendation.

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Disparities in Disease Characteristics Between Caucasians (CAU) and African Americans (AA) with Asymptomatic or Minimally Symptomatic Metastatic Castration-resistant Prostate Cancer (mCRPC) Receiving Sipuleucel-T: Data from PROCEED

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Introduction: PROCEED is an ongoing, multicenter, phase 4 registry enrolling patients with asymptomatic or minimally symptomatic mCRPC receiving sipuleucel-T. One registry objective is to accrue AA men in order to gain insight into treatment patterns and exposure to investigational therapies in ethnic cohorts.

Materials & Methods: Patients who were treated with sipuleucel-T within the prior 6-months were eligible to participate in PROCEED. Signed consent and data were collected with a cutoff date of 11/2012.

Results: Of 934 pts enrolled, 87.5% were CAU, 10.3% AA, and 1.9% other. Median age was similar between ethnic groups (CAU 72.0 yrs, AA 71.0 yrs); however age distribution appeared different with 20.6% CAU ≥ 80 yrs-old vs. 10.4% AA. AA had higher ECOG-PS scores (ECOG-PS ≥ 1, 39.6% AA vs. 29.4% CAU; p = 0.047) and higher median PSA (AA 33.0 ng/mL vs. CAU 18.3 ng/mL; p = 0.070). Extent of metastatic bone disease was similar between groups, but AA appeared to have a higher rate of visceral metastases (AA 8.3% vs. CAU 5.4%; p = 0.243). Prior treatment with an investigational therapy was more frequent in CAU vs. AA (CAU 4% vs. AA 0%; p = 0.041); this difference appeared unrelated to co-morbidities (≥ 1 co-morbidity, AA 81.3% vs. CAU 77.8 %; p = 0.514).

Conclusions: AA men in PROCEED appear to present for sipuleucel-T therapy at a younger age with poorer performance status, higher PSA, and a higher rate of visceral metastases. The AA group was also less likely to receive investigational agents prior to sipuleucel-T.

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Imaging in Renal Cell Carcinoma Surveillance: Economic Excess?

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Introduction: The increasing economic burden of healthcare in the U.S. has made it crucial to reduce costs and treatment redundancy. Recommendations regarding surveillance imaging for renal cell carcinoma (RCC) recurrence following partial nephrectomy (PN) are not specific regarding modality or timing. We hypothesized that imaging frequency and modality would vary greatly amongst providers. We sought to identify PN surveillance patterns and costs.

Materials & Methods: We analyzed patients undergoing PN for histologically confirmed RCC from 2009-2010 with documented thirteen month follow up. Patient demographics, glomerular filtration rate, tumor size, histologic subtype, imaging frequency/modality, and recurrence were identified. Costs were calculated based on 2012 Medicare reimbursement rates.

Results: Twenty-seven of the eighty-eight patients having PN had RCC and adequate follow up. Average tumor size was 3.0 cm. Table 1 depicts the surveillance strategies. Follow up intensity was variable with 52% (14/27) having three or more imaging studies within the first year. For these patients, the average cost was $859.58 and $505.35 for the remaining patients. No recurrences were detected during the first thirteen months. We identified no significant correlation between imaging costs and tumor size (r = 0.133).

Table 1: Surveillance strategies

Surveillance Strategy	N
MRI	1
CT	4
Ultrasound	1
MRI + CXR	1
CT + CXR	10
CXR + Ultrasound	1
CT + Ultrasound	5
CXR + CT + Ultrasound	2
CXR + CT + Ultrasound + MRI	2

Conclusions: Although most patients had small, clear cell carcinomas, there was no standardized surveillance strategy. Higher intensity surveillance was nearly twice as expensive and provided no benefit in terms of recurrence detection. Consensus for a standardized, cost-effective, and efficacious surveillance strategy is necessary.

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Treatment Delay for Muscle Invasive Bladder Cancer: Implications for Regionalization of Care

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Introduction: Hypothesizing that regionalization of care may delay timely treatment in patients with muscle invasive bladder cancer (MIBC), our objective was to identify the association between hospital type and treatment delay ≥ 3 months using a large national tumor registry.

Materials & Methods: Using the National Cancer Database, all patients with stage ≥ II urothelial carcinoma treated with radical cystectomy (RC) from 2003-2010 were identified. Hospitals were categorized by type and highest RC volume tercile into community, comprehensive low (CLV) or high volume (CHV), and academic low (ALV) or high volume (AHV) groups. Generalized estimating equations were used to test the association between hospital category and treatment delay (from diagnosis to RC or neoadjuvant chemotherapy), adjusting for year, demographic, and clinical/pathologic characteristics.

Results: Of 22,251 patients identified, 14.2% of patients experienced a treatment delay of ≥ 3 months. Further, this proportion increased over the study period (13.5% [2003-2006] versus 14.8% [2007-2010], p = 0.005). 17.8% of patients treated at AHV hospitals experienced a delay to definitive treatment compared to ALV (16.0%), CHV (11.6%), CLV (11.8%), and community (12.3%) hospitals respectively (p < 0.001). Following adjustment, patients were more likely to experience a treatment delay when treated at AHV (OR 1.4 [CI 1.1-1.7]) and ALV (OR 1.2 [CI 1.03-1.5]) hospitals compared to community hospitals.

Conclusions: Patients with MIBC were more likely to experience a treatment delay of ≥ 3 months if treated at AHV hospitals. Strategies to expedite timely treatment in patients who are referred to academic high volume centers are necessary to improve quality of care.

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Factors Influencing the Length of Stay after Radical Cystectomy: Implications for Cancer Care and Perioperative Management

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Introduction: Radical cystectomy (RC) is associated with perioperative complications, readmissions, and a prolonged length of stay (PLOS). Length of stay (LOS) is often considered a healthcare quality indicator, with increasing importance in reform discussions. Our objective was to investigate the perioperative factors that influence LOS following RC and explore the impact on outcomes.

Materials & Methods: We retrospectively reviewed patients undergoing RC for urothelial bladder cancer at our institution from 1997 to 2009. Perioperative variables were analyzed using univariate and multivariable analysis to identify predictors of a PLOS, defined as LOS ≥ 12 days. Complications were classified using a modified Clavien system. Outcomes of adjuvant chemotherapy use, 90-day readmissions, recurrence free survival (RFS), and overall survival (OS) were compared between LOS < 12 days and PLOS ≥ 12 days. Fine-Gray competing risk analysis was used to calculate cancer-specific mortality (CSM).

Results: 330 patients were included in the analysis (median LOS = 9 days [IQR = 8-11]), of which 83% (n = 274) had a LOS < 12 days (median = 8 d [IQR = 7-10]) and 17% (n = 56) had a PLOS ≥ 12 days (median = 16 d [IQR = 13-21.5]). On univariate and multivariate analysis, only female gender, older age, and perioperative complications were associated with PLOS. No difference was seen for CSM, RFS, readmissions, or chemotherapy. However, OS was significantly worse for PLOS ≥ 12 days (median OS = 27.7 vs. 45.6 months [p = 0.046]; HR = 1.53 [95% CI = 1.01-2.33]).

Conclusions: Both female and elderly patients should be counseled preoperatively about their increased risk of a PLOS after RC. Patients who experience a PLOS ≥ 12 days are at greater risk for subsequent mortality from non-bladder cancer causes.

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Molecular Imaging of Dendritic Cell Trafficking in vivo in a Murine Prostate Cancer Model

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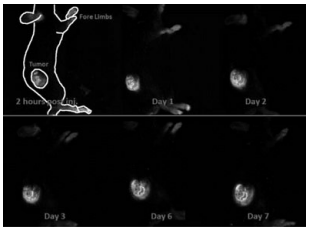
Introduction: Optimization of cell based immunotherapy of malignant diseases may be achieved by tracking immune effector cells. Multi-spectral fluorescence imaging (MSFI) provides an ideal platform for cell tracking. Our goal was to use MSFI to observe the movement of dendritic cells (DCs) in a murine prostate cancer model.

Materials & Methods: Cell luminescent cell viability assays were performed on murine bone marrow derived DCs exposed to varying concentrations of 1,1'-dioctadecyltetramethyl indotricarbocyanine iodide(DIL), a fluorescent reagent. The optimal concentration was identified. Four groups of C57B-6 mice were then injected with mature or immature DCs via the tail vein(IV) or subcutaneous(SQ) routes. Two additional sets of C57B-6 mice were given SQ RM-1 cells to mimic prostate cancer and were injected intratumorally, SQ and IV with mature DCs. All mice were then imaged before and after dissection.

Results: DC viability peaked at 120 µg/mL DIL, and ex vivo imaging confirmed the persistence of fluorescence at 1, 3, and 7 days. In non-tumor bearing mice, the SQ cohort revealed a higher uptake in the lymph nodes in comparison to the IV subset. SQ injections in tumor bearing mice revealed high signal uptake in both the lymph nodes and tumor.

Conclusions: We have developed a model for analyzing DC trafficking in vivo from a fluorescent imaging platform. Our research suggests that mature DCs track to local lymph nodes and tumor sites in significant numbers with SQ injection.



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Predictors of Post-Vasectomy Semen Analysis Compliance and Testing Results

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Introduction: To determine sterility following vasectomy, men are requested to perform a post-vasectomy semen analysis (PVSA). Compliance with testing has been poor historically with up to 50% of patients not completing testing. This study was designed to describe PVSA testing compliance at a rural medical center and predictors for those completing PVSA testing and their results.

Materials & Methods: The medical records of patients undergoing vasectomy by two urologists from December 2009 to August 2012 were reviewed. Patients were instructed to provide a semen sample three months following their vasectomy. Demographics, PVSA testing, and results were recorded in a database and analyzed with student's t test and comparison of frequencies for statistical analysis.

Results: During the study period, 230 patients underwent vasectomy with 106 (46%) completing a PVSA. For those completing a PVSA versus not, median age was 36.4 and 36.5 years old (p = 0.92), married status 88.7% and 71% (p = 0.001), and presence of children 93.4% and 96.8% (p = 0.23), respectively. Of those completing a PVSA, 38 patients (35.8%) had positive findings (motile or non-motile sperm). Differences in age, time interval between procedure and PVSA, married status, and presence of children were not significantly associated with PVSA results. Negative PVSA trends were noted for longer time interval, married status, and surgeon one.

Conclusions: Compliance with post-vasectomy testing remains poor, especially in a rural health setting. Completion of PVSA testing is related to marriage status and PVSA results may be affected by time interval to testing, marriage status, and surgeon's technique.

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Shock Wave Lithotripsy vs. Ureteroscopy for the Management of Proximal Stones in the Community Setting

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Introduction: Endoscopic technological advancements have led to recent data showing ureteroscopy and shock wave lithotripsy (SWL) to have comparable stone free rates for proximal calculi > 10 mm. The current AUA guidelines state both are acceptable treatment options, a change from previous recommendations. We compared SWL and ureteroscopy in a modern cohort of patients in a community based, private practice setting.

Materials & Methods: Retrospective review identified a matched cohort of 25 patients with proximal ureteral or renal stones measuring at least 10mm, who underwent ureteroscopy (12) or SWL (13) from January 1st to December 31st 2012. Stone size and number of treatments were evaluated.

Results: Average stone size was 13.76 mm and 13.83 mm for SWL and ureteroscopy cohorts respectively. In the SWL cohort, nine patients (69.2%) were pre-stented, eight (61.5%) required a second treatment and three (23%) a third treatment. Four (50%) underwent repeat SWL and three required subsequent ureteroscopy. Four (50%) patients underwent ureteroscopy after initial SWL and none required a third procedure. In comparison, six (50%) patients were pre-stented in the ureteroscopy group, three (25%) required second ureteroscopy and none required a third procedure.

Conclusion: In our study, ureteroscopy demonstrated better efficacy for large proximal calculi when compared with SWL. Overall, these patients required fewer procedures thereby utilizing fewer resources. Recent studies from large academic institutions endorsed ureteroscopy as the more cost-effective treatment option. In our cost conscious healthcare environment and based on our data, ureteroscopy may be considered as first line treatment for upper tract calculi > 10 mm in the community setting.

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The Effect of Testosterone on Kidney Stone Risk Factors

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Introduction: Nephrolithiasis has a two to three-fold higher prevalence in males compared to females. While the mechanism of this difference is not completely elucidated, basic science research points to the role of testosterone (T). We examine the link between serum T and stone risk factors, particularly those found in a 24-hour urine sample.

Materials & Methods: We prospectively followed 27 patients with nephrolithiasis on whom serum T, free T and 24-hour urine were collected. Univariate and multivariate regression analysis were performed to find the relationship between testosterone and urinary stone risk factors. Statistical analysis was performed using SAS (Cary, NC).

Results: Of the 27 patients who had serum T drawn, 14 patients underwent one 24-hour urine measurement. Mean total T was 347.2 (SD +/- 164.2) and mean free T was 6.6 (SD +/- 3.1). There was a negative correlation between total T and urine citrate ($p < 0.05$) (Figure 1), and a positive correlation between free T and urine pH ($p < 0.05$).

Conclusions: To our knowledge, this is the first study to analyze the relationship between serum T and stone risk factors in 24 hour urine samples. The negative correlation between serum T and urine citrate further supports the link between male sex and stone risk.

Figure 1: Relationship between serum total T and 24-hour urine creatinine.

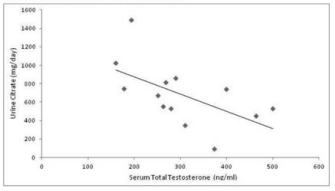
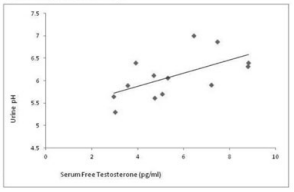


Figure 2: Relationship between free T and urine pH.



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Creatinine to Weight Ratio as the Criterion of Adequacy of 24-Hour Urine Studies for Renal Stone Prevention: A Large Single-Center Series

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Introduction: Proper interpretation of 24-hour urines with abnormal or "inadequate" Cr/kg ratios has been recently questioned. We sought to determine if data from our large cohort of stone-formers confirmed limitations of this measure.

Materials & Methods: Initial 24-hour urine studies (1/2006-8/2012) for 2,956 non-cystinuric adult stone-formers (M = 1618 , F = 1338) were examined. Patients were stratified into low, expected and high Cr/kg ratio using Litholink reference ranges (18.0-24.0 mg/kg for males; 15.0-20.0 mg/kg for females).

Results: 51.2% of patients fell outside of the Cr/kg reference ranges. Median age increased as Cr/kg decreased, with a 15 year difference between low (59) and high (44) groups. BMI and weight both increase as Cr/kg decreases. Most variables differed significantly depending on Cr/kg group (Table). However, no significant difference was found in oxalate concentration and calcium oxalate super-saturation between groups.

Table 1

	Low ratio (M < 18; F < 15)	Expected ratio	High ratio (M > 24; F > 20)	Kruskal-Wallis p value
# of patients (n = 2956)	966 (32.7%)	1444 (48.8%)	546 (18.5%)	
Age	59 (49/67)	51 (41/61)	44 (33/53)	< 0.001
Weight (kg)	90.0 (77.1/105.2)	83.9 (70.8/97.5)	76.2 (63.5/88.5)	< 0.001
Body Mass Index (BMI)	30.78 (27.1/36.28)	27.98(24.82/31.57)	25.67 (22.49/28.79)	< 0.001
Creatinine (mg/d)	1247 (989/1554)	1642 (1283/1967)	1970 (1456/2381)	< 0.001
Volume (L)	1.47 (1.05/2.07)	1.66 (1.20/2.21)	1.90 (1.39/2.44)	< 0.001
Super-saturation calcium oxalate	7.05 (4.35/9.81)	7.30 (5.00/9.99)	6.81 (4.88/9.45)	0.053
Super-saturation calcium phosphate	0.855 (0.349/1.722)	1.176 (0.557/2.099)	1.356 (0.711/2.333)	< 0.001
Super-saturation uric acid	0.812 (0.300/1.727)	0.797 (0.322/1.575)	0.651 (0.278/1.377)	0.011

Table 2

	Low ratio (M < 18; F < 15)	Expected ratio	High ratio (M > 24; F > 20)	Kruskal-Wallis p value
Calcium (mg/d)	163.4 (102.4/240.9)	212.5(138.2/294.0)	238.9 (158.3/331.2)	< 0.001
Calcium conc. (mg/L)	111.1 (68.3/171.9)	132.1 (84.8/187.7)	128.9 (87.2/187.5)	< 0.001
Oxalate (mg/d)	31.9 (25.1/40.5)	34.5 (27.4/43.8)	37.8 (30.7/48.5)	< 0.001
Oxalate conc.	22.1 (16.4/29.3)	22.1 (16.4/29.0)	21.1 (16.1/28.0)	0.279
Uric acid (mg/d)	0.524 (0.414/0.677)	0.649 (0.512/0.800)	0.742 (0.578/0.939)	< 0.001
Citrate (mg/d)	497.8 (270.9/742.7)	596.6 (405.5/814.0)	617.7 (427.7/813.0)	< 0.001
Sodium (mg/d)	155.9 (110.3/207.4)	176.3 (131.2/234.0)	205.0 (149.7/270.5)	< 0.001
Magnesium (mg/d)	78.4 (56.1/104.8)	91.7 (69.0/119.4)	102.8 (78.0/137.2)	< 0.001
pH	5.941 (5.539/6.383)	6.010 (5.661/6.399)	6.139 (5.766/6.490)	< 0.001

Conclusions: The majority of initial urine studies are not "adequate". Our data confirm limitations of Cr/kg ratio as the measure of an adequate collection. The ratio does not appear to apply equally across age groups. Also, some groups may be inappropriately treated if Cr/kg is not considered. Cr/kg-specific reference ranges may be appropriate. Concentration and supersaturation of urolithogenic variables is likely better at assessing risk of urolithogenesis than total excretion in abnormal Cr/kg patients.

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Early Sonographic Improvement in Hydronephrposis after Pediatric Pyeloplasty Precludes Need for Long Term Follow Up Imaging

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Introduction: Follow up imaging after pyeloplasty would ideally be tailored to detect patients at risk for recurrent obstruction and limited in low risk patients. We review serial renal ultrasound (RUS) exams following pyeloplasty in an effort to identify early sonographic predictors of long-term outcome and to better define the need for serial postoperative RUS.

Materials & Methods: Medical charts of pediatric patients who underwent primary unilateral pyeloplasty between 2001 and 2010 were reviewed. Preoperative, early postoperative (1-4 months), and late postoperative (≥ 12 months) RUS were evaluated. Hydronephrosis was graded as none, mild, moderate, or severe by a pediatric radiologist. The timing and degree of hydronephrotic changes on serial postoperative studies were compared between patients with successful repair and those requiring additional surgical intervention for recurrent obstruction.

Results: Data were available for 118 of 166 patients who underwent pyeloplasty between 2001 and 2010. 65% were male and the median age at surgery was 57 months. At median follow up of 45 months, six (5%) patients had persistent or recurrent obstruction, which was managed with redo pyeloplasty in 5 and nephrectomy in 1. Hydronephrosis improved on early RUS in 43 (36%) patients and was stable or worsened in the remaining 75. No patient with early RUS improvement had clinical failure.

Conclusions: The ideal duration and schedule of follow up imaging after pediatric pyeloplasty remains controversial. None of our patients with downgrading in the degree of hydronephrosis on early postoperative RUS developed obstruction, suggesting that prolonged follow up may be unnecessary in such patients.

P1

Optimal Timing for Treatment of Metastatic Castration-resistant Prostate Cancer (mCRPC): Sequencing and Identifying Parameters of Early Progression with Sipuleucel-T

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Introduction: Numerous treatments are available for mCRPC, increasing the need for attention to sequencing decisions. Sipuleucel-T is an immunotherapy for asymptomatic or minimally symptomatic mCRPC. We will review factors associated with the greatest overall survival (OS) benefit in sipuleucel-T-treated patients and the prognostic value of bone metastatic burden in identifying men at risk of early progression.

Materials & Methods: We evaluated subgroups in the phase 3 IMPACT trial, which showed a significant OS improvement in sipuleucel-T-treated mCRPC patients versus control (HR: 0.78 [95% CI: 0.61, 0.98]; p = 0.03; median OS difference 4.1 mos).

Results: Some biomarkers support early administration of sipuleucel-T. Dividing IMPACT patients into quartiles by baseline PSA levels in a post-hoc analysis confirmed that sipuleucel-T was effective across all subgroups, with the greatest benefit observed in the lowest PSA quartile group. Additionally, sipuleucel-T manufacturing product parameters show successful antigen-presenting cell upregulation across several prostate cancer stages, with the greatest activation in a Phase 2 study of men with localized prostate cancer. We also studied the number of lesions in the initial and follow up bone scans in patients in the IMPACT treatment arm only; lowest baseline metastatic burden and slowest change in tumor burden between bone scans were prognostic markers associated with the longest OS.

Conclusions: These data support the use of sipuleucel-T early in the mCRPC treatment paradigm – soon after diagnosis of metastatic disease, when lowest disease burden is likely associated with a higher-functioning immune system.

P2

Confirmation of the Free Hormone Hypothesis: Decreases in PSA Correlate With Free Testosterone Rather than Total Testosterone in Men with Advanced Prostate Cancer Treated with GTx-758

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Introduction: Androgen deprivation therapy (ADT) improves disease-free survival but progression is related, in part, to ineffective castration. The free hormone hypothesis states that the biological activity of steroid hormones is affected by its unbound (free) rather than its protein-bound concentration.

Materials & Methods: In a Phase II study (G200705), men with advanced prostate cancer (n = 159) were randomized to receive 1000 mg or 2000 mg GTx-758 daily or leuprolide as their initial ADT. A second Phase II study (G20007) was performed in men (n = 9) with CRPC who then received GTx-758 2000 mg daily.

Results: Although all treatments reduced total T levels to < 50 ng/dL, GTx-758 caused greater reductions in PSA, suggesting that total T concentrations did not accurately reflect the suppression of androgen activity. GTx-758 treatments reduced free T levels to a greater extent than leuprolide. Similar clinical results were observed in CRPC patients where GTx-758 daily resulted in a 71% decrease in %free T and clinically relevant PSA reductions in men maintained on ADT. As a result of adverse events at higher doses of GTx-758, the trial was stopped early.

Conclusions: The Erα agonist, GTx-758, reduced the biologically active form of T, free T, as well as PSA to significantly lower levels than leuprolide. These data provide compelling evidence to support the free hormone hypothesis and suggest that serum free T concentrations would provide a better measure of therapeutic efficacy in ADT than total T. A Phase II clinical trial utilizing lower doses of GTx-758 is being performed.

P3

Real World Experience with Sipuleucel-T in Metastatic Castration-resistant Prostate Cancer (mCRPC) Patients (pts) ≥ 80 Years-old: Data from PROCEED

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Introduction: Sipuleucel-T is an autologous cellular immunotherapy indicated for asymptomatic or minimally symptomatic mCRPC based on data from the phase 3 IMPACT pivotal trial that showed a significant improvement in overall survival (OS) compared to control (HR: 0.78 [95% CI: 0.61, 0.98]; p = 0.03; median OS difference 4.1 mos). Analysis of IMPACT demonstrated evidence of a positive sipuleucel-T treatment effect in men above and below the median age of 71. We sought to understand the disease characteristics and product parameters in pts ≥ 80 years (yrs) given the high prevalence of older men in the mCRPC pt population.

Materials & Methods: PROCEED is an ongoing, multicenter (> 190 sites), phase 4 registry enrolling pts receiving sipuleucel-T. Information on antigen presenting cell (APC) activation and total nucleated cell (TNC) count were obtained during product manufacture.

Results: Of 560 subjects who completed sipuleucel-T treatment to date: 110 (20%) pts were ≥ 80 yrs-old. Disease characteristics in pts ≥ 80 yrs vs < 80 yrs are detailed in the table below. Product parameters were similar between groups.

Conclusions: Pts ≥ 80 exhibit similar product parameters compared with their younger counterparts. Future follow up will explore OS and correlations with immune parameters in both groups.

	<80 yrs-old	≥80 yrs-old	All
Baseline demographics/disease characteristics (n)			
Median age	70.0 (450)	83.0 (110)	72.0 (560)
ECOG-PS[1] = 0, %	72.9 (450)	59.1 (110)	70.2 (560)
Gleason ≤ 7, %	40.9 (450)	52.7 (110)	43.2 (560)
Median PSA (ng/mL)	16.0 (339)	34.4 (75)	18.2 (414)
Bone metastases (n)	364	83	447
≤ 5, %	62.6	63.9	62.9
>10, %	20.1	14.5	19.0
nodal disease, %	4.9 (450)	4.5 (110)	4.8 (560)
Median cumulative product parameters through treatment completion			
n	447[2]	110	557
TNC counts (x10^9)	11.2	11.4	11.2
APC[3] counts (x10^9)	1.8	1.8	1.8
APC activation[4]	33.7	33.6	33.7

[1]ECOG Performance Status; [2]3 pts missing data [3]Antigen Presenting Cell: large cells expressing CD54; [4]Defined as ratio of CD54 molecules post compared to pre-incubation with PAP-GM-CSF

P4

Viberect® Penile Vibratory Stimulation System: Evaluation of Its Erectogenic Efficacy

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Introduction: Current non-surgical strategies employed to treat erectile dysfunction (ED) target the vascular component of erection physiology. The Viberect® handheld device is a new FDA-cleared ED treatment, which exploits vibratory stimulation of genital afferent nerves for provoking erections. The aim of this study was to evaluate the clinical feasibility of the Viberect® device for the achievement of penile erection and rigidity.

Materials & Methods: Subjects for this study were 5 healthy men (mean age 26.4 yrs) with normal erectile function as measured by responses to the IIEF-EF. The Viberect® treatment at 75 Hz with ventral stimulation was initiated without any external visual sexual stimulation. Both objective Rigiscan measurements of rigidity and subjective Erection Hardness Score (EHS) responses were recorded and correlated. Toleration and safety were monitored.

Results: Rigiscan demonstrated that 4/5 patients achieved tumescence episodes beyond 60% total rigidity (considered the minimum required to achieve a non-buckling erection capable of vaginal intromission). According to EHS, the Viberect® treatment yielded scores of 4/4 (penis is completely hard and fully rigid) in 2 patients, 3/4 (penis hard enough for penetration but not completely hard) in 2 and 2/4 (penis is hard but not enough for penetration) in 1. There were no complications, and all subjects felt that Viberect® would be a reasonable, practical ED treatment.

Conclusion: This study provides evidence that Viberect® produces a non-invasive, well-tolerated erectogenic effect. These results indicate that penile vibratory stimulation provokes erections via neurostimulatory principles and support further study of this modality in treating men with ED.

P5

Characteristics of Patients with Bladder Overactivity that Opted for Sacral Neuromodulation Versus Botox Injection Therapy

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Introduction: Overactive bladder has a prevalence of 16% and is increasing with the aging population. Symptoms of overactive bladder significantly impact quality of life. For patients who failed behavioral modifications and anticholinergic medications, newer modalities including sacral neuromodulation (SNM) and injection of botulium neurotoxin (Botox) are viable options. Currently there is no guideline for tertiary treatment of overactive bladder. We analyzed the characteristics of patients who opted for SNM versus Botox for management of refractory overactive bladder.

Materials & Methods: We retrospectively investigated 96 patients with persistent bladder overactivity. Potential benefits and adverse-effect profiles for SNM and Botox were discussed with each patient. Sixty-two patients elected for SNM while 34 elected for Botox injection. The mean follow up period was 21 months. Both groups had comparable preop urodynamic parameters.

Results: Univariate analysis showed that female patients, patients with neurogenic bladder and patients with BMI > 30 were significantly more likely to received SNM. Patients with more severe frequency, nocturia and urinary retention were also more likely to underwent SNM placement; however these parameters did not reach statistical significance. At the latest follow up, 53% of the SNM patients reported improvement versus 60% of the Botox patients. Each modality has similar efficacy for both neurogenic bladder overactivity and idiopathic bladder overactivity.

Conclusions: Both SNM and Botox have proven to be effective treatment strategies. Further decisional research would have to taken into account procedural costs and patients' socioeconomic status. Randomized controlled trials are needed to guide patient selection for each therapy.

P6

Positive Surgical Margin after Radical Prostatectomy: Effect on Oncologic Outcomes
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Introduction: When faced with a positive surgical margin (PSM) after a radical prostatectomy, urologists are in dilemma of whether to immediately treat the biochemical recurrence with an adjuvant therapy such as radiation or to observe. At least 2 randomized clinical trials have shown a benefit of immediate radiation over no treatment. However no randomized trial completed to date has compared immediate radiation vs. salvage radiation after biochemical recurrence, especially looking into PSM group specifically. The purpose of this study is to gain an understanding of the effect a positive surgical margin following prostatectomy had on recurrence.

Materials & Methods: We reviewed CAMC's tumor registry and identified all patients that had undergone a radical prostatectomy for prostate cancer from 2000-2010. We looked into positive surgical margin (PSM) status and prognosis after radical prostatectomy. We then reviewed the effect of immediate adjuvant radiation therapy vs. salvage radiation therapy only after biochemical recurrence occurred.

Results: A total of 468 patients underwent radical prostatectomy and had records available for review. 56 subjects were found to have a PSM (11.96%). We have found that after 34 months, 42 (81%) patients who did not receive immediate radiation were cancer free and could avoid the side effects of immediate radiation such as ED, incontinence, urethral strictures, hemorrhagic cystitis and still have a low chance of biochemical recurrence.

Conclusions: Salvage radiation at time of biochemical recurrence may spare some men the side effects of immediate radiation. Longer follow up is necessary to support these conclusions.

P7

MRI Guided Prostate Biopsy may Improve Cancer Detection When Compared to a Saturation Template for Patients with Persistently Elevated PSA after Negative Standard Biopsies
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Introduction: Patients who have previously undergone negative transrectal ultrasound (TRUS) guided biopsies with persistently elevated PSA represent a diagnostic dilemma. Magnetic resonance imaging guided prostate biopsies and TRUS-guided saturation biopsies can both be utilized when confronted with this problem. We retrospectively reviewed both the total cancer detection rate and rate of detecting clinically significant cancers for each of these modalities.

Materials & Methods: A total of 28 patients with elevated PSA who had previously negative TRUS-guided 10 or 12-core prostate biopsies were reviewed. In this group, 14 consecutive patients with an average of 2.6 previous TRUS biopsies underwent multi-parametric MRI with dynamic infusion with subsequent MRI-guided biopsy. The other 14 patients with an average of 2.2 prior TRUS biopsies underwent TRUS-guided 20 core saturation biopsy of the prostate that included transition zone cores.

Results: Eleven out of fourteen (78%) patients in the MRI group were found to have prostate cancer compared to five out of fourteen (36%) in the saturation biopsy group (p value < 0.03). Clinically significant cancer as determined by the Epstein criteria was found in ten out of eleven patients in the MRI group compared with one out of five in the saturation group.

Conclusions: Compared to TRUS-guided saturation biopsy, MRI-guided prostate biopsy can achieve higher overall cancer detection rates as well as finding more clinically significant cancers. MRI-guided prostate biopsy may have a role in diagnosis of difficult to detect prostate cancers.

P8

Modeling Stretch-Induced Myogenic Detrusor Contraction as a Single Twitch of Spontaneous Rhythmic Contraction
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Introduction: Spontaneous rhythmic contraction (SRC) of detrusor smooth muscle (DSM) can be described as a continuous train of low-amplitude transient twitches. SRC is elevated in individuals with overactive bladder (OAB), but the mechanism remains unknown. We showed that quick-stretch (QS) stimulates a single myogenic twitch with an amplitude and duration similar to an isolated SRC twitch. Our experimental studies indicate that a common mechanism is responsible for QS-induced contraction and SCR. The objective of the present study was to develop a biomechanical model for DSM contraction that incorporates a single mechanism for these two types of contraction.

Materials & Methods: A spring-dashpot model was implemented as mechanical sensor to regulate the amplitude of QS-induced contraction based on the stretch amplitude, rate, and delay between QSs as in our previous experimental study. A single population of crossbridges was modeled to produce both SRC and QS-induced contraction. All of these crossbridges were active (inactive) at the peak (trough) of each SRC cycle and a QS imposed during SRC was modeled to activate any remaining crossbridges.

Results: This model is consistent with previous experimental data showing that QSs imposed throughout the SRC cycle produced a myogenic contraction with greater (less) nadir-to-peak tension when the QS was imposed near the trough (peak) of the cycle, suggesting more (fewer) crossbridges were available to be activated.

Conclusions: This SRC and QS-induced contraction model suggests that a simple QS protocol could be used to study the regulation of a single SRC twitch and the alteration of SRC in OAB.

P9

Coach-Reported Usage of Testicular Protective Equipment Among Adolescent Male Athletes and the Prevalence of Sports-Related Groin Injuries
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Introduction: The prevalence of self-reported sports-related testicular injuries among adolescents is higher than that reported in trauma database reviews as we have previously described. Coaches are often the first responders when injuries occur and they instruct players in the use of protective equipment. This study aimed to determine coaches' perceptions of testicular injury prevalence and the use of and need for testicular protective equipment.

Materials & Methods: Self-administered questionnaires were distributed to male sports team coaches at five central Pennsylvania high schools and colleges. Respondents were queried regarding the prevalence of testicular injuries, the use of testicular equipment, and guidance provided to athletes for cup usage for each sport. Surveys returned were analyzed for descriptive statistics.

Results: Twenty-four coaches returned completed surveys encompassing 26 sports teams. Twelve (46%) sport respondents were from high school coaches and 23 (88%) surveys described contact or limited contact sports (baseball, basketball, football, soccer, wrestling). Of all respondents, 80.8% of coaches reported that their players do not wear testicular protective equipment to games or practices and 96% of coaches do not ask their players to wear cups (single baseball coach requires cups). Over 42% of coaches noted testicular injuries among their players while only 15.6% of players reported suffering an injury (previously reported data).

Conclusions: The coach-reported prevalence of testicular injuries among adolescent athletes is relatively high while few coaches ask players to wear protective equipment. We recommend modifications in the current guidelines for use of testicular protective equipment with greater counseling by pediatricians.

P10

Survival Statistics in Kidney Cancer: Cause of Death Reporting and Potential Attribution Biases- a Need to Improve

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Introduction: Precise reporting of cancer-specific survival (CSS) and cause of death (COD) are important outcomes for reporting and evaluating cancer therapies and interventions in cancer research.

Materials & Methods: A PubMed search from 1/2002 to 9/2012 for results of publications reporting CSS in patients with localized RCC was performed. The number of studies utilizing NDI validated COD and institutional tumor registries was indexed. We then used our 2732 prospectively-collected kidney cancer tumor registry and identified deceased patients. COD assigned to each deceased patient was compared to the NDI's reported COD. Agreement between the two measurements of COD was assessed by kappa statistic.

Results: 101 publications were included in our analysis. A total of 11 publications reporting COD were population-based, while 89% used institutional tumor registry. Using our tumor registry, we identified 604 deceased patients. Our study population was primarily Caucasian (93.7%) and male (67%). Median age at the time of death was 67 years (range = 19-94 years). Comparing the reported COD between our tumor registry and NDI, the κ statistic = 0.06, indicating a very poor correlation between the two measurements of COD.

Conclusions: The majority of literature regarding survival in patients with localized RCC over the last decade draws conclusions from data captured by institutional tumor registries. OS and CSS in RCC are fundamental metrics that are frequently used to assess tumor biology, competing risks and efficacy of intervention. In the absence of an objective standard for COD reporting such as NDI, survival data from institutional series are at risk for misattribution and misinterpreted.

P11

Sarcoma of the Cord: A Population-Based Analysis of Incidence and Survival

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Introduction: Sarcoma of the spermatic cord is a rare tumor with only case reports in the literature describing its occurrence. The purpose of this study was to use a population-based registry to describe the incidence of these tumors based on histology and survival of the men diagnosed.

Materials & Methods: We performed a cohort study including men 20 years and older diagnosed with a malignant sarcoma of the spermatic cord from 1973 to 2009 identified from the National Cancer Institute's Surveillance Epidemiology and End Results program. Histological subtypes included fibrous histiocytoma, liposarcoma, and leiomyosarcoma. Kaplan-Meier methods were used to calculate overall (OS) and disease-specific survival (DSS). Stepwise multivariate competing risks regression analysis was used to determine independent predictors of cause-specific mortality (CSM).

Results: Overall age-adjusted incidence rates increased with age in all histologies and were highest in men > 70 years of age and those diagnosed with liposarcoma. Five-year DSS was higher in men diagnosed with liposarcoma compared to those diagnosed with leiomyosarcoma or fibrous histiocytoma ($p < 0.0001$). With regard to all histologies, factors associated with an increased CSM included higher tumor grade ($p < 0.01$), advanced stage ($p < 0.001$) and history of radiation treatment (0.003). In men diagnosed with liposarcoma, African-Americans demonstrated an increased CSM ($p < 0.03$).

Conclusions: Age-adjusted incidence rates of sarcoma of the spermatic cord increase with age. Liposarcoma is the most common histology diagnosed and offers the highest DSS except in African-American men who demonstrate an increased CSM.

P12

Battle of the Bots: A Comparison of the Standard da Vinci and the da Vinci Surgical Skills Simulator in Surgical Skills Acquisition

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Introduction: Virtual reality simulators are increasingly used to gain robotic surgical skills. Currently, no guideline exists detailing how best to acquire these skills. We compared the use of the da Vinci Surgical Skills Simulator (dVSSS) to the standard da Vinci (SdV) robot for skills acquisition.

Materials & Methods: Urology, OB/GYN, and general surgery residents were enrolled after local IRB approval. Three virtual reality tasks (thread the ring, ring rail 2, and tubes) were performed by each participant. Participants were then randomized to practice on either the dVSSS or the SdV for 30 minutes a week for 4 weeks. Participants could choose which drills to practice, however the dVSSS arm was not permitted to practice ring rail 2 (no similar practice scenario was available to the SdV group). Following the 4 weeks of practice the participants performed the same three virtual reality tasks and the results were recorded. Two way ANOVA comparisons were made between the dVSS and SdV groups.

Results: A total of 13 participants were enrolled in the study (7 in the dVSS group, 6 in the SdV group). After 4 weeks of practice a final test was performed on the dVSSS. Overall total improvement was found to be 28 and 21 points for the SdV and dVSSS groups respectively. The percent improvement was found to be 70% and 43% for the SdV and dVSSS groups respectively, which was statistically significant.

Conclusions: Practicing on the standard da Vinci is not inferior to practicing on the da Vinci simulator.

P13

Androgen Deprivation with GTx-758 Offers Significantly Lower Incidence of Hot Flashes Compared to Leuprolide in Patients with Advanced Prostate Cancer

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Introduction: The role of androgen deprivation therapy (ADT) along with its estrogen-deficiency related side effects for advanced prostate cancer (CaP) is well established. Hot flashes (HF) are experienced by up to 80% of patients in men with advanced CaP treated with ADT. Minimizing adverse effects of ADT is of paramount importance to ensure compliance. GTx-758 is a selective estrogen receptor-α agonist that has significant effects on free T in men with advanced CaP. Herein, we compare the effects of GTx-758 and LD with respect to HF.

Materials & Methods: In a Phase II study (G200705), 159 men with advanced CaP received 1000 mg or 2000 mg of GTx-758 daily, or LD 30 mg every four months. HF data was compiled at day 1, 28 and 90. Any HF noted were considered as a positive occurrence and $p < 0.05$ was statistically significant.

Results: There was no difference in baseline HF incidence. Incidence of HF for LD, GTx-758 1000 mg, and GTx-758 2000 mg groups at 28 days was 60.4%, 25%, and 12.8% respectively, and 80.9%, 18.8%, and 5.6% at 90 days, respectively ($p < 0.001$). Due to increased venous thromboembolisms (VTEs) at these doses of GTx-758, the trial was stopped prior to completion.

Conclusions: In men with advanced CaP, GTx-758 had statistically significant lower rates of HF compared with LD. Limiting HF may have significant impact on patient compliance and castration maintenance. A phase II trial is ongoing utilizing lower doses of GTx-758 to determine if similar effects on serum free T and HF can be shown with decreased VTEs.

P14

Primary Melanoma of the Urethra: A Population-Based Study of Incidence and Survival

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Introduction: Primary urethral melanoma is a rare tumor. Although case reports exist, no population-based study has been performed examining the incidence and survival based on this tumor. The purpose of this study was to describe the incidence of this tumor and patient survival.

Materials & Methods: We performed a cohort study including all persons 20 years or older diagnosed with a primary malignant melanoma of the urethra from 1973 to 2009 identified from the National Cancer Institute's Surveillance Epidemiology and End Results program. We assessed overall age-adjusted incidence rates (OIR) as well as incidence based on gender, race (Caucasian, African-American, or Other) and age group. Kaplan-Meier methods were used to calculate overall (OS) and disease-specific survival (DSS).

Results: A total of 51 patients (47 female and 4 male) were identified. No tumors were diagnosed in patients younger than 55 years and OIR were higher in females with the majority of tumors occurring in females 75 years or older. Although no African-American male patients were identified, no difference was noted in female OIR based on race. Median DSS was 32.0 months (95% CI 19, 62) and decreased with advancing stage. Although most patients were diagnosed with localized disease (N=26 or 52%), five-year DSS was still low in this group (38.7%, 95% CI 25.2, 65.2).

Conclusions: Primary urethral melanoma is a rare tumor most often diagnosed in elderly females. Prognosis is poor even when diagnosed at an earlier stage.

P15

Off Clamp Robotic Partial Nephrectomy Outcomes

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Introduction: Robotic partial nephrectomy (RPN) is a technically challenging procedure, as it requires advanced skills to accomplish tumor resection, hemostasis, and renorrhaphy within short ischemia time. Off clamp partial nephrectomy may decrease the risk of ischemic injury. We reviewed the outcome of our off clamp technique utilized in certain circumstances.

Materials & Methods: A total of 63 patients underwent robotic partial nephrectomy between for solid renal masses T1a and some of T1b. We identified a subgroup of patients who had off clamp robotic partial nephrectomy. The criteria utilized to perform the cases off clamp was exophytic, non hilar tumors that are have a base of 2 cm or less. We utilized placement of hemostatic stitch into the tumor bed before the resection of the tumor.

Results: 35 patients (56 %) underwent warm ischemia with an average warm ischemia time of 20.26 (range: 11-34 min). 28 patients were done without warm ischemia (44%). Patients with warm ischemia tend have more blood loss 299.28 mL vs 96.29 mL (p = .023). RPN with warm ischemia resulted in longer hospital stay of 2.43 days vs RPN 1.56 days (p = .0002). Warm ischemia RPN resulted in a sharper increase in the immediate post operative creatinine of 0.67 mg/dL compared to the off clamp RPN 0.31 mg/dL (p = .01).

Conclusions: Off-clamp RPN is a safe and feasible approach for solid small renal masses. Patients tend to have shorter hospital stay, smaller change in their kidney function, and less blood loss.

P16

Review of the Efficacy of OnabotulinumtoxinA (Botox) on Neurogenic Detrusor Overactivity (NDO) in Patients Who Have Failed Sacral Neuromodulation (Interstim) Therapy

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Introduction: The effectiveness of Botox injections in patients with NDO who have failed multiple oral anticholinergic agents has been demonstrated in recent literature. We report our preliminary results comparing patients who failed oral agents and neuromodulation to patients who only failed oral agents prior to proceeding to Botox injections.

Materials & Methods: We reviewed a total of 24 patients who underwent Botox injections between January 2009 and January 2013 for NDO with urge urinary incontinence (UUI). Twelve patients in our review failed at least two anticholinergic therapies and neuromodulation. Patients completed voiding diaries assessing the number of incontinent episodes per day, and post-void residuals were measured. All patients underwent urodynamics studies and urine flow measurements.

Results: The patients who underwent Botox after neuromodulation had a reduction in incontinent episodes from 4.9 to 1.66 per day compared to the Botox only group which had a reduction from 3.9 to 1.9 incontinent episodes per day. Patients receiving only Botox after failed oral agents reported a higher rate of satisfaction. There was no difference in mean bladder capacity or mean peak flow between the two groups. Both groups received two treatments with an average of 178 units of Botox.

Conclusions: There was no statistically significant difference between the outcomes of the two groups. Patients who did not have Interstim reported a higher rate of satisfaction. Further studies are needed to define variables that can be used by practitioners to assess treatment options for refractory NDO.

P17

Genomic Study of Clinical BPH Specimens

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Introduction: Benign prostatic hyperplasia (BPH) is one of the most common diseases among aging men. BPH is generally considered as a progressive disease, and previous studies have suggested that enlarged prostate volume is correlated with negative clinical outcomes such as acute urinary retention, response to therapy and need for surgery. Despite the high prevalence of this disease, little is known regarding the genomic profile and/or molecular mechanism associated with the BPH progression.

Materials & Methods: Our patient population consisted men with elevated PSA, having LUTS and a negative prostatic biopsy. These benign specimens from the patients are divided into two group based on the median prostate size of 35g. We compared mRNA expression profiles of the prostate glands with normal volume (n = 19) and enlarged volume (n > 19) using affymetrix human exon ST1.0 arrays.

Results: Statistical analysis of array data identified 898 genes which were differentially expressed (FDR 1.5) between the BPH samples from normal prostates and enlarged prostates. Our pathway analysis results further revealed that the differentially expressed genes were overrepresented in 33 canonical signaling pathways, including Oxidative Phosphorylation, Mitochondrial Dysfunction, VEGF, Growth Hormone, Leukocyte Extravasation, Wnt/beta-catenin, Nitric Oxide Signaling, Protein Kinase A, Pentose Phosphate Pathway, Ubiquinone Biosynthesis, Complement System and Integrin Pathway.

Conclusions: Our study provided the genomic landscape of BPH and elucidated the molecular pathways related to the progression of BPH. Further study of the identified genes and associated signaling pathways will facilitate our understanding of BPH etiology and the development of novel therapeutic strategy of this disease.