P1

Posterior Reconstruction Prior to Vesicourethral Anastomosis in Patients Undergoing Robot Assisted Laparoscopic Prostatectomy Leads to Earlier Return to Baseline Continence

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Introduction: Reapproximation of Denonvilliers fascia adjacent to bladder neck to the rectourethralis,or the Rocco Stitch (RS), has been suggested to improve continence in post prostatectomy patients. We examined the impact of the RS on post-operative urinary outcomes in patients undergoing robotic assisted laparoscopic prostatectomy (RALP).

Methods: We identified 168 patients having undergone RALP for prostate cancer between 2006 and 2009 by a single surgeon (RG); 67 undergoing a posterior reconstruction using RS prior to vesicourethral anastomosis. Prospective validated quality of life data was obtained using the RAND-UCLA questionnaire in patients preoperatively (baseline), and post prostatectomy at 3 and 6 months. AUA symptom scores were gathered at identical intervals.

Results: Seventy-four patients had complete information with 31 patients comprising the RS group. There were no significant differences between groups regarding preoperative characteristics, pathologic stage or nerve sparing status. There were no significant differences in urinary function, urinary bother or AUA symptom score at baseline or at 6-months post prostatectomy between the two groups. However, at 3-month follow up there was a statistically significant improvement in return to baseline parameters relating to urinary bother (72%, 53%; p=0.008), and urinary function (64%, 50%; p=0.05) in the RS group vs. no RS group. Additionally, the group not undergoing RS had a statistically significant increase in AUA symptom score from baseline vs. the RS group (+3.8, +0.2; p=0.005).

Conclusions: Posterior reconstruction in patients undergoing RALP has a significant impact on early return to baseline parameters relating to urinary bother, urinary function and AUA symptom score.

P2

Diagnostic Yield of Prostate Needle Biopsies Performed in Men with an Abnormal Digital Rectal Exam

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Introduction: Elevated prostate specific antigen (PSA) and abnormal digital rectal examination (DRE) are indications for prostate needle biopsy (PNB). Series using older PSA thresholds suggest that 25% of men with a normal PSA and abnormal DRE have prostate cancer (PCa). We evaluated a contemporary cohort to determine the detection rate.

Materials and methods: The charts of 900 men who underwent PNB were reviewed. Patients with prior or extended PNB were excluded. PSA was deemed normal/abnormal by age-specific cutoffs. A normal prostate was smooth, age-appropriate, or enlarged. An abnormal DRE was nodular, indurated, or asymmetric.

Results: Of 814 men, 54% had a normal and 46% an abnormal DRE. Patients were stratified by PSA and DRE (Table 1). 306 of 814 men (38%) had PCa; 80% had an abnormal PSA, 57% an abnormal DRE, and 41% both. The rate of PCa with an isolated abnormal DRE was 13% increasing to 34% with a concomitant abnormal PSA. No difference existed between DRE abnormalities (p=0.96). An abnormal DRE had a sensitivity of 57%, specificity of 60%, and positive predictive value (PPV) of 46% for PCa. For men with a normal PSA, the sensitivity of an abnormal DRE increased to 79%, while specificity and PPV decreased to 29%.

Conclusions: 13% of men with isolated DRE abnormalities had PCa. This information may aid in patient counseling and determination of biopsy thresholds.

TABLE 1. **Distribution of all 814 study patients stratified by PSA and DRE status**

	Normal PSA No. (%)	Abnormal PSA No. (%)
Abnormal DRE	164 (20)	206 (26)
Normal DRE	61 (8)	375 (46)

P3

Is Routine Imaging Following Ureteroscopy for Urinary Calculi Necessary?

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Introduction: Routine imaging to assess for obstruction or delayed excretion following URS procedures is debatable. We attempt to identify the variables associated with post-procedural abnormal imaging.

Materials and methods: 478 patients underwent URS for renal/ureteral calculi from 2007 to 2009 at two medical centers. 332 of these patients were imaged with a CT scan (186), IVP (84), renal ultrasound (58), or diuretic renogram (4) within 4 months of URS. Abnormal imaging was defined as ipsilateral hydronephrosis (any grade) or evidence of delayed renal excretion.

Results: 59% of patients had previous stone surgery. Mean diameter of the target stone was 7.2 mm with location being 28% kidney, 51% ureter, and 21% both. 56 of 332 (17%) patients had abnormal post-URS imaging with 50% being asymptomatic. Causes included stricture disease in 10 patients, obstructing residual stone fragments in 16, and delayed excretion without obvious stricture in 30. On univariate analysis, a prior ureteroscopic procedure (p=0.03) and inability to retrieve the target stone (p=0.007) were associated with abnormal imaging. However, age, gender, BMI, stone location, stone size, preoperative hydronephrosis, operative time, need for dilation/sheaths, duration of postoperative stenting, and stone composition were not. On multivariate analysis, a prior URS (OR 3.0, 95% CI 1.2-7.1, p=0.015) and inability to retrieve the stone (OR 3.4, 95% CI 1.3-9.1, p=0.013) independently predicted abnormal imaging.

Conclusions: 17% of patients undergoing URS had evidence of abnormal postoperative imaging. Prior URS or inability to retrieve the stone yielded an over three-fold increased incidence of abnormal imaging.

P4

Robotic-Assisted Laparoscopic Prostatectomy and Open Radical Retropubic Prostatectomy for Locally Advanced Prostate Cancer: A Comparison of Oncologic Outcomes

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Introduction: Robotic Assisted Laparoscopic Prostatectomy (RALP) offers minimally invasive treatment for localized prostate cancer (CaP) with comparable outcomes to Open Radical Retropubic Prostatectomy (RRP). However, the oncologic efficacy of RALP in locally advanced CaP is less clear. We report and compare our experience with RALP and RRP in men with locally advanced CaP.

Materials and methods: For patients undergoing RALP, data was collected prospectively as part of an IRB approved database. For those undergoing RRP, data was retrospectively collected. Patients with stage pT3 or greater CaP were identified. Clinicopathologic features were recorded. We further examined the effect of the RALP surgical learning curve on the incidence of positive surgical margins after 300 cases. Results between each cohort were compared.

Results: From 1997 to 2009, 761 patients underwent RALP and 342 underwent RRP at our institution. Ninety-six patients in the RALP group and 84 in the RRP group had pT3 or greater disease. Overall positive surgical margin rates for pT3 disease in RALP and RRP were 54.2% and 55.4%, respectively. A statistically significant trend towards lower positive margin rate in the RALP group was seen after 300 cases (66.7% first 300 cases vs. 45.0% latter 461 cases).

Conclusions: Two out of 3 men undergoing RALP with pT3 CaP had positive margins during our initial experience. With increasing experience, the positive margin rate decreased significantly and was comparable to that of RRP. We conclude that RALP and RRP have comparable oncologic outcomes in advanced CaP, especially with higher volume robotic surgeons.

P5

Integrated Safety Results from 4 Randomized, Double-blind, Placebo-controlled Studies of Sipuleucel-T

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Introduction: Sipuleucel-T is an investigational autologous active cellular immunotherapy. Three Phase 3 studies in asymptomatic or minimally symptomatic metastatic castration-resistant prostate cancer (CRPC) demonstrated survival prolongation, and a randomized Phase 3 trial in androgen dependent prostate cancer (ADPC) demonstrated an increase in PSA doubling time.

Materials and methods: Patients were randomized (2:1, sipuleucel-T:placebo) to receive 3 IV doses in the outpatient setting at approximately 2-week intervals. The safety population included 904 patients who underwent ≥1 leukapheresis (601 sipuleucel-T:303 placebo).

Results: Most patients were Caucasian (90.6%) and had a baseline ECOG performance status of 0 (83.4%); the median age was 70. 93% of patients in the safety population received all 3 infusions. Adverse events (AEs) observed in ≥ 5% of patients randomized to sipuleucel-T and at least twice as frequently in the sipuleucel-T arm were chills, pyrexia, headache, myalgia, influenza-like illness, and hyperhidrosis. Most occurred ≤1 day following infusion, were Grade 1/ 2, and resolved in ≤2 days. Grade 3 acute infusion reactions (AIRs) within 1 day of infusion, including chills, pyrexia, fatigue, asthenia, dyspnea, hypoxia, bronchospasm, dizziness, headache, hypertension, myalgia, nausea, and vomiting, occurred in 3.5% of sipuleucel-T and 0% of placebo patients. No Grade 4/5 AIRs were seen. AIRs were treated with acetaminophen, IV H1 and H2 blockers, antiemetics, and IV meperidine.

Conclusions: The majority of common AEs were mild or moderate. AIRs were managed in the outpatient setting.

P6

Perirenal Fat is Acquired with Age

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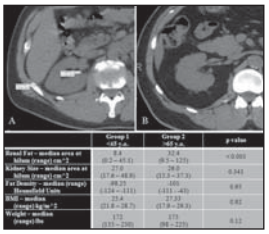
Introduction: The quantity/quality of perinephric fat may complicate renal surgery. We sought to evaluate whether a correlation exists between age/gender and perinephric fat volumes/characteristics in patients with renal mass.

Materials and methods: We identified 50 non-obese patients with BMI <30 kg/m^2 (Group 1: 45 and younger; Group 2: 65 and older). On axial images, we calculated:(1) area of fat (cm^2) surrounding the kidney (2) the cross-sectional area of kidney (3) the quality of perirenal fat as defined by density (HU) (Figure 1). Comparisons between age groups were made using a t-test and an analysis of covariance.

Results: Groups 1 and 2 did not differ in kidney size, BMI, weight, nor quality/ density of renal fat. Age was a predictor for the amount of fat surrounding the kidney with older patients having nearly 4 times more fat than younger patients (p<0.001). Amount of fat also significantly differed between the genders with men having more than women (p=0.0039). In a multivariable model that controlled for sex and kidney size, the difference in para/perirenal fat between Group 2 and Group 1 remained highly statistically significant (p<0.0001).

Conclusions: Anthropometric variables such as the quantity/quality of adipose reserves may have profound effects on surgical outcomes. We demonstrate that perinephric fat is a characteristic that can be quantified and reported. Moreover, its distribution increases significantly with age, particularly in men, even in those not considered clinically obese.



P7

Experience Treating Upper Tract Urothelial Carcinoma (UTUC) in Ukraine

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Introduction: We report incidence and single center experience in treating patients with UTUC in Ukraine. Based on National Cancer Registry 121 new cases of carcinoma of ureter and renal pelvis were registered in 2008 in Ukraine, which accounted for 2.26% of all urothelial carcinomas, and 0.075% cancer cases in 2008. The overall incidence of UTUC in 2008 was 0.25 cases per 100.000 population.

Materials and methods: Retrospectively assessed results of 111 patients with UTUC treated from 1999 to 2009. Fifty four patients had ureteral, and 57 - renal pelvis urothelial carcinoma. Male to female ration was 1.7:1. Median age was 61.9 (from 18 to 89) years. Median follow up period was 69.9 (from 3 to 343.9) months. 51 patients (45.95%) had synchronous bladder tumor. Radical treatment received 96.4% patients. Four patients (3.6%) received palliative treatment only. Nephroureterectomy was performed on 80 patients (72.07%), among them two patients received radical cystectomy, and nephron-sparing - on 27 patients (24.32%). In 47 patients (42.34%) disease recurrence occurred, for which they underwent surgery. Among them 19 patients (17.11%) received adjuvant chemo-radiation therapy for disease progression.

Results: 3 year- and 5-year cancer specific survival was 67.5% and 58.0%. Respective CSS for stages pT1, pT2 and pT3 were 100%, 77.3%, 47.05%, and 100%, 52.63%, 31.22% (p<0.001). Out of five pT4 patients nobody survived 12 months, mean survival from date of diagnosis to be 6 months.

Conclusions: UTUC is rare and aggressive disease with high mortality rate. Only early detection and treatment in pT1 guarantee best survival.

P8

Initial Experience with Elevate Repair System for Pelvic Organ Prolapse

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Introduction: The Elevate™ prolapse repair system comprises polypropylene mesh anchored through sacrospinous ligament and obturator fascia fixation points. We present our initial experience, focusing on safety, feasibility, and early subjective/anatomic outcomes.

Materials and methods: Eleven women underwent repair of anterior/apical compartment prolapse using the Elevate system, with 10 undergoing concurrent mid-urethral sling placement. Baseline anterior/apical POP-Q staging comprised stage II (n=3) and III (n=8) anterior, and stages I (n=3), II (n=5), and III (n=1) apical defects. Anatomic outcomes were assessed using POP-Q staging. Subjective outcomes were assessed using the International Consultation on Incontinence Questionnaire-Vaginal Symptoms (ICIQ-VS) and the Incontinence Impact Questionnaire (IIQ-7). Additional focus was placed on operative characteristics and complications.

Results: Patient age was 68 years (±9), with mean follow-up of six months. Mean blood loss and operative time was 113 cc (±20.7) and 71 min (±20.7), respectively. Post-operative examination demonstrated resolution (stage 0) of anterior/apical prolapse in all patients, and absence of mesh erosion. Total IIQ-7 scores improved from 6.5 (±3.2) to 1.8 (±1.7) at baseline and post-operative assessments (p<.001). ICIQ-VS domain scores for dragging pain and vaginal bulge improved from 0.9 (±0.9) to 0.0 (±0) and 3.0 (±.94) to 0.0 (±0), respectively (p<0.05, both comparisons). Ten patients reported subjective satisfaction. One remaining patient denied satisfaction due to persistent incontinence. No early complications were identified.

Conclusions: The Elevate™ system is associated with significant improvements in validated symptom and quality of life indices. Early anatomic restoration is excellent. No complications were noted in our early experience. Further patient accrual and follow-up is ongoing.

P9

Complex Robotic Renal Surgery in Horseshoe Kidneys

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There is limited experience with performing robotic and laparoscopic surgery in horseshoe kidneys. We report the first robotic surgery case series on horseshoe kidneys using the daVinci-S system.

Six horseshoe kidney systems in 5 patients were evaluated for upper tract pathology. Two cases presented with unilateral symptomatic ureteropelvic junction obstruction (UPJO), one with bilateral UPJO, and two cases with endophytic, centrally located tumors measuring 3.5 cm and 6.5 cm. Five transperitoneal dismembered pyeloplasties, one with pyelolithotomy, and two partial nephrectomies were performed. For pyeloplasties, double J stents were placed percutaneously in an antegrade fashion. For partial nephrectomy, laparoscopic ultrasound imaging for tumor demarcation was performed using the daVinci Tile Pro feature. Renal tumors were excised sharply with ischemia provided by laparoscopic bulldogs. The renal defect was closed using Evicel and a sliding weck clip renorrhaphy technique.

All cases were completed without complication. One partial nephrectomy was converted to a completion total nephrectomy after base biopsy was positive. Mean operative time and EBL for unilateral pyeloplasty was 202 minutes and 50cc, respectively. The bilateral pyeloplasty, parital nephrectomy, and total nephrectomy had operative times of 458, 210, and 330 minutes respectively and blood loss of 100cc, 100cc, and 300cc respectively. All patients were discharged on POD#1.

To our knowledge, this is the first series describing robotic surgical management of horseshoe kidneys. In our experience, complex robotic surgery on horseshoe kidneys is safe and feasible. Even bilateral cases and large central tumors can be performed and managed much like conventional robotic kidney surgery.

P10

Surgical Waiting Time of > 6 Months may Alter Pathologic Outcomes after Robotic Assisted Radical Prostatectomy

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Introduction: Prostate cancer has been considered to have indolent biology. We examined pathological outcomes for patients with known waiting times (WT) from initial prostate biopsy to time of surgery.

Materials and methods: Our RARP database was queried for patients with a surgical WT > 6 months from initial biopsy in comparison to those with a WT < 6 months. Two-tailed proportions z-tests were used to analyze the data.

Results: 659 patients had known waiting times: 159 with a WT > 6 months, mean 8.2 months and 500 with WT < 6 months, mean 3.7 months. Pathologic Gleason's score was distributed similarly between the groups; WT > 6 months: 0.63% GL 5, 31% GL 6, 63% GL 7, 3.8% GL 8, 1.9% GL 9, and no GL 10; WT < 6months: no GL 5, 29% GL 6, 67% GL 7, 2.2% GL 8, 1.8% GL 9, 0.20% GL 10. 35% and 46% of patients were considered intermediate to high risk by D'Amico criteria (p=0.02), respectively. 52% and 39% (p=0.005) had pathologic upgrading, respectively. 39% and 37% had tumor volume between 10-50%. The positive margin rate was 15.7% and 20.2%, respectively.

Conclusion: No detectable difference between the two groups was found with respect to Gleason's score, pathological stage, tumor volume, or positive margin rate. There was a statistical difference in rate of cancer upgrading within the > 6 month group. Further study should focus on determining the threshold time interval at which the rate of tumor upgrading increases.

P11

Stress Related Induction of Bladder Mucosal Changes in Mice: A New Murine Model to Explain Painful Bladder Syndrome

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Introduction: Painful Bladder Syndrome (PBS) is a chronic, painful inflammation of the bladder wall. The lack of curative treatment modalities is further hampered by the lack of representative in vivo models. In an effort to establish a potential in vivo model of PBS, the effect of chronic mild stressors on normal mouse bladders was evaluated for the effect on both mast cells and urothelial thickness.

Materials and methods: Forty mice were exposed to a series of random stressors daily (Cage Tilt, Damp Sawdust, No Sawdust, Social Stress, and Varying Light/Dark Cycles). The urinary bladders were formalin-fixed, paraffin-embedded, and evaluated using routine light microscopy with hematoxylin and eosin, giemsa, and PAS stained sections.

Results: The mean number of urothelial mast cells observed in the stressed mice was 0.31 ± 0.43 compared to 0.03 ± 0.09 in the control ($P=0.0041$). No change was observed in the number of detrusor muscle mast cells when the groups were compared (Control = 0.45 ± 0.64, Stress = 0.53 ± 0.58, $P = 0.5731$). The urothelial thickness was significantly decreased in mice exposed to multiple stressors (389 ± 66 microns) when compared to the control animals (583 ± 114 microns, $P < 0.0001$).

Conclusions: The absence of effective and representative models of PBS has severely hindered the pursuit of curative treatments modalities for this disease. The significant reduction in both urothelial mast cells and in the thickness of the urothelium suggest that chronic multiple stressors may be effective in inducing PBS in mice.

P12

Bladder Neck Plication Stitch: A Novel Technique during Robot Assisted Radical Prostatectomy (RARP) to Improve Recovery of Urinary Continence

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Introduction: Efforts to improve post-prostatectomy incontinence have led to many modifications in surgical technique. Here we present a novel technique to improve continence outcomes in RARP patients.

Materials and methods: Bladder Neck Plication stitch: After completing the vesico-urethral anastomosis, we use a 3-0 monocryl single suture to plicate the bladder neck. The stitch is placed 2 cm proximal to the bladder neck. This plication creates a funnel configuration such that the more distal bladder neck remains narrow during bladder filling.
A consecutive series of patients after initiation of the use of the plication stitch was compared to the most recent group before the change. A structured questionnaire was used for follow-up. Continence criteria was 1 pad per day for social continence and 0 pad per day for total continence.

Results: Of 334 patients: 159 were in the plication group vs. 175 in the control group. The mean time to reach social continence was 3.63 ± 3.01(84/159) vs. 5.33 ± 4.89(106/175) weeks (p=0.063). The mean time to reach total continence was 5.10 ± 3.80(40/159) vs. 8.49 ± 6.32(51/175) weeks (p=0.01) for the plication and no plication groups, respectively. There were no bladder neck contractures in either group. No other urinary complications were noted. The stitch is easy to perform and takes no more than 2 minutes to complete.

Conclusion: The bladder plication stitch is a simple and effective technical modification for improving urinary incontinence in RARP patients. Randomized controlled trials are underway to further evaluate this technique.

P13

Obesity is not Associated with Pathologic Features of Renal Cell Carcinoma

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Introduction: Obesity is a known risk factor for renal cell carcinoma (RCC). Studies have demonstrated a negative association between obesity as it relates to stage and grade of RCC. We analyzed our database to determine if these same negative associations were consistent in our community-based population.

Materials and methods: We performed a retrospective analysis of 307 patients with RCC to determine how body mass index (BMI) was associated with stage, grade, tumor size, histologic subtype and presence of sarcomatoid features. Patients were divided into 3 groups (normal, overweight, and obese) based on standard BMI cutoffs. Analysis was completed using a test for trend across increasing BMI groups.

Results: There were 65 patients in the normal BMI group (<25.0kg/m^2), 95 in the overweight group (25.0kg/m^2 - 29.9 kg/m^2), and 150 in the obese group (≥30.0kg/m^2). Pathologic features, including stage (p=0.55), nuclear grade (p=0.60), tumor size (p=0.93), histologic subtype (p=0.61), and presence of sarcomatoid features (p=0.48) demonstrated no significant associations between the three different BMI groups. When these same parameters were evaluated across BMI groups in 213 patients with clear cell histology only, there were no significant findings, or trends towards significance.

Conclusions: Obesity is not associated with lower pathologic stage, or grade of RCC. This is inconsistent with previously reported data, which may be secondary to lack of statistical power, differences in statistical methods, or the heterogeneity of our population. Further investigation is warranted given the conflicting results.

P14

Efficacy of Oxybutynin Chloride Topical Gel (OTG) in Improving Continence: Effect of Baseline Symptom Severity

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Introduction: OTG versus placebo significantly reduced the number of daily incontinence episodes (IEs) in a 12-week, phase 3 study in adults with overactive bladder. This post hoc analysis evaluated the effect of baseline incontinence severity on OTG-mediated improvement in continence.

Materials and methods: Changes from baseline in IEs/day to study end (last observation carried forward) were analyzed separately in patients with 2 to 3 IEs/day and those with >3 IEs/day at baseline.

Results: Of the study participants, 171 had 2 to 3 IEs/day, and 556 had >3 IEs/days. Absolute changes from baseline in IEs/day were dependent on baseline IEs/day for both OTG and placebo; however, differences in mean change from baseline between treatments were similar across subgroups (Table). All differences in continence improvement between OTG and placebo were statistically significant (Table). Among participants receiving OTG (or placebo) with 2 to 3 IEs/day and those with >3 IEs/day at baseline, 48% (24%) and 18% (12%), respectively, achieved complete continence.

Conclusions: Treatment with OTG resulted in statistically and clinically significant improvement in continence irrespective of incontinence severity at baseline.

Research funded by Watson Laboratories, Inc.

TABLE.

Mean±SD	Baseline IEs/day = 2 to 3 OTG (n = 85)	Baseline IEs/day = 2 to 3 Placebo (n = 86)	Baseline IEs/day >3 OTG (n = 276)	Baseline IEs/day >3 Placebo (n = 280)
Absolute change	-1.7 ± 1.4	-1.2 ± 1.3	-3.6 ± 3.0	-3.1 ± 3.4
(analysis of covariance)	p = .005		p = .004	
Relative change, %	-69 ± 55	-49 ± 49	-57 ± 41	-47 ± 43
(analysis of variance)	p = .015		p = .006	

P15

Do Effects of Oxybutynin on Cognition Depend on the Route of Administration-Topical or Oral?

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Introduction: A double-blind, placebo-controlled phase 1 study evaluated effects of oxybutynin chloride topical gel 10% (OTG) and oral oxybutynin immediate-release (OXB-IR) on older adults' cognitive and psychomotor function tests (CPTs).

Materials and methods: Participants were 60- to 79-year-old, healthy adults randomly assigned to 1-week treatment with OTG/oral placebo, OXB-IR/gel placebo, or oral/gel placebo (1:1:1). Participants applied gel (1g) 1×/day and took 1 capsule 3×/day. Treatment effects on CPTs performed were compared by ANCOVA. Name-Face Association Test (NFAT) delayed recall was the primary end point.

Results: Of 152 participants, 49 received OTG, 52 OXB-IR, and 51 PBO. No significant treatment effect on NFAT performance (p = .2733) overall or in pairwise comparisons with placebo (Table) was observed. Misplaced Objects Test showed significant treatment effect (p = .0294), with scores for OXB-IR but not OTG below those for PBO (Table). Although other tests revealed no significant treatment effects, 10 participants receiving OXB-IR vs 6 receiving PBO and 5 receiving OTG showed significant reductions in Hopkins Verbal Learning Test-Revised Reliable Change scores. Thirty-eight participants (73.1%) receiving OXB-IR, 3 (6.1%) receiving OTG, and 4 (7.8%) receiving PBO experienced dry mouth.

Conclusions: OTG had no significant effects on sensitive tests of memory and other cognitive functions in older adults.

Research funded by Watson Pharma, Inc.

TABLE. **Effects of OTG and OXB-IR on recent memory (delayed recall) at day 8**

Correct responses, No. LSM ± SD	OTG (n = 49)	OXB-IR (n = 49)	Placebo (n = 51)
NFAT delayed recall	7.02 ± 3.17	7.06 ± 3.68	7.77 ± 3.71
OTG vs placebo	p = .1551		
OXB-IR vs placebo		p = .1767	
Misplaced objects test delayed recall	13.64 ± 3.03	12.38 ± 3.34	13.16 ± 3.44
OTG vs placebo	p = .3678		
OXB-IR vs placebo		p = .0692	

p values for pairwise comparison. LSM, least-squares mean.

P16

Practice Patterns and Outcomes of Robotic Assisted Laparoscopic Pyeloplasty from a Community-Based Institution: 2006-2009

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Introduction: The literature asserts the availability of robotics and the limited learning curve associated with robotic assisted laparoscopic pyeloplasty (RALP) has made the procedure broadly accessible with a success rate of greater than 90%. The outcomes data for RALPs continue to emanate from large universities and centers of excellence; no data from community hospitals is published.

Materials and methods: A retrospective chart review of all RALPs performed by a single surgeon at a community-based hospital from 12/2006-12/2009 was completed. Demographic, pre-operative, operative, and post-operative data were collected.

Results: 41 patients with an average age of 44 years underwent RALP over the 3-year study period. Dismembered pyeloplasty was completed in 95% of patients; Fenger-plasty was performed in the other 5%. Twelve percent of patients had a previous repair. Average blood loss was 22.1 cc; length of stay averaged 2.4 days. Two percent of patients experienced major complications. The majority of patients (68%) had an improvement in kidney function post-operatively. Of the 36 patients for whom follow-up data were available, 35 (97%) experienced a sustained improvement in their symptoms and/or an improvement on post-operative renal flow scan. The remaining patient, who had an endopylotomy prior to RALP, experienced transient symptomatic benefit but ultimately underwent open repair one year following RALP.

Conclusions: Robotic assisted laparoscopic pyeloplasty is a viable procedure in the community setting with limited complications and excellent outcomes.

P17

Compliance and Efficacy of Combination Vacuum Erection Device/Tadalafil Penile Rehabilitation Versus Tadalafil Alone: A Prospective, Randomized Pilot Study

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Introduction: Penile rehabilitation after prostatectomy has become popular based upon few randomized, prospective studies. This pilot study evaluates not only a combination versus single modality regimen but also compliance where the drug is not supplied as part of the study.

Materials and methods: 30 highly motivated patients with pre-operative International Index of Erection (IIEF) Scores ≥ 26 that had undergone robotic prostatectomy were randomized 2:1. 20 patients used a vacuum erection device (VED) unbanded daily for 10 minutes and 20mg of tadalafil three times per week starting 30 days post-operatively for eleven months. The other group used only tadalafil. Patient visits were at 3, 6, 9 and 12 months. After a one month washout, a 13 month visit evaluated intercourse success with on demand tadalafil only. At each visit, patients were to supply at least four diaries documenting intercourse attempts with either the VED (banded) or 20mg tadalafil as well as IIEF surveys. Randomized patients were supplied with a VED (TIMM Medical), but all tadalafil was supplied at the patients' expense.

Results: 25 patients completed the study. All dropouts were from the tadalafil only group (backache (2), cost (3)). The VED group had significantly more successful intercourse at months 3, 6, 9 and 12. Overall compliance to tadalafil was poor (21%) due to cost and poor efficacy.

Conclusions: A combination penile rehabilitation regimen after prostatectomy whereby one component consists of a reliable on demand option is preferable due to poor efficacy and compliance with oral medications within the first year.

P18

Common Laboratory Values are Unreliable in Suggesting the Presence of Metastatic Renal Cell Carcinoma in Liver and Bone

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Introduction: Evaluating patients with newly diagnosed renal cell carcinoma (RCC) often includes serum levels of aspartate aminotransferase (AST), alanine aminotransferase (ALT) and alkaline phosphatase (ALP). Traditional teaching is elevation in these laboratory values may indicate metastatic disease to the liver (AST & ALT) or bone (ALP). We reviewed our institutional RCC database to determine if aberrations in these values indicated metastatic RCC.

Materials and methods: 318 patients diagnosed with RCC who had AST, ALT, and ALP values were available for review. Institutional standards of normal ranges for each value were used. Overall rates of aberration, and rates of aberration in patients presenting with metastatic RCC were calculated.

Results: Of the 318 patients, 60 (18.9%) presented with an elevation in one or more of the laboratory values. Of these 60 patients, 57 (17.9%) presented with clinically localized disease. The remaining 3 patients (0.94%) presented with lung metastasis and had isolated elevations of ALP. Five patients presented with metastatic lesions to the bone with no elevation of ALP. Five other patients presented with metastatic lesions to the liver without elevation of ALT or AST.

Conclusions: Elevation in ALP, while not seen in patients with bone metastasis, was present in 33.3% of patients presenting with lung metastasis. Therefore, an elevated ALP may be considered to direct closer pulmonary evaluation. Regarding AST and ALT, elevated values were not present in any patients with liver metastasis. AST, ALT and ALP are unreliable in suggesting the presence of metastatic RCC lesions in liver or bone.

P19

Omission of Pelvic Lymphadenectomy in Low-risk Prostate Cancer Patients is not Associated with Higher Rates of Biochemical Recurrence at Five Years

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Introduction: Several studies have reported a very low incidence of lymph node metastasis in D'Amico low-risk prostate cancer. Omission of the pelvic lymphadenectomy (PLND) has increased in this group. We evaluated whether omission of a PLND in these patients was associated with increased rates of biochemical recurrence (BCR) with long follow-up.

Materials and methods: The study population included 211 patients with prostate cancer clinical stage T1-2, Gleason 3+3, and PSA <10ng/ml. Patients were divided into two groups, those with PLND (+PL) at the time of prostatectomy (n = 88) and those without (-PL) (n = 123). BCR was defined as PSA >0.2ng/ml within five years of surgery. Cox proportional hazards analysis was applied to evaluate the association between omission of PLND and BCR.

Results: Median follow-up was 74.4 months. On Cox proportional hazards analysis omission of PLND was not a predictor of biochemical recurrence in -PL when compared to +PL ($p = 0.30$). Other variables assessed and found not to be predictive of biochemical recurrence were: year of surgery ($p = 0.44$); age at surgery ($p = 0.23$); African-American race ($p = 0.10$); cT2 stage ($p = 0.16$); number of biopsy cores ($p = 0.52$); number of positive biopsy cores ($p = 0.39$); and percent positive cores ($p = 0.62$). PSA was the only pre-operative clinical variable found to predict BCR ($p = 0.004$).

Conclusions: With long-term follow-up, D'Amico low-risk prostate cancers are no more likely to develop BCR when PLND is omitted than those who undergo PLND.

P20

Imaging of Acute Renal Colic in Pregnant Women: The Role of Magnetic Resonance Urography

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Introduction: Management of the pregnant woman suffering from renal colic can be challenging for even the most experienced urologist. Diagnosing an obstructing calculus in this situation is difficult due to the desire to avoid ionizing radiation. Recently, non-contrast HASTE Magnetic Resonance Urography (MRU) has emerged as an alternative means to diagnose urinary calculi. We performed a study to characterize our experience applying MRU to this unique patient population.

Materials and methods: From April 2008 to March 2010, 6 pregnant women presented to our institution with acute renal colic and underwent MRU for evaluation. The medical records and imaging studies were reviewed.

Results: The patients (age range 19-30 years) presented between their 12^{th} and 36^{th} week of pregnancy. In all cases, renal ultrasound results were equivocal (hydronephrosis but no obstructing stone observed). Of the 6 patients, 3 were subsequently confirmed with MRU to harbor obstructing ureteral calculi, one had a non-obstructing renal calculus, and in two subjects no calculus was identified. Of the 3 subjects with obstructing stones, one (with a 7 mm stone) underwent an endourologic procedure, and the other two (with stone sizes of 2 mm and 5 mm) were managed conservatively. No patient suffered any treatment-related complications.

Conclusions: MRU is a useful imaging study when evaluating the pregnant woman with suspected renal colic. The lack of ionizing radiation with this technique, coupled with detailed anatomic imaging, can be helpful when the diagnosis of a stone is in question, as further interventions may be better planned.

P21

Improving Urinary Continence in Robotic Prostatectomy: A Novel Urethral Plate Suspension Suturing (UPSS) Technique

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Introduction: In order to promote an early return of urinary continence in men undergoing robotic assisted laparoscopic radical prostatectomy (RALP), we have introduced a novel urethral plate suspension suturing (UPSS) during RALP. Herein, we report the initial experience with our suspension technique.

Materials and methods: The study and control groups consisted of 71 and 75 consecutive patients with clinically localized prostate cancer who underwent RALP with and without the UPSS modification, respectively. Social continence was defined as 0-1 sanitary pad per day. Continence status were assessed at 1 week and 12 weeks postoperatively following catheter removal.

Results: The two groups were comparable with respect to age, BMI, clinical stage, preoperative PSA and Gleason score, prostate volume, operative time, EBL and length of stay. In the study group, 41 men (58%) regained social continence within 1 week of Foley catheter removal, in contrast to only 23 men (31%) in the control group (relative risk of 1.751, p = 0.0014). At 3 months postoperatively, the social continence rates for the study and control groups were comparable at 99% and 97%, respectively. There was one case of urinary retention in the study group, which resolved after re-catheterization (none in the control group).

Conclusions: In our pilot study utilizing the UPSS modification during RALP, the majority of men regained social continence within 1 week of Foley catheter removal. The UPSS is technically simple and can be easily incorporated into standard RALP with minimal morbidity.

P22

Body Mass Index is not Associated with Lower Recurrence-free Survival in Patients with Non-Muscle Invasive Bladder Cancer Treated with Intravesical Bacillus Calmette-Guerin

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Introduction: We reported the relationship between BMI and recurrence in a prospectively maintained database of patients with non-muscle invasive bladder cancer treated with intravesical BCG.

Materials and methods: In a retrospective analysis from a single-institution database of 500 patients with non-muscle invasive bladder cancer, 286 were identified as having received intravesical BCG therapy. Recurrence-free survival following intravesical BCG was calculated for BMI categories using the WHO classifications of normal weight (BMI 18.5-24.9 kg/m^2), overweight (25.0-29.9 kg/m^2), and obese (≥30 kg/m^2) at a 60 month follow-up interval. Kaplan-Meier survival estimates were calculated and plotted while correcting for age, sex, race, initial tumor grade, and initial tumor stage.

Results: The mean age of the cohort was 64.5 years and 74.8% were male. 47.8% of patients were overweight, 30.6% were normal weight, and 21.6% were classified as obese. Recurrence-free survival for patients following intravesical BCG was 45.4 months, 54.5 months, and 48.5 months for normal weight, overweight, and obese patients, respectively. When compared to normal weight patients, the HR for recurrence was 0.93 (95% CI 0.6-1.45) in overweight patients and 0.864 (95% CI 0.57-1.3) in obese patients. At time periods greater than 60 months, recurrence-free survival trends lower in obese patients without achieving significance.

Conclusions: When controlling for age, race, sex, initial tumor grade, and initial tumor stage, increased BMI is not associated with alterations in recurrence-free survival in patients with non-muscle invasive bladder cancer treated with intravesical BCG. However, over longer follow-up times, recurrence-free survival shows a decreasing trend in obese patients.

P23

Management of Recurrences Following Energy Ablative Therapy of Renal Cortical Masses

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Introduction: Recurrences following renal ablation occur in 5-10% of patients. Management options include surveillance, repeat ablation, or surgical extirpation. We present a multi-institutional experience for management of recurrences.

Materials and methods: Prospective institutional databases from 9 centers were reviewed. 1265 patients underwent thermal ablation by cryoablation of radiofrequency ablation. 77 patients (6.1%) developed radiographic recurrence and formed the analysis cohort.

Results: Of the 77 recurrences, 47 were incomplete primary ablations, 29 ablation zone recurrences, and 1 metastatic disease. Fourteen (18%) opted for surveillance. Among the remaining 63, salvage therapies were administered at mean of 4.3 months after recurrence. Salvage ablation was performed in 50 (79%), partial nephrectomy in 5 (8%), and radical nephrectomy in 8 (13%). Salvage ablation was successful in 38/50 (76%). Twelve (24%) had a secondary recurrence diagnosed at mean interval of 16.7 months. Management of secondary recurrences included observation (3), tertiary ablation (6), and radical nephrectomy (3). Tertiary ablation was successful in 50% of patients. In the 16 requiring surgical extirpation, final pathology was renal cell carcinoma in 10, necrosis/fibrosis in 4, oncocytoma in 1, and AML in 1. At mean of 28 months (range, 3 to 69), 53 had no evidence of disease, 16 were alive with disease, 4 had died of metastatic RCC, and 4 died of other causes.

Conclusions: Secondary and tertiary salvage ablative procedures successfully managed recurrences in 53% of cases. Only 1.3% of patients undergoing renal ablation eventually required extirpative surgery.

P24

Tubeless and Glueless Percutaneous Nephrolithotomy (PNL): The Hopkins Experience.

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Introduction: There has been increasing interest in tubeless percutaneous nephrolithotomy (PNL). Unfortunately, many experiences with this technique describe protocols involving hemostatic glues and sealants, which are cumbersome and costly. We describe our experience with a series of patients who underwent a simplified tubeless PNL approach.

Materials and methods: We reviewed all PNLs performed by a single surgeon (BRM) between April 1, 2009 and March 31, 2010. Tubeless PNLs were selected for further evaluation. Procedures were performed by the same protocol: following Amplatz sheath removal, direct pressure was held at the puncture site for 5 minutes, and skin was re-approximated with absorbable suture. Double-J ureteral stenting was performed in all cases. Post-operative metrics, including change in hematocrit, blood transfusion, CT findings, secondary procedure, and length of hospitalization were analyzed.

Results: A total of 24 tubeless PNL procedures were performed. Average patient age was 54.7 years. Mean hematocrit decline was 3.5. No patient required blood transfusion. CT scans were done on post-operative day 1; no CT-detected complications, including no perinephric hematoma or urine leak, were noted. Four patients suffered a post-operative complication: fever (1); angina (1); urinary retention (2). Five patients required a secondary ureteroscopy, for residual stone burden; the remainder were stone-free following initial PNL. The average length of stay was 1.2 days.

Conclusions: Tubeless PNL can be safely performed by a simplified protocol without tissue sealants or glues. Simple, direct pressure and suture re-approximation of the puncture site can effectively minimize risk for persistent hemorrhage or urine leak.

P25

Management of Hidden or Buried Penis in Adults

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Introduction: Hidden or buried penis in adults can be associated with obesity, prior circumcision, and balanitis xerotica obliterans. This condition causes issues with sexual function, voiding function and hygiene. We discuss our experience in managing adult males suffering from hidden or buried penis.

Materials and methods: A retrospective chart review was performed to identify adult males that we had treated for hidden or buried penis from 1997 until 2010. A total of 34 patients were found, and their disease presentation, management and results were recorded.

Results: 34 patients had a diagnosis of hidden or buried penis. Mean age at the time of surgery was 48 (19-77) years of age. 31 (91%) of patients were obese, 30 (88%) of patients had prior circumcision, 16 (47%) of patients had BXO and 4 (12%) had undergone prior repair of hypospadias. Operative management was performed on 28 patients. 21 patients underwent penile liberation with split thickness skin grafts to the penile shaft. 14 underwent prepubic lipectomy or abdominoplasty. 2 patients underwent VY plasty, and 5 patients opted for a dorsal slit procedure. Two patients had complications, one from recurrent BXO and the other from hypertrophic scarring.

Conclusions: Hidden or buried penis in adults is associated with obesity, balanitis xerotica obliterans, circumcision and hypospadias repair. While penile liberation and skin grafting may be curative, some patients benefit from prepubic lipectomy and/or concurrent abdominoplasty. Surgical treatment allows for resumption of intercourse, improvement in voiding and easier hygiene and high satisfaction.

P26

Pilot Study of Pelvic MRI with Surface Body Coils to Assess Local Extent of Disease for Patients with Clinically Localized Prostate Cancer Undergoing Radical Prostatectomy

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Introduction: Improvements in imaging utilizing surface body coils permit high resolution visualization of the prostate. This obviates patient endorectal coil discomfort. We evaluated this modalities' role in a cohort undergoing radical prostatectomy.

Material and methods: Data on 17 patients with preoperative surface body coil 1.5T pelvic MRI was reviewed. Patients were stratified into 3 risk groups: low (cT1c, PSA < 10, Gleason 6), intermediate (cT1c and PSA >10 or Gleason $\geq$ 7), and high (cT2, any PSA, any Gleason score). MRI findings were correlated with final pathology with a focus on pathologic T3 disease (ECE or SVI).

Results: Stage distribution was cT1c in 12 and cT2 in 5. Mean PSA was 6.9 ng/ml. Gleason scores ranged from 6-9. 7 had low, 7 intermediate, and 3 high risk features. In low risk patients, MRI accurately identified organ confined disease in 6/7, while suggesting ECE in 1 who had T2 disease on final pathology. In intermediate risk patients, 2/7 had pT3 disease and both were accurately identified by MRI. In high risk patients, all 3 had pT3 disease with 2/3 identified by MRI.

Conclusions: In this pilot study, 50% of patients with intermediate or high risk features had pT3 prostate cancer. Surface body coil MRI accurately identified extraprostatic disease in 4 of these 5 patients. This imaging modality has potential for prostate cancer staging with improved patient comfort.

P27

Perioperative Outcome Analysis of Pure Laparoscopic Versus Robotic Assisted Laparoscopic Partial Nephrectomy (RAPN): Is There an Advantage?

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Introduction: RALPN is emerging as a minimally invasive alternative to nephron sparing surgery but few data exist comparing it to pure laparoscopic partial nephrectomy (LPN).

Materials and methods: After institutional review board approval, the minimally invasive surgery database was used to identify 150 consecutive patients undergoing minimally invasive partial nephrectomy by a single surgeon (MEA)-- 26 of whom had undergone RAPN. Three patient cohorts were selected for analysis: Group A (initial 26 LPN patients), Group B (last 26 LPN patients), and Group C (initial 26 RAPN patients). Perioperative outcomes were compared between the three groups.

Results: The mean tumor size in groups A, B, and C were similar (2.5, 2.7, and 2.6 cm respectively). Estimated blood loss was not significantly different between the groups. Despite an increase in the complexity of tumors (as measured by nephrometry score), RAPN was associated with shorter warm ischemia and operative times than both LPN groups ($p<0.05$). The warm ischemia times for the 3 groups were: A= 21.3, B=19.9 and C=12.9.

Conclusions: Our initial experience indicates that RAPN may be associated with a shorter warm ischemia time than LPN. Prospective comparitive studies are required to further define the role of RAPN.

P28

Active Surveillance Program at a Tertiary Veterans Affairs Medical Center

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Introduction: Active surveillance has become an accepted practice in an effort to reduce over-treatment of prostate cancer. The purpose of this study is to evaluate initial data after the establishment of an active surveillance program at a VA medical center and to compare these patients to those with delayed biopsy.

Materials and methods: A retrospective review identified 42 men who were diagnosed with prostate cancer and met criteria for active surveillance. We followed patients with a PSA every 6 months and annual biopsy, unless prompted by an increasing PSA value.

Results: 42 patients met criteria for active surveillance with 33 followed per our guidelines and the remainder having delayed biopsy. Among the 33 patients, 21 had repeat biopsies at an average of 11.1 months compared to 9 patients with delayed biopsies at 33.4 months. Five men have chosen definitive treatment at an average of 11 months. The number of positive cores from initial to repeat biopsy increased by 37% for in-program patients (IP) and 54.8% for delayed biopsy patients (DB). Total Gleason score increased by 0.7 for IP and 1.2 for DB between biopsies. On repeat biopsy, 14% of IP converted to a Gleason score ≥8 compared to 33% for patients with delayed biopsy.

Conclusions: We have demonstrated that an active surveillance program can be safely and effectively established at a VAMC. Although the ideal time frame for repeat biopsy remains unclear, waiting 2.5 years may place patients at increased risk for local progression.

P29

Urinary Diversion after Pelvic Exenteration

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Introduction: The objective of this retrospective study was to analyze long-term outcomes of urinary diversion in patients after pelvic exenteration, and their satisfaction with the method of urinary diversion.

Materials and methods: Charts of patients who underwent pelvic exenteration since January of 1990 at two Institutions (National Oncological Centre, Tbilisi, Georgia and Virginia Commonwealth University Medical Center, Richmond, USA) were reviewed. Ninety-four of these patients required urinary diversion. Diversion-related complications, long-term outcomes, and patient satisfaction with urinary diversion were analyzed.

Results: Exenteration was performed for gynecologic malignancies in 44 patients, for rectal cancer - in 27, for bladder cancer - in 17 and for soft tissue sarcoma - in 6. Forty-five patients underwent total exenteration and 49 - anterior exenteration. An incontinent stoma was created in 24 patients, continent stomas - in 36, bladder substitution was performed in 23 patients and rectal diversion in 11. Six patients (6.4%) died in the immediate postoperative period. Urinary continence was achieved in 85.3% of patients with continent stoma and in 90.9% of patients with bladder substitution. Upper urinary tract compromise was documented in 6.6% of renal units. Almost all patients with continent diversion were satisfied with their quality of life. Approximately one-third of patients with an incontinent urostomy expressed unhappiness with their condition and were willing to undergo major operation to convert to continent diversion.

Conclusions: In our experience, continent urinary diversion has yielded overall good functional results, high patient satisfaction rate and is feasible in most patients undergoing pelvic exenteration.

P30

Racial Differences in Bladder Management Methods in Patients with Spinal Cord Injury/Disability (SCI/D)

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Introduction: Data on the prevalence of bladder management methods (BMM) in patients with SCI/D is limited. Our goal was to provide prevalence of BMM and identify factors associated with various BMM in patients with SCI/D.

Methods: A retrospective review was performed on 876 SCI/D patients actively followed at a tertiary Veterans Affairs hospital. BMM were compared according to medical and demographic variables including mechanism of injury, level of injury, age, gender, and race and analyzed using Fisher's Exact and t-tests with $p<0.05$ considered significant. Multivariate regressions were used to identify independent risk factors for BMM.

Results: Data on BMM were available on 863/876 patients (98.5%). The majority of patients were Caucasian (449/805, 55.8%). The most common BMM was spontaneous voiding (251/863, 29.1%), followed by intermittent catheterization (IC) and indwelling catheterization [221/863 (25.6%) for both groups]. Of the 440 patients (51.0%) requiring some form of catheterization, IC was less commonly employed than indwelling catheterization for patients with cervical injuries (78/221, 35.3%) vs. patients with lower injuries (143/221, 64.7%; $p<0.05$). Non-Caucasians used spontaneously voiding(188/356, 52.8%) more commonly than Caucasians (177/449, 39.4%; $p<0.05$). Caucasian race was an independent risk factor for indwelling catheterization (OR = 1.46, CI: 1.024 - 2.073; $p<0.05$).

Conclusions: Our study provides prevalence data for BMM in a large population of SCI/D patients. In our population, Caucasians were more likely to use indwelling catheters and less likely to use spontaneous voiding, which may suggest that there are racial differences in perceptions regarding BMM and access to urologic care.

P31

Is the Digital Rectal Exam Obsolete?

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Introduction: Experts are increasingly utilizing PSA testing alone in the initial screening of prostate cancer and reserving DRE for patients with elevated PSA level, as evidenced by the European Randomized Study of Screening for Prostate Cancer (ERSPC) trial protocol. We have found evidence on prostate cross-sectioning that abnormalities found on DRE correlate with histopathologic changes.

Materials and methods: In this IRB approved study, the prostate was sectioned from apex to base in 5 mm increments at the time of surgical extirpation. The pathologists performed standard TMN staging, but an additional 2 mm shave of each cross section quadrant underwent additional evaluation. We compared cross-sectional pathology with DRE findings, clinical stage, and pathological stage.

Results: Of the 21 prostate specimens that underwent histological evaluation by quadrant, 7 patients (33.3%) had palpable asymmetry, firmness, and/or a nodule on DRE. We found 85.7% (6/7) of the DRE abnormalities correlated with location of pathology and histological evaluation. For one patient, abnormal DRE alone prompted prostate biopsy.

Conclusions: We found that palpable abnormalities correlated highly with histologic adenocarcinoma. These results suggest that abnormalities detected on DRE may be an accurate indicator for prostate cancer. As DRE is inexpensive and readily performed, we suggest thoughtful consideration be given before DRE is eliminated from standard urologic practice.

P32

Sacral Neuromodulation Implantable Pulse Generator Failures: Impact on Programming Settings

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Introduction: Sacral neuromodulation is an FDA approved procedure for (1) refractory urgency/frequency, (2) refractory urgency incontinence and (3) non obstructive urinary retention. The device consists of a lead placed in the S3 foramina and an implantable pulse generator (IPG). According to the manufacturer (Medtronics, Inc.), the IPG should function for approximately 2-4 years. No data exists regarding IPG life as it relates to indication for implantation, program settings and type of stimulation. The present study was conducted to determine the characteristics of program settings in patients undergoing revision of their device.

Materials and methods: Retrospective chart review was undertaken. Since 2005, 300 implants were performed. 28/300 (9%) of devices have required revision. 5 (18%) of the revisions were due to battery failure. There were 4 females and 1 male. Mean age was 59.8 years. Four patients had refractory urgency/frequency while 1 had non obstructive urinary retention.

Results: Three patients had unipolar stimulation (2 with urgency/frequency and 1 with non obstructive urinary retention). Their mean IPG voltage was 3.3 V and mean IPG life of 29.66 months. For the bipolar stimulation group, there were 2 patients with urgency/frequency with a mean IPG voltage of 2.15 V and mean IPG life was 51.5 months.

Conclusions: IPG life can be significantly prolonged in patients who achieve bipolar stimulation at lower voltage. This may be due to the presence of a higher impedence which requires less electrical flow. Additional study of these findings and their implications is currently ongoing in a prospective manner.

P33

Side Docking the Robot for Robotic Laparoscopic Radical Prostatectomy

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Introduction: Low lithotomy with robot between the legs for docking is a standard position for robotic radical prostatectomy. This position has complications such as nerve injury and in some cases may not be feasible in patients with conditions that limit hip abduction. We report a docking technique which obviates stirrups and simplifies setup without altering surgical technique.

Materials and methods: A total of 100 consecutive patients underwent robotic radical prostatectomy for localized prostate cancer. Fifty patients (group 1) were in the standard lithotomy position and the remaining 50 patients (group 2) were in slight trendelenburg with robot at the side of the bed - "side-docked." Setup and docking times were recorded. Comparison of both groups performed for differences operative variables.

Results: Mean setup time for group 2 was 4.7 minutes shorter than for group 1 ($p = 0.02$). Docking time and other operative variables were statistically similar and not affected by the adoption of side-docking technique. However, overall surgical time was longer due to modifications in other aspects of the technique during the study period.

Conclusions: Side-docking for robotic radical prostatectomy is associated with small but significant improvement in setup time and can be utilized in patients with limited hip abduction.

P34

The Use of Quill Suture to Secure Posterior Anastomosis in Robotic-assisted Laparoscopic Prostatectomy

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Introduction: Robotic-assisted laparoscopic prostatectomy (RALP) is a widely performed procedure for prostate cancer. The Van Velthoven anastomotic technique is routinely used, although authors report difficulty maintaining approximation of the posterior anastomosis. We describe a novel technique employing a 3-O quill suture (Angiotech, Reading, PA) to secure the posterior anastomosis during RALP.

Materials and methods: The anastomosis is initiated in typical Van Velthoven fashion, with the initial bladder neck and urethral sutures placed in standard configuration. Prior to continuation of anastomotic suturing, a double-armed 3-O quill monoderm suture is placed on the bladder neck and urethra from outside to inside at the 7 o'clock position. The suture arms are then crossed and placed from inside to outside at the bladder neck and urethra at the 5 o'clock position. Tension is held on the quill suture with the prograsp instrument. The anastomosis is then completed in standard fashion.

Results: 67 RALP's have been performed using this technique. Median operative time was 182 minutes, compared to 201 minutes in non-quill patients. There were no instances of difficulty placing the catheter at the time of surgery. 2/67 patients (3%) developed leaks, compared with 7/347 patients (2%) in the non-quill group. 2 patients (3%) developed bladder neck contractures.

Conclusions: This is the first known description of utilizing the quill suture during RALP in humans. We have successfully instituted this technique in the setting of RALP to improve anastomotic integrity and technical feasibility. We have displayed a reasonable learning curve and no increase in operative time.

P35

Comparison of Two Methods for Medical Information Extraction from Printed Text-based Hospital Records on Bladder Cancer Patients

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Introduction: The aim of this study was to compare results of two methods of data extraction from printed hospital medical records in a bladder cancer population.

Materials and methods: This study was IRB approved. The hospital-based medical records between 2005-2009 for 34 bladder cancer patients were printed, scanned and optical character recognition (OCR) performed. Two methods of information extraction were compared. One ("automated") was search of key terms in the OCR data and the other ("manual") was having two urologists manually review the printed medical records. Information targeted for extraction for both methods included demographics, presenting symptoms, co-morbidities, smoking exposure history, and bladder cancer histopathology. The results of the "automated" and "manual" methods of data extraction were then compared.

Results: Overall, there were high concordances between the "automated" versus the "manual" extraction methods (see Table below). The largest difference between the two techniques was in determination of the histopathology with "automated" method finding 27 patients with urothelial carcinoma compared to the "manual" method finding 31 patients.

Conclusions: Free text clinical records contain a large amount of useful information. Automated data extraction method resulted in information very similar to manual extraction. However, the histologic type of cancer will require some additional validation as there was a wider difference in this information. Future data extraction in examining bladder cancer population medical records at our institution can utilize the automated method.

Results	"Automated" Method (No. of Patients Identified)	"Manual" Method (No. of Patients Identified)
Mean age (yrs)	65	65
Gender		
Male	21	22
Female	13	12
Race		
Caucasian	19	19
African-American	6	8
Not Identified	9	7
Hematuria symptom	16	18
Positive smoking history	21	18
Comorbidities		
Hypertension	18	18
Diabetes	7	5
Histopathology		
Urothelial Ca	27	31

P36

AdVance Transobturator Male Sling for Post-Prostatectomy Incontinence: A Single-Institution's Initial Experience

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Introduction: The AdVance sling is a minimally-invasive treatment option for men with post-prostatectomy incontinence. Initial results have revealed improvement in urodynamic parameters and patient perceived effectiveness. However, outcomes data measured by objective validated questionnaires is sparse. We review our initial experience with the AdVance sling in patients with post-prostatectomy incontinence and objectively assess outcomes using the Expanded Prostate Cancer Index Composite (EPIC).

Materials and methods: Retrospective chart review was performed on patients undergoing AdVance sling placement for post-prostatectomy incontinence at our institution. Clinicopathologic features were recorded. The EPIC urinary domain questionnaire was administered to patients via telephone interview. Patients were asked each question twice based on symptoms prior to surgery and at present follow-up. Outcomes were assessed based on tabulated scores.

Results: Twenty-eight patients underwent AdVance sling placement for post-prostatectomy incontinence at our institution from 2007-2009, of which 20 responded to the questionnaire. Median follow-up was 13 months. The mean EPIC urinary domain score improved from 43.63 preoperatively to 76.86 postoperatively ($p<0.001$). Nineteen patients (95%) had objective improvement in their EPIC score. Mean daily pad use improved from 3.5ppd preoperatively to 1.1ppd postoperatively ($p<0.001$). Eighteen patients (90%) would recommend the surgery to a friend. There were no major postoperative complications.

Conclusions: The AdVance sling is a safe, minimally-invasive, and effective procedure for patients with post-prostatectomy incontinence. We demonstrate a measurable objective improvement in 95% of our patients undergoing the procedure at our institution. The procedure should be considered a viable treatment option in appropriately selected patients with post-prostatectomy incontinence.

P37

Laparoscopic Resection of Local Recurrence Following Prior Radical Nephrectomy for Clinically Localized Renal Cell Carcinoma: Perioperative Outcomes and Initial Observations

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Introduction: Local recurrence is rare following radical nephrectomy for clinically localized renal cell carcinoma (RCC). Aggressive open surgical resection of isolated local recurrence has been shown to offer durable local control and potential improvement in cancer specific survival. The objective of this study is to assess early outcomes on a select group of patients who underwent laparoscopic resection of isolated local recurrence following radical nephrectomy for clinically localized RCC.

Materials and methods: The perioperative and clinical outcomes of four patients who underwent laparoscopic resection of local recurrence between 2007 and 2009 were reviewed.

Results: Two patients underwent resection of ipsilateral adrenal recurrence while the remaining two underwent resection of recurrence in retroperitoneal lymph nodes. Mean age of patients was 57 (44-66), all had primary tumors with clear cell histology, and ECOG performance status 0. The mean recurrence size was 5 cm (3-7 cm). All surgical margins were negative. Mean operative time was 195 min (170-210) and mean estimated blood loss was 187 cc (100-250). No patient required blood transfusion. Mean length of stay was 2.5 days (2-3). At a mean follow-up of 12 months (2-26), 1 patient experienced further recurrence. All patients are alive and three have no evidence of disease.

Conclusions: Aggressive surgical resection of isolated local recurrence of RCC following radical nephrectomy with curative intent may be beneficial and has traditionally been performed using open surgery. In our limited experience, a laparoscopic approach may be utilized in select patients with small well circumscribed recurrences with low morbidity and excellent short term outcomes.

P38

AdVance Sling Placement for Male Stress Urinary Incontinence: Variations in Surgical Technique

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Introduction: The AdVance male sling has become a viable option for men with mild to moderate stress urinary incontinence(SUI) post-prostatectomy. Our aim was to analyze two variations in surgical approach.

Materials and methods: We retrospectively reviewed the charts of 17 consecutive men undergoing the AdVance sling procedure for post-prostatectomy SUI. 10 men underwent the procedure utilizing one surgical technique and the subsequent 7 a modified approach (limited dissection of the central tendon, passer placement at the apex of the triangle and longer postoperative rest period). Comparison was made utilizing an unpaired 2-tailed t-test for preoperative pad count, postoperative pad count at 1 and 3 months, postoperative urinary retention and erectile dysfunction (ED).

Results: No statistical difference occurred between the two groups in preoperative pads(2.1,1- diapers vs. 1.86, 1-5), postoperative pads at 1(1.22, 0-Texas vs 1.29, 0-4.0) and 3 months (1.8, 0- Texas vs 1.2, 0-5) and pre- and postoperative ED(p=0.953, p=0.43). Postoperative retention occurred with greater frequency in the modified group 0.20 vs. 0.57(p=0.153) as well as zero pad use 0.10 vs 0.28. There was a significant difference between pre- and postoperative pad use within both groups (p=0.03).

Conclusions: There was a statistically significant difference in pre- and postoperative pad use displaying overall efficacy of the procedure. Though our technique change results were not different in mean number of pads, the percentage of totally dry patients increased with the modification. Further study and longer follow-up is needed to evaluate the success of the AdVance sling in these patients.

P39

The Relationship between Lupron Therapy for Prostate Cancer and Lipid Profile in Patients with Cardiovascular Risk Factors

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Introduction: Prior studies have shown conflicting reports on the effect of ADT on serum lipids and glucose levels. We investigated the lipid profiles of patients receiving ADT, specifically Lupron.

Materials and methods: We performed a retrospective chart review of patients on Lupron therapy. We first looked at the entire cohort to compare whether there was a difference in the lipid profiles prior to and after ADT therapy. We used the paired t-test to see if there was a significant difference between these two groups. We also used linear regression to assess whether there was a difference in lipid profile prior to and after treatment in patients with cardiovascular risk factors, after adjusting for age, race/ethnicity and disease co-morbidities.

Results: Mean HDL prior to and post Lupron therapy was 54.42 ± 30.60 and 47.91 ± 13.25 respectively, mean LDL was 109.26 ± 31.92 and 105.71 ± 39.02 respectively, mean total cholesterol was 178.93 ± 39.67 and 184.03 ± 44.10 respectively, mean triglycerides 123.68 ± 52.19 and 138.60 ± 84.63 respectively. No statistically significant change in any lipid profile was observed within 6 months of initiation of treatment. The analysis also showed there was no association with worsening of lipid profile prior to and after ADT therapy invpatients with cardiovascular risk factors after controlling for age, history of DM, history of HTN or history of CAD.

Conclusions: Contrary to what has been reported in other retrospective studies, we did not see a significant worsening of lipid profile after Lupron treatment

P40

Short-Term Efficacy of a Transobturator Sling in Women Veterans with a History of Sexual Trauma

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Introduction: Transobturator midurethral slings have been shown to be efficacious in the treatment of stress urinary incontinence. However, efficacy in patients with history of sexual trauma and mixed incontinence (MUI) has not been reported. The objective of this investigation was to determine the short-term efficacy of the Obtryx® transobturator sling in the treatment of this patient population.

Materials and methods: 25 women with MUI were identified who underwent an Obtryx sling placement by a single surgeon at a Veterans Affairs (VA) Hospital from 06/01/2006 to 9/17/2009 using the VA's computerized medical record. The Urogenital Distress Inventory (UDI-6) and Incontinence Impact Questionnaire (IIQ-7) were available preoperatively on all patients. Post-operative outcomes were determined by questionnaire data or upon review of subjective history. Scoring specific to urge urinary (UU) symptoms and stress urinary (SU) symptoms were evaluated. The surgical outcomes were characterized as "cured/improved" or "no change/worse."

Results: 24 patients were included in this study. The average age and BMI were 51.9 years and 35% respectively. Average follow up was 208 days. 63% of patients reported a history of sexual trauma. In these patients, 93% reported improvement of their SUI and 73% reported improvement in UU. Women with no history of sexual trauma reported a 100% improvement in SU and 89% improvement in UU. No statistical differences in surgical outcomes were noted between women with or without history of sexual trauma.

Conclusions: Mid-urethral slings represent a viable option for treatment of mixed urinary incontinence in women with a history of sexual trauma.

P41

Hand-assisted Laparoscopic Partial Nephrectomy Using Blunt Finger Enucleation Technique

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Introduction: We present our Hand-assisted laparoscopic partial nephrectomy (HALPN) series using a technique of blunt finger enucleation (BFE) for exophytic renal masses without renal pedicle occlusion.

Materials and methods: Five patients underwent HALPN using BFE. Pre-operative indications were a solid, enhancing exophytic mass on CT. HALPN with BFE was performed with complete renal pedicle dissection but no occlusion. The tumor was identified with intra-operative ultrasound and BFE was performed. Tumor and tumor bed biopsies were sent for analysis. Hemostasis was accomplished with manual compression of renal parenchyma. After negative margins, FloSeal and Surgicel bolsters were placed into the defect secured with 2-0 vicryl capsular sutures. Fibrin sealant was placed.

Results: Mean age was 55 years. Average tumor size was 4.6 cm. All were renal cell carcinoma. Mean operative time was 154 minutes and EBL 375 ml with no blood transfusions. All patients with hypo-attenuated rim on CT had BFE successfully performed. One patient, without this finding and tumor necrosis on CT, had a radical nephrectomy due to intra-operative positive margin after BFE. Another patient with a solitary kidney had a post-operative creatinine of 2.4, which was transient. There were no other complications. All patients had IV contrast CT at 6 months without evidence of recurrence or parenchymal loss.

Conclusions: BFE is a feasible, safe technique for management of exophytic renal masses, however it is not applicable in all cases. Absence of hypo-attenuated rim on CT or tumor necrosis may indicate lack of feasibility. BFE maximizes renal perfusion and likely avoids parenchymal loss.

P42

Robotic Right Radical Nephrectomy with Inferior Vena Cava Tumor Thrombectomy

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Introduction: Renal masses associated with tumor thrombi have historically been managed with an open approach. Herein, we describe our technique for performing robotic right radical nephrectomy with inferior vena cava tumor (IVC) thrombectomy.

Materials and methods: A 46 year-old male presented with a 5 cm right lower pole renal mass with an associated infrahepatic IVC thrombus. Pre-operatively, the renal artery was embolized with ethanol. The daVinci S system was used with three 8mm robotic ports and a 12 mm camera port placed on the right paramedian line. Assistant ports were placed on the midline. The approach was transperitoneal with the patient in full flank position. Mobilization of the IVC above and below the ipsilateral and contralateral renal veins was performed. A 10 mm laparoscopic ultrasound probe helped to demarcate the extent of the tumor thrombus. A Satinski and laparoscopic bulldog clamps permitted caval control. A cavotomy was made at the level of the renal ostium to safely deliver the thrombus. Caval reconstruction was performed in a running fashion after evacuation of intraluminal clot and air.

Results: Console time was 4 hours with an operative time of 4.5 hours. Caval occlusion time was 37 minutes. Estimated blood loss was 1 liter requiring a transfusion of 2 units of pRBC. The patient was discharged on post-operative day #3.

Conclusion: A robotic assisted approach towards the resection of caval thrombus appears to be a feasible and safe alternative. To date, this is the first reported IVC tumor thrombectomy performed with the daVinci robot.

P43

Evaluation of a New Robotic Prostatectomy Program at a Tertiary Veterans Affairs Medical Center

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Introduction: The purpose of this study is to examine preoperative, intraoperative, and postoperative variables associated with establishment of a robotic prostatectomy (DVP) program at a VA medical center.

Materials and methods: Patients were retrospectively reviewed between March 2009 and February 2010, the first 12 months of a new robotic surgery program at our institution. Our control group was the same time period one year earlier. Preoperative, intraoperative and postoperative data was collected and compared.

Results: Between March 2008 and February 2009, 30 patients underwent open radical retropubic prostatectomy (RRP). With the introduction of DVP, total prostatectomies increased to 43 (6 RRP, 37 DVP), an increase of 43%. RRP decreased by 80%. BMI, PSA, Gleason score and staging were similar for both groups. Average EBL was 1315 mL for RRP vs. 166 mL for DVP ($p<0.01$). Mean operative time in minutes were 253 and 274 for RRP and DVP respectively. Complications included 2 rectal perforations, one each for RRP and DVP, one death after RRP (cardiopulmonary event post-op) and one open conversion for failure to progress. Average length of stay was 5.3 and 1.6 days for RRP and DVP respectively ($p<0.01$). Total positive margins were 30% for RRP and 16% for DVP ($p=0.19$).

Conclusions: During the first 12 months of our DVP program, the total number of prostatectomies increased dramatically. Our study shows that a robotic surgery program can be implemented in a safe and efficient manner with improvement in EBL and length of stay, similar complication rates and equivalent oncologic outcomes.

P44

Robotic Upper Pole Nephrectomy for Adult Patients with Duplicated Renal Collecting Systems

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Introduction: Duplicated renal collecting systems are a common congenital anomaly, usually presenting in childhood, rarely presenting in adult life. A series of conventional laparoscopic heminephrectomy for nonfunctioning upper pole renal units (NFUPRU) in adults has been reported by Abouassaly, et al. To our knowledge only one case of robotic-assisted heminephrectomy in adults has been described. We present our experience with robotic-assisted upper pole nephroureterectomy in adults.

Materials and methods: We reviewed the medical records of four adult patients with symptomatic unilateral duplicated collecting systems and NFUPRU, who underwent robotic-assisted laparoscopic heminephrectomy and near-total ureterectomy in a fashion similar to that described by Abouassaly, et al, between Nov 2004 and April 2010.

Results: The course of the upper pole ureter crossed posterior to the lower pole renal vasculature in all cases. The delineation between upper and lower pole renal units was visible on the renal capsule in all cases. All four patients had successful removal of NFUPRU without perioperative or long term complication.

Conclusions: Duplicated collecting systems rarely present in adulthood. Heminephrectomy for NFUPRU should be approached differently than partial nephrectomy, due to complex vascular anatomy. Robotic-assisted laparoscopy is well suited for this procedure, as it allows for meticulous dissection of the upper pole ureter as it courses near the duplicated renal vasculature. Patients enjoy brief hospital stays and preservation of remaining renal function.

Patient data and outcomes

Patient #	Age	Sex	Symptoms	EBL (mL)	Operative time (min)	Hospital stay (days)	Preoperative GFR (mL/min)	Postoperative GFR (mL/min)
1	45	F	Flank pain, LUTS	200	236	3	80	80
2	42	M	Gross hematuria after minor trauma	80	321	2	110	87
3	56	M	Progressively worsening LUTS	1200	408	2	83	109
4	32	F	Episodic LLQ LLQ pain & vaginal	100	280	2		
Average	44			395	311	2.3	91	92

P45

Interprofessional Education in a Department of Urology
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Introduction: Healthcare delivery requires increasing reliance on nonphysician staff. There are few urologically trained nonphysicians. Even within a urology department, there are different segments with little crossover. It may be valuable for patient care to provide for specialty and cross segment learning.

Materials and methods: We have implemented a program of education in urologic subjects for all nonphysician members of the urology service including office, OR and floor nurses, technicians and assistants and clerical and administrative staff with patient contact. The educational program consists of three major efforts: 1) a Journal Club (JC); 2) Lecture series and 3) Cross role shadowing. This program will be followed with self evaluation forms, vocabulary and knowledge examinations all without identifiers. The JC meeting quarterly reviews 4 to 6 papers, including one review. Physician mentors are available for discussion and to answer questions.

Results: The JC was positively received by attendees representing all departmental segments. The factors liked most were the information received (40%), the opportunity to meet other personnel (40%) and a comfortable environment for discussion and questions (50%). The aspects liked least were nothing (70%) or too many papers (10%). Forty percent thought that the session would help in their practice. Other suggestions included fewer papers, invitations to more attendees and more discussion. It is too early to evaluate the lecture and shadowing series.

Conclusions: An educational program for nonphysician members of the urology team has been very positively received. Specific observed benefits include increasing knowledge and recognition of other member's roles.

P46

Anterior Peritoneal Left Ureteroileal Anastomosis: A Novel Approach to Ileal Conduit Creation in the Post-Irradiated Pelvis
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Introduction: Creating an ileal conduit urinary diversion in patients who have undergone pelvic radiation is challenging. Bringing the left ureter under the sigmoid mesentery can be difficult because of the length of ureter required and radiation induced changes in the pelvis. A novel technique to mitigate these factors is presented.

Materials and methods: Two patients underwent this new technique. Due to radiation effects, the left ureter could not be safely tunneled the sigmoid mesentery. Therefore, we brought the ileal conduit anterior to the sigmoid colon and performed the left ureteroileal anastomosis on the patient's left side in an anterior peritoneal space.

Results: A 54 year old female developed a vesicovaginal fistula 24 months following external beam radiation and brachytherapy for cervical cancer. Her left ureter was immobile and unable to be passed under the sigmoid mesentery. A 69 year old male developed recalcitrant gross hematuria 10 years following external beam radiation for prostate cancer. His thickened radiated sigmoid mesentery prevented safe passage of the left ureter. In both patients, the left ureter was anastomosed to the ileal conduit anterior to the sigmoid colon. Although longterm followup is pending, the first patient developed a *right* ureteroileal anastomotic stricture four months post-operatively, suggesting that even without overt tension on the ureter, strictures can still develop due to post-radiation vascular changes.

Conclusions: When operating in the post-radiation pelvis, one must consider non-traditional reconstructive options. Anterior peritoneal ureteroileal anastomosis provides a technically feasible alternative to retrosigmoid passage of the left ureter.

P47

Abstract Not Available

P48

A New Offer for Hypospadias Dressing: Hydrocellular Adhesive Dressing
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Introduction: An ideal hypospadias dressing material must be cheap and nonallergenic. It also must be easily and quickly applied, nonadhering the incision, effectively absorb the leakages of wound, pressurize the fleps and grafts effectively without damage of blood circulation, protect infections and easily and painlessly removable. We use Allevyne Adhesive® as a care product that is produced for healing chronic wounds and burns, in dressing of hypospadias and circumcision.

Materials and methods: We included 43 hypospadias and 75 circumcision cases operated in our clinic between January 2007-April 2010, for the study. All of the cases had been dressed with Allevyne Adhesive® 22.5x22.5 cm. and we dressed 10 cases with each sheet.

Results: We didn't meet any difficulty in application and removal of the dressings and the dressing could be performed easily even by the inexperienced health personnel. The coast of the application is about 5$ for each case. We didn't encountered any complications related to dressing during follow-up.

Conclusion: We didn't seen complications that were seen by the use of traditional dressing products which were the problems seen in removal of the dressing, desiccate developed secondary to inadequate absorption of the leakages of wound, cohesions of wound lips, infections, necrosis of the fleps and grafts secondary to erroneous locations of the dressings in Allevyn Adhesive® use. There was no additional therapeutically cost due to use of that product. For those reasons we thought that Allevyn Adhesive® was a well alternative for dressing of hypospadias and circumcision.

P49

Liposarcoma of the Spermatic Cord: A Case Report and Review of Management
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Introduction: Reports regarding paratesticular tumors have appeared in the literature for over one hundred years. While malignant lesions of the spermatic cord are rare, sarcomas are the most frequent. Liposarcomas are most commonly diagnosed in the lower extremities, and the retroperitoneum. Involvement of the spermatic cord is much less common. The following is a case report of a well-differentiated liposarcoma of the spermatic cord and a review of management.

Materials and methods: We present a case of a 58 year-old male who presented with a painless scrotal mass and was subsequently diagnosed with a well-differentiated liposarcoma of the spermatic cord. The patient's clinical course and discussion on management is presented.

Results: This patient's malignancy was managed by radical orchiectomy, the surgical margins were negative, and he remains on surveillance with no evidence off disease recurrence. Liposarcoma of the spermatic cord is a rare diagnosis. The mainstay of management is radical orchiectomy. The most important factors for prognosis are the histologic subtype and surgical margin status. The well-differentiated histology has a favorable prognosis. Adjuvant treatment may include radiation depending on the presence of poor prognostic indicators. Chemotherapy's role is not clearly defined, and experience is limited to cases where recurrence has occurred.

Conclusions: Patients with a well-differentiated liposarcoma of the spermatic cord have a good prognosis if surgical margins are negative, and do not routinely require adjuvant therapy. The most important aspect of management after radical orchiectomy is long-term surveillance, as reports in the literature have demonstrated recurrences after 20 years.

†1

Pediatric Robotic Extravesical Ureteral Reimplantation: a Comparison with Open Surgery
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Introduction: Robotic-assisted laparoscopic ureteral reimplantation is a potential alternative to open reimplantation. To date, no direct comparison of age-matched cohorts exists to compare outcomes to open reimplantation.

Methods: A retrospective chart review was conducted of all 23 pediatric patients with a mean age of 65 months (range 3 to 144) who underwent robotic-assisted laparoscopic extravesical ureteral reimplantation for unilateral or bilateral vesicoureteral reflux from 2006 to 2009. Twenty-three patients undergoing open cross-trigonal ureteral reimplantation over the same time period were identified as age and weight-matched controls.

Results: All robotic procedures were completed without intraoperative complications. The mean operative time was longer in the robotic group (189 min) as compared to age-matched (165 min; $P = 0.04$) and weight-matched (165 min; $P = 0.01$) controls. Mean length of stay (33 hours vs. 53 hours) and pain medication usage (0.30 mg/kg morphine equivalents vs. 0.86 mg/kg) were less in the robotic group ($P < 0.001$). No radiographic evidence of reflux was observed in 97% of children undergoing robotic reimplantation with a mean follow-up of 27.8 months. In the open cohort, the reflux resolution rate was 100% in those undergoing post-operative VCUG. No patients developed post-operative febrile urinary tract infections.

Conclusions: Our series demonstrates decreased length of stay and use of postoperative narcotics with a 14% increase in operative time. This early series shows success rates similar to the open approach. Robotic-assisted laparoscopic extravesical ureteral reimplantation appears to be a safe and efficacious option for repair of vesicoureteral reflux.

P50

Use of Potassium-Titanyl-Phosphate Laser for the Treatment of Bladder Neck Contracture
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Introduction: Bladder neck contracture (BNC) is a well-known complication after surgical treatment of prostate disease. However, there is no specific treatment algorithm for managing BNC. We present the technique and results on the use of potassium-titanyl-phosphate (KTP) laser for the treatment of BNC.

Materials and methods: We retrospectively reviewed the records of 20 patients who underwent KTP laser vaporization of BNC from January 2007 through September 2009 by two surgeons. Men were classified as having either recurrent (failed previous treatment), or initial BNC.

Results: Of the 20 men, 8 were classified as having recurrent BNC. The etiology of bladder neck contracture was radical prostatectomy in 9 patients, photovaporization of the prostate in 10 patients, and transurethral resection of the prostate in 1 patient. There were no intraoperative complications. Mean postoperative follow up was 10.9 months. Men with recurrent BNC had worse outcomes compared to men with initial BNC. 4 of 8 men with recurrent bladder neck contracture versus 11 of 12 men with initial bladder neck contracture had successful outcomes. Of the men who recurred, mean time to failure was 8 months. Overall, 15 of 20 patients (75%) were successfully treated.

Conclusions: KTP laser ablation can be an effective treatment modality for BNC. Our results suggest higher rates of success if used as an initial treatment for BNC after PVP. Although several patients had a recurrent BNC, overall time to recurrence BNC appears longer than with other treatment modalities.

†2

Preoperative Predictors of Method of Nephron Sparing Surgery
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Introduction: During the past two decades, management of small renal masses has expanded to include nephron sparing surgery (NSS). We sought to evaluate disease characteristics that contributed to the selection of open versus laparoscopic NSS.

Materials and methods: We reviewed NSS procedures performed at our institution and evaluated the preoperative patient and imaging characteristics which contributed to selection of an open (versus laparoscopic) operation by surgeons comfortable with both approaches. Univariate and multivariate analyses were performed to identify factors associated with a higher risk of open NSS.

Results: 229 consecutive NSS, including 130 open partial nephrectomies and 99 laparoscopic partial nephrectomies, were reviewed. Median age was 59 years, BMI was 30, size of the tumor was 3.00 cm, and preoperative GFR was 81. Of these patients 39% were female and 61% were male. On univariate analysis, preoperative GFR ($p=0.05$), a history of contralateral RCC ($p=0.02$), tumor size ($p=0.04$), collecting system involvement ($p=0.04$), renal hilar tumors ($p=0.02$), and multifocality ($p=0.006$) all were associated with an open surgical approach. In a multivariate model incorporating these 6 variables, only renal hilar location (OR 2.63, 95% CI 1.17-5.88, $p=0.02$) remained significantly associated with open NSS.

Conclusions: Many parameters including increasing BMI, preoperative GFR, prior abdominal surgery, endophytic tumor location, and collecting system involvement do not necessarily preclude a minimally invasive PN. In our experience, renal hilar tumors were over 2.5 fold more likely to be managed by open PN likely owing to the complexity of resection.

SCIENTIFIC SESSION III

†*Resident Prize Essay*

†3

Residual Fragments Following Ureteroscopic Management of Calculi: Incidence and Predictors

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Introduction: Improvements in endoscopy have increased the use of ureteroscopy (URS) for managing urolithiasis. Patients may have residual stone fragments (RF) after the initial procedure. We attempt to define incidence and predictive factors.

Materials and methods: 478 consecutive patients underwent URS for renal/ureteral calculi between April 2007 and May 2009 at two institutions. 223 patients were imaged with CT scan (n=151) or KUB/IVP (n=72) within 3 months post-procedure. RFs were defined as residual ipsilateral renal/ureteral stones ≥ 2 mm. Preoperative variables were analyzed for their impact on RFs.

Results: 108 men and 115 women with a mean age of 47.3 years and mean BMI of 30.9 were included. The mean pre-treatment stone diameter was 7.3 mm with 27% of stones located in the kidney, 53% in the ureter, and 20% in both. 84 patients (38%) had RFs with a mean size of 4.8 mm. On univariate analysis, stone location in the kidney (p<0.001), multiple calculi (p<0.001), increasing stone diameter (p=0.03), absence of hydronephrosis (p=0.04), and the need for flexible URS (p=0.02) predicted RFs. Patient age, gender, BMI, stone-bearing calyx, retrieval method, operative duration, and stone composition were not associated with RFs. On multivariate analysis, stone location in the kidney (odds ratio [OR] 2.2, p=0.01), pre-treatment stone diameter > 5 mm (OR 2.1, p=0.03), and need for flexible URS (OR 1.9, p=0.03) independently predicted RFs.

Conclusions: Among patients undergoing URS for renal or ureteral calculi, 38% had RFs according to CT/KUB. Stone size, location, and need for flexible URS were all independently associated with RFs.

†4

Effect of Mid-Urethral Sling Placement on Urgency and Urge Incontinence

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Introduction: Contemporary research suggests the incidence of de novo urgency and urge incontinence(UI) following mid-urethral sling placement may be low, with many patients achieving improvement/resolution of these symptoms. We sought to investigate this hypothesis in a patient cohort undergoing TVT-O placement.

Methods: Sixty patients underwent TVT-O placement in the treatment of stress-predominant mixed incontinence. Outcomes were assessed using 3-day bladder diary, combined with multiple validated incontinence questionnaires. Attention was placed on questionnaires focused on urgency and UI (International Consultation on Incontinence Questionnaire-Female Lower Urinary Tract Symptoms (ICIQ-FLUTS); Urgency Perception Score (UPS)).

Results: Mean age and follow-up was 64 years (±13) and 8.7 months (±3.4), respectively. Significant improvements in overall incontinence were seen, with improvements in daily pad use [2.9 (±2.7) to 0.9 (±1.4)] and incontinence episodes [4.1 (±3.3) to 0.8 (±1.4)] being observed (p<0.001, both comparisons). Forty-nine patients (82%) denied absence of stress urinary incontinence (SUI) under any circumstances. Focus on measures of urgency/UI identified improvements in mean ICIQ-FLUTS domain scores for UI from 2.1 (±1.1) to 0.9 (±1.0) (p value <0.001), with 19 (32%) and 22 (37%) patients reporting score resolution (post-operative score = 0) or improvement. Similarly, mean UPS total score improved from 10.1 (±4.5) to 6.1 (±3.6) (p value < 0.001,) with score improvement or cure identified in 78%. Only one patient reported de novo UI based on UI score. The majority of patients (83%) did not require anticholinergics post-operatively.

Conclusion: TVT-O placement is associated with significant improvements in validated measures of urgency/UI, in combination with a low rate of de novo UI. Expected improvements in reported SUI were seen.

†5

Clinical Stage T2 Subgroups Accurately Predict Prostate Cancer-Specific Survival Following Radical Prostatectomy

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Introduction: Prostate cancer staging system has undergone several changes based on the studies with biochemical recurrence as an end point. We examined whether clinical stage T2 subgroups can accurately predict biochemical recurrence-free survival (BRFS) and prostate cancer-specific survival (PCSS) following radical prostatectomy (RRP).

Materials and methods: Between 1983 and 2009, a single surgeon performed preoperative digital rectal examination (DRE) and RRP on 4,100 men with clinical stage T1c and T2 prostate cancer. We retrospectively analyzed their BRFS and PCSS from the time of surgery.

Results: With a median follow-up of 10 years after RP, 668 men (16.8%) experienced biochemical recurrence (PSA $\geq$ 0.2 ng/ml) and 151 men (3.8%) died from prostate cancer. In Kaplan-Meier survival analysis, there was a significant difference in BRFS and PCSS between clinical stage T1c and T2 and betweenT2a and T2b subgroups, but not between T2b and T2c subgroups. More importantly, in multivariate Cox proportional hazards regression analyses, T2 subgroup was an independent predictor of BRFS (HR: 2.03-3.15, p<0.001) and PCSS (HR: 3.51-7.57, p<0.01) after adjusting for other prognostic factors, such as biopsy Gleason score and preoperative PSA level.

Conclusions: Clinical stage T2 subgroup information has an independent prognostic value in predicting PCSS following RP. Clinical staging system for T2 prostate cancer should not be modified.

†6

Combined Tissue Transfer Techniques in Urethral Reconstruction

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Purpose: To evaluate the role of combined tissue transfer techniques for urethral reconstruction in patients with long anterior urethral circumferential strictures in a single stage repair.

Materials: Retrospectively reviewed the charts 240 patients who underwent urethral reconstruction. We reviewed 8 patients who underwent combined tissue transfer with buccal mucosal and circular penile fasciocutaneous flaps (FCF) in a single stage procedure. Four patients underwent circumferential urethral reconstruction utilizing a dorsal buccal mucosa graft and a ventrally placed penile FCF. Four patients underwent repair of 2 different strictures with ventral onlay buccal mucosa grafts for more proximal strictures and ventral FCF for more distal strictures.

Results: The mean age of patient was 52 and had a mean stricture length of 7.2 cm range (5-15). We had 87.5% success rate with 1 patient developing a distal stricture requiring urethrotomy. All patients successfully underwent urethral reconstruction in single stage operation without intra-op complications. Mean flow rate improvement was 12 ml/sec, from 6-18 ml/sec.

Conclusion: A single stage approach to long circumferential stricture is possible and highly successful. The use of buccal mucosa to recreate the dorsal plate allows for placement of a ventral flap and total urethral substitution. This provides an attractive option for patients other than a traditional two-stage repair.

†7

Assessment of Urine PCA3 Assay in Development of a Model for Predicting Prostate Cancer in Biopsy Specimens

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Objective: To determine whether urine *PCA3* enhances CaP diagnosis at biopsy with pre-biopsy data.

Material and methods: Data were collected from 440 men underwent an initial or a repeat TRUS 12 core prostate biopsy. After excluding men receiving medications affecting PSA levels, men with history of CaP or with other variables missing, 288 men remained in the study. PCA3-mRNA and PSA-mRNA concentrations were quantified by using the Progensa PCA3 assay derived from first-catch urine samples following a DRE as described by Groskopf et al. PCA3 assay score, either coded as a continuously variable or according to three cut-off values (35, 24 and 17, as described by Marks et al and Chun et al) were tested to determine the most informative logistic regression models to address the presence of CaP from biopsy with base predictors of age, race, PSA, and history of previous biopsy. Predictive accuracy (PA) estimates of biopsy outcome predictions were quantified using the area under the curve (AUC) of the receiver operator characteristic (ROC) analysis in models with and without PCA3. Differences in PA were tested using the Mantel-Haenszel test.

Results: Continuous PCA3 score and cut-off values of 24 and 35 did not show a significant independent prediction value of CaP at biopsy. However, a PCA3 score cut-off threshold of 17 improved multivariate PA of the base model with 4.3% gain in PA (0.657 to 0.700), p = 0.0288.

Conclusions: PCA3 score with cut-off of 17 can serve as a novel marker increasing PA of multivariate biopsy models.

9

Authenticating a High Fidelity Prostate Exam Simulator

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Introduction: The digital rectal exam is an important diagnostic skill and we have developed a novel prostate simulator for training clinicians in the art of DRE. The purpose of the study is to authenticate the tactile realism of the simulated prostates via urologist judgment and mechanical characterization of prostate tissue.

Materials and methods: Twelve urologic surgeons performed in an IRB-approved psychophysical methods of limits experiment with the prostate simulator. To perform mechanical characterization, 21 *ex vivo* prostatectomy specimens were immediately evaluated using a custom-built spherical indentation device that calculates tissue elastic modulus. After sectioning, prostate elasticity measurements and tissue for histopathological analysis were taken by quadrant from each cross-section.

Results: Urologists palpated prostate models ranging in stiffness from 8.9-91 kPa and evaluated prostates between 27.1-59.63 kPa as most realistic. They judged nodules smaller than 7.5 mm to be unreasonably small. The most realistic disease scenario was a background prostate of 34.1 kPa with stiffer nodules embedded within. Materials characterization of 21 gross prostates (306 data points) found the elastic modulus for normal (4.6-236.7 kPa) and malignant (7.0-978.3 kPa) prostate tissue ranged widely. The median elastic modulus difference between intraprostatic benign and malignant tissue was 49.4 kPa, with cancer being stiffer.

Conclusions: Our study confirms a wide range of normal prostate tissue elasticity as evidenced by overlap between tissue material property data and expert opinion. We found a consistent differential between pliant benign tissue and stiffer malignant tissue elasticity. These findings will inform refinement of our prostate simulator.

†8

Recurrence Patterns Following Thermal Ablation of Renal Tumors Performed at High-Volume Centers

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Introduction: Energy ablative therapies are assuming a greater role in the management of small renal masses. Radiographic or biopsy-proven recurrences are known to occur following primary ablative therapy. We determine recurrence patterns following thermal ablation performed at high-volume centers.

Material and methods: Institutional ablation databases from 9 academic centers were reviewed. A total of 1265 patients (1385 renal tumors) underwent cryoablation or radiofrequency ablation (RFA) via either laparoscopic or percutaneous approaches. Recurrences were classified into one of 3 categories: 1) incomplete primary ablation (≤ 3 months from initial ablation), 2) ablation zone recurrence, and 3) extra-renal disease.

Results: The distribution of techniques included 875 RFA and 390 cryoablation. Overall, 77 patients (6.1%) developed an initial radiographic recurrence at a mean interval of 13.7 months. Of these, 21 were biopsied and all were positive for renal cell carcinoma. In recurrent cases, mean pre-ablation lesion size was 3.3 cm (range 1.5-8.4) and two-thirds of these tumors were endophytic. When stratifying by recurrent type, 47 (61%) initial recurrences were incomplete primary ablations, 29 (38%) were ablation zone recurrences, and 1 (1%) was metastatic. Recurrence rates were 6.6% for RFA and 4.9% for cryoablation (p=0.22).

Conclusions: Renal thermal ablation at high volume centers demonstrates a low recurrence rate. Over 60% of these are incomplete primary ablations. Data from this series suggests no difference between modalities. Experience and lesion selection remain key features for success.

10

Inositol Hexaphosphate Treatment for Bladder Cancer: In Vitro Effects on Apoptotic and Necrotic Activity

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Introduction: Inositol Hexaphosphate (IP6) is a polyphosphorylated carbohydrate found in foods high in fiber content. We have recently reported IP6 to have significant inhibitory effects on cell growth *in vitro* against bladder tumors. Our objective was to further determine the mechanism by which IP6 effects bladder cancer cell lines, whether by apoptotic or necrotic means.

Materials and methods: HTB9, T24 and TCCSUP bladder cancer cell lines were cultured using standard techniques and incubated for 2 hours with 2.5 and 4.5mM/well IP6. Cell viability was measured by MTT at 24 hours thereafter. Apoptosis and necrosis were evaluated by Annexin V-fluorescein isothiocyanate (FITC) and Propidium Iodine using flow cytometry. Results are reported as the percent of total cells gated.

Results: Significant reductions (P<0.001) in cellular growth were noted in all cell lines with 4.5mM IP6 and in the TCCSUP with a mere 2.5mM IP6. Significant changes in apoptosis and necrosis are noted below.

Conclusions: *In vitro* treatment of bladder cancer with IP6 significantly decreased cellular growth by apoptotic and necrotic mechanisms. The significant reductions in cellular growth reported herein with a 2 hour incubation of IP6 strongly indicate its potential use as an intravesical agent for the treatment bladder cancer. This data warrants further investigation and the initiation of Phase II clinical trials to evaluate the safety and clinical utility of this agent.

			Early		Late
	Treatment	Alive	Apoptosis	Apoptosis	Necrotic
HTB9	Control	61.81	14.48	22.68	1.03
	2.5 mM	**48.04**	10.43	**35.30**	6.22
	4.5 mM	**22.51**	5.81	**66.37**	5.30
	ANOVA	<0.001	N.S.	<0.001	N.S.
T24	Control	63.49	6.85	20.49	9.17
	2.5 mM	59.46	13.22	23.19	**4.13**
	4.5 mM	51.37	14.40	**32.20**	**2.02**
	ANOVA	N.S.	N.S.	0.009	0.006
TCCSUP	Control	86.85	1.38	8.95	2.82
	2.5 mM	84.99	0.12	**0.53**	**14.35**
	4.5mM	**51.91**	**11.03**	**32.40**	3.66
	ANOVA	<0.001	<0.001	<0.001	<0.001

Statistical significance versus control

11

The Mechanism of Statin-Induced Autophagy in Prostate Cancer Cells

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Introduction: Our previous studies have demonstrated that atorvastatin, an inhibitor of 3-hydroxyl-3-methylglutaryl coenzyme A reductase, induces autophagy in the prostate cancer cell line PC3 through inhibition of geranylgeranyl biosynthesis. This study attempts to elucidate the molecular mechanism by which inhibition of geranylgeranyl biosynthesis induces autophagy.

Methods: PC3 cells were treated with atorvastatin, plus a protein translational inhibitor (cyclohexamide), transcriptional inhibitor (chromomycin A), c-JUN kinase inhibitor (SP600125), p38 kinase inhibitor (SB203580), or MEK inhibitor (U0126), and the protein expression level of autophagosomal marker LC3-II and the mRNA level of *LC3* were determined by immnoblot analysis and RT-PCR assay. PC3 cell survival following treatment with atorvastatin plus cyclohexamide or chromomycin A was studied. The effect of atorvastatin on gene expression profile in PC3 cells was determined by the DNA microarray assay.

Results: The atorvastatin-induced LC3-II expression was inhibited by both cyclohexamide and chromomycin A, suggesting that atorvastatin activates transcription of *LC3*. Consistent with this, atorvastatin enhanced the expression of *LC3* mRNA. Addition of geranylgeraniol to atorvastatin eliminates the enhancement of *LC3* mRNA, confirming the activation of *LC3* transcription is dependent on inhibition of geranylgeranyl biosynthesis. Further, SP600125 and U0126 inhibited the atorvastatin-induced expression of LC3-II. The DNA microarray assay demonstrated that inhibition of geranylgeranyl biosynthesis by atorvastatin caused a dramatic change in expression of genes that regulate cell growth and division in PC3 cells.

Conclusions: Atorvastatin-caused inhibition of geranylgeranyl biosynthesis activates transcription of *LC3* and elevates the LC3-II expression level through the JNK and ERK signaling pathways.

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Abstract Not Available

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Adjustable Passive Stiffness and Length Adaptation in Mouse Detrusor Smooth Muscle: A Mechanical Model for Disorders of Contractility and Overactivity

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Introduction: The mechanical processes of adjustable passive stiffness (APS) and length adaptation likely underlie normal bladder function and account for its ability to undergo a sevenfold length change during filling and to contract efficiently throughout this range in filling volume. The objective of this investigation was to identify APS and adaptation in a mouse model, in which genetic and molecular manipulations are widely available.

Materials and methods: Mouse bladder strips were used. Two strips, one with and one without urothelium were cut from each bladder. Both strips were hung between clips attached to isometric force transducers. KCl was used to stimulate tissues. Three series of passive tension measurements were made at 80, 90 and 95% of optimal length (Lo) at peak active tension to find APS. Three consecutive contractions at Lo + 1 mm (Lref) were completed to find adaptation.

Results: Passive tension at each length was increased if tissues were contracted at 50% Lo, but not increased if tissues were not contracted, revealing the existence of APS in the mouse bladder ($p<0.05$, N=5). Active tension in bladder strips at Lref in KCl with and without urothelium increased with successive contractions, confirming the presence of adaptation in the mouse bladder ($p<0.05$, N=4).

Conclusions: This is the first study to demonstrate that APS and adaptation occur in a mouse bladder model. Further research into molecular pathways involved in these mechanical processes may identify novel therapies for treatment of disorders of bladder contractility and overactivity that are prevalent in our aging population.

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Genomic Study of Prostate Cancer Disparities Reveals Differential mRNA/miRNA Expressions and Copy Number Variations between Caucasian and African American Populations

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Introduction: Prostate cancer (PCa) is a disease conferred by gene mutations, numerous alternations in gene expression and aberrant changes in genome composition. An area of research that continues to garner attention is PCa disparities, wherein the African American (AA) population exhibits higher incidence and mortality rates compared to Caucasian Americans (CA).

Materials and methods: We applied integrated genomic technologies to investigate RNA and miRNA expressions, alternative splicing events, and DNA copy number variations (CNVs) in AA and CA populations. RNA and DNA purified from PCa and paired adjacent normal prostate tissues from AAs and CAs were processed and hybridized onto Affymetrix human Exon and SNP arrays.

Results: Pathway analyses have revealed a differential testosterone metabolism network between normal AA and normal CA tissues, and activated inflammatory response, up-regulated oncogenic pathways associated in AA cancers when compared with CA cancers. In addition, our mRNA expression and CNV atlas further identified hundreds of genes exhibiting differential splicing patterns or copy number aberrations between the AAs and CAs, representing candidate genes mediating PCa disparities. Notably, at least 13 genes residing within the 5 oncogenic signaling pathways have been identified as exhibiting either differential splicing or CNVs between AA and CA PCa specimens.

Conclusions: Our data suggest that gene-network rewiring, mRNA splicing and CNV may play important roles in the PCa disparities between AA and CA populations. Further identification of these critical genetic elements related to PCa disparities may facilitate the development of biomarkers for screening, early detection, and prediction of clinical outcome.

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Contemporary Evaluation of Blood Loss and Need for Transfusion During Open Radical Prostatectomy

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Introduction: Contemporary product marketing and literature discussing open radical retropubic prostatectomy (RRP) with respect to estimated blood loss (ebl) and need for blood transfusion quote ebl values 1000-1500 cc for open RRP. The majority of this data was collected in the late 1990's and no longer reflects contemporary practice. In this report, we evaluated the contemporary, longitudinal change in ebl, post-operative hemoglobin, and need for any (auto or hetero) blood transfusion between 2001 and 2008 by a single surgeon.

Methods: Between 2001 and 2008, 1111 men underwent RRP and had evaluable clinical records. We retrospectively determined the ebl (cc), change in hemoglobin (hbg, g/dl) and need for transfusion from the records and summarized for two year intervals. Note that between 2001 and 2005 it was standard practice to ask each patient to auto-donate 2-3 units of packed red blood cells which were transfused as a standard practice. All values represent mean, (min and max) and percent of group when appropriate.

Results:

Variable	2001-2002	2003-2004	2005-2006	2007-2008
Number	188	296	385	242
ebl (cc)	900 (200-3200)	963 (200-3000)	691 (100-2400)	543 (100-2000)
Hgb change (g/dl)	3.5 (0.5-6.3)	3.4 (0-5.9)	3.6 (0-7.2)	3.6 (1.5-12.3)
% transfused	95%	93%	39%	1%

Conclusions: Transfusion rates after RRP have dropped dramatically due to decreased blood loss and the lack of pre-op autologous blood donation. The contemporary ebl for open RRP is an average of 500-600 cc with a post-operative hemoglobin change of only 3.6 g/dl and suggests there is no need for pre-operative blood donation. A transfusion rate of 1% demonstrates the safety and cost savings achieved.

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Surgical Complications following Robotic Assisted Laparoscopic Radical Prostatectomy: The Initial 1000 Cases stratified by the Clavien Classification System

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Purpose: To determine the incidence of surgical complications resulting from robot assisted laparoscopic radical prostatectomy (RALP) during the initial phase of a new robotics program. A secondary goal was to see if experience changed the incidence of complications.

Materials and methods: A prospectively maintained database was used to evaluate the first 1000 consecutive patients treated with a RALP from 1/2004 to 6/2009. The database was reviewed for evidence of complications occurring within 30 days of surgery. Transfusions and readmission data was obtained by retrospectively reviewing hospital records. The Clavien classification system, a standardized scale for complication reporting, was applied to all events. The complication rate was determined per 100 patients treated and tested with logistic regression for a relationship with experience.

Results: Ninety-Seven patients (9.7%) experienced a total of 121 complications. Eighty-one patients experienced a single complication and 16 patients experienced ≥2 complications. There were 3 conversions to an open approach. A total of 15 patients (1.6%) received a transfusion. The average hospital stay was 1.25 days and 11% required either a return visit to the emergency department or readmission. The majority of complications (69%) were either grade I or II. Five grade IVa complications occurred, and there were no deaths. The complication rate decreased with experience when the first 500 cases were compared to the latter 500 cases (p=0.007).

Conclusions: Complications following RALP are commonly minor, requiring expectant or medical management only, even during the initiation of a RALP program. The complication rate improved significantly during the study period.

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Laparoscopic Retroperitoneal Lymph Node Dissection with Therapeutic Intent in Men with Clinical Stage I Nonseminomatous Germ Cell Tumors

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Introduction: Laparoscopic retroperitoneal lymph node dissection (RPLND) as a primary means of therapy for patients with clinical stage I nonseminomatous germ cell tumors (NSGCTs) remains controversial. The object of this study was to assess the outcomes of patients with clinical stage I NSGCTs who underwent laparoscopic RPLND with therapeutic intent.

Materials and methods: We retrospectively reviewed the pathologic and clinical outcomes of 30 consecutive patients who underwent a laparoscopic RPLND with therapeutic intent for clinical stage I NSGCT from July 2006 to December 2009. Patients underwent an extended template laparoscopic RPLND including dissection behind the great vessels. A full bilateral dissection was performed if metastatic disease was discovered intraoperatively.

Results: Of the 30 patients, 9 (30%) were discovered to have pathologic stage II disease. The mean number of nodes removed at the time of laparoscopic RPLND was 28 (range: 6-82). Of 6 patients found to have pN1 disease, 4 (67%) did not receive adjuvant chemotherapy and are without evidence of disease at a mean follow-up of 24 months. Two (12%) patients with pathologically confirmed stage I disease recurred following laparoscopic RPLND, both outside of the retroperitoneum.

Conclusions: Laparoscopic RPLND with therapeutic intent can be performed with acceptable oncologic efficacy with the additional benefit of decreased morbidity and shorter convalescence times. Early data suggest that patients with pathological N1 disease can safely be observed following laparoscopic RPLND, although longer follow up and additonal patients are needed to validate these results.

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Rectal Injury During Robot Assisted Radical Prostatectomy (RARP): Incidence And Management

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Introduction: Rectal injury during RARP is a rare complication with potentially devastating outcomes. We examined the rectal injury data from four high volume institutions including the management of each.

Materials and methods: This was a multi-institutional, retrospective review of RARP cases complicated by rectal injury. All institutions provided specific case details including time of recognition and management.

Results: A total of 7 cases of rectal injury were identified from a pool of 3645 RARP cases. Mean age was 65.5 years. A magnesium citrate bowel preparation was administered preoperatively in all cases. Cumulative incidence was 0.2% (7/3645). All were full thickness injuries. Pathologically. a positive margin was present in 29% of cases (2/7) and extracapsular extension was noted in 43 % (3/7).
Fifty seven percent (4/7) of injuries were identified intra-operatively. Three injuries were during the posterior dissection. 2 were repaired via a double layer and 2 via a triple layer closure. 3-0 Vicryl was the preferred suture, although a 3-0 silk was used in one case. One had a diverting colostomy. All 4 cases underwent full, uncomplicated recovery.
Three injuries (3/7), not identified intra-operatively, had a delayed presentation as a rectourethral fistula without any septic complication. Each was managed by fistula repair with either diverting ileostomy (1/3) or colostomy (2/3).

Conclusions: Rectal injury during RARP is very rare (0.2%). Cases of unrecognized injury often necessitate bowel diversion. If identified intra-operatively without evidence of gross fecal contamination, a primary multi-layer repair appears to be a safe and effective management option.

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Laparoendoscopic Single Site Surgery (LESS): Initial Observations and Perioperative Outcomes in Patients Undergoing Renal Surgery

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Introduction: Laparoendoscopic single site surgery (LESS) is a novel approach recently introduced with the aim of further decreasing the invasiveness of laparoscopic surgery. We report our initial experience with LESS in patients undergoing renal surgery.

Materials and methods: After institutional review board approval, retrospective review of our minimally invasive surgery database identified 21 LESS renalprocedures performed between November 2008 and March 2010 by a single surgeon (MEA). Demographic information and perioperative parameters were recorded. All procedures were performed using a transperitoneal technique and a custom made port.

Results: The distribution of the 21 procedures were as follows: 5 Simple Nephrectomy, 2 Renal Biopsies, 2 Partial Nephrectomy, and 12 Radical Nephrectomy. Two of the patients in this cohort were renal transplant recipients and underwent bilateral nephrectomy. For patients undergoing LESS radical nephrectomy, 7 were males, the mean age was 57.5 (range 19-82), and mean ASA score was 2 (range 1-3). Seven (64%) were right sided procedures and mean tumor size was 5.2cm (range 2.1-8.5) with 1 patient having renal vein involvement (T3b). Estimated blood loss was 60cc, length of stay was 3.9 days, and all surgical margins were negative. One patient suffered a dihescence and required reclosure. No other major complications were experienced.

Conclusions: LESS appears to be safe and feasible in this limited group of patients. An inherent advantage to this technique is the cosmetic result. Prospective comparative trials are needed to define the role of this approach within the urologist's armamentarium.

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Glove Perforation During Urological Surgical Procedures: A Pilot Analysis of Minimally Invasive and Open Approaches

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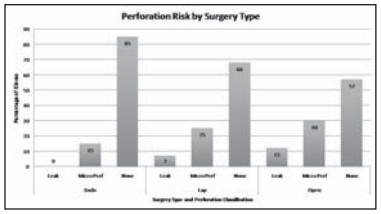
Introduction: Surgical glove perforation may occur during surgery and can place both the surgeon and patient at risk. The advent of minimally invasive techniques has presumably minimized the risk of glove perforation compared to open surgery. This study investigates the glove perforation rates between open and minimally invasive urologic procedures.

Materials and methods: Over a 1 month period, surgical gloves were collected from a variety of surgical cases. A total of 180 gloves were collected including 59 from endoscopic, 72 from laparoscopic, and 49 from open procedures. The gloves were tested for perforation using the standard water load test as well as a more sensitive test of electrical conductance. These readings were obtained using a multimeter to detect microperforations. The rate of perforations was analyzed and compared.

Results: The rate of perforation by surgery type is shown in Figure 1. Endoscopic procedures were associated with the lowest rate of glove perforation while open surgery was associated with the highest. Gross perforations tended to cluster around the index finger and thumb. Perforations were not associated with the length of the procedure or surgeon handedness.

Conclusions: Glove perforations can occur during all types of urological surgical procedures. The rate of perforation during minimally invasive surgery, while less than that associated with open surgery, is not insignificant and warrants double gloving.



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Toremifene Demonstrates Reduction in Fracture Risk in Men Less Than 80 Years of Age on Androgen Deprivation Therapy

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Introduction: Androgen deprivation therapy (ADT) in prostate cancer is associated with increased fracture risk. In a Phase III trial toremifene, a selective estrogen receptor modulator (SERM), significantly decreased fracture incidence in men receiving ADT.
There was an increase in venous thromboembolic events (VTE) primarily in men on toremifene ≥80 years of age . VTEs occurred in 1.5% and 2.5% of men <80, ≥80 respectively in the overall study. We sought to identify the patient population with the greatest benefit/risk profile.

Materials and methods: In this subset analysis of men <80 years of age receiving ADT for prostate cancer, 430 men received toremifene 80 mg and 417 received placebo. The primary endpoint was new vertebral fractures. Secondary endpoints included fragility fractures and bone mineral density (BMD).

Results: Toremifene demonstrated a 79.5% relative risk reduction in the incidence of new vertebral fractures ($CI_{0.95}$: 29.8%-94.0%; P<0.005). Absolute reduction was 3.8% (4.8% placebo, 1.0% toremifene). Toremifene significantly increased BMD at sites measured (P<0.001 for all comparisons). There was a concomitant decrease in bone turnover markers (P<0.001 for all comparisons. VTEs occurred in 2.1% of the toremifene versus 1.0% (P=0.26) placebo group. Other adverse events were similar between groups

Conclusions: Toremifene significantly decreased the incidence of new vertebral fractures in men <80 years receiving ADT. Toremifene significantly improved BMD. Risk of VTE was lower than the overall study population. These results suggest an improved benefit/risk profile in men <80 receiving ADT.

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Initial Observations of the DISSRM (Delayed Intervention and Surveillance for Small Renal Masses) Registry

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Introduction: The DISSRM Registry was opened January 1, 2009, enrolling patients with small renal masses (SRM) ≤4.0 cm who chose intervention or active surveillance (AS).

Materials and Methods: Patients were enrolled after consultation regarding AS versus intervention. Those electing AS were placed on an imaging protocol (CT or MRI) every 4 months for 2 years, then 6 months for 3 years. SF-12 questionnaires were completed at enrollment, 6 and 12 months, and annually thereafter.

Results: At 14 months, 151 patients were enrolled. 104 (68.9%) elected intervention; 43 AS; 6 crossed-over; 4 withdrew. 88 (58.3%) were men, 116 (76.8%) were Caucasian. In the AS and intervention arms, median age was 71 and 61 (p<0.001), tumor diameter was 2.0 and 2.cm (p=0.01) respectively. Mean SF12 score at enrollment was 92.5 vs. 94.2 (p=0.62) and 94.3 vs. 102.3 (p=0.18) at 6 months. For those electing surgery, 72 (65.5%) underwent partial nephrectomy (20 [18.5%] open), 15 (13.6%) radical nephrectomy and 22 (20.0%) cryoablations (6 [5.6%] percutaneous)respect ively. Of the treated masses, 74 (69.2%) were RCC. Of 30 benign masses, 13 (12.1%) were oncocytoma, 7 (6.5%) were AML. Of 27 patients with a positive growth rate and the 12 patients with growth rates >0.5cm/year, pathology was RCC in 18 (66.7%) and 7 (58.3%) respectively. With a median follow-up of 7.2 months, there are no recurrences, progressions or deaths.

Conclusions: In a registry of patients with SRM, over 60% selected intervention versus AS. 70% of masses removed were RCC. Progression free survival is excellent with short follow-up.

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A Phase 3 Randomized Trial of Denosumab Versus Zoledronic Acid in Patients with Bone Metastases from Castration-Resistant Prostate Cancer

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Introduction: Men with castration-resistant prostate cancer (CRPC) may experience skeletal-related events (SRE) associated with bone metastases.

Materials and methods: Patients (n=1901) with metastatic CRPC, without prior IV bisphosphonate use, received the investigational fully human anti-RANKL monoclonal antibody denosumab 120 mg SC and placebo IV (n=950), or placebo SC and zoledronic acid (ZA) 4 mg IV (n=951) adjusted for creatinine clearance every 4 weeks. Supplemental calcium and vitamin D was advised. The primary endpoint was time to first on-study SRE, defined as pathologic fracture, radiation or surgery to bone, or spinal cord compression.

Results: Denosumab significantly delayed time to first on-study SRE compared with ZA, (HR 0.82; 95% CI: 0.71, 0.95; P=0.008.) Median time to first on-study SRE was 20.7 months denosumab vs. 17.1 months ZA, a difference of 3.6 months. Denosumab significantly delayed the time to first and subsequent on-study SRE (multiple event analysis) (HR 0.82; 95% CI: 0.71, 0.94; P=0.004). Overall, adverse event (AE) rates (97% each) and serious AEs (63% denosumab, 60% ZA) were similar, irrespective of potential relationship to study drugs. AEs of hypocalcemia were reported in 13% and 6% of denosumab and ZA patients. Osteonecrosis of the jaw occurred in 22 (2.3%) denosumab compared with 12 (1.3%) ZA patients (P=0.09).

Conclusions: Denosumab demonstrated superiority over ZA in delaying or preventing SREs in men with bone metastases from CRPC. Adverse events were consistent in both treatment groups with those previously reported in advanced cancer populations.

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Pre-operative Nomogram to Quantitate Likelihood of Malignant and High Grade Pathology Based on Anatomical Features of Enhancing Renal Masses

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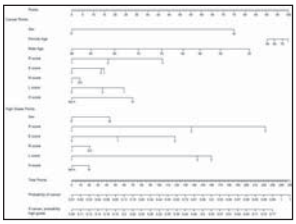
Introduction: Data suggest that differences exist in renal mass pathology based on tumor size, depth and location. We sought to evaluate whether preoperative radiographic attributes of renal masses could predict pathological characteristics using the Nephrometry Score (NS) and developed a comprehensive nomogram to quantitate pre-operative likelihood of malignancy and of high grade pathology.

Materials and methods: We queried our prospective Kidney Cancer Database for renal mass where NS was available. The individual components of NS were compared to pathological features of resected tumors by Kruskal Wallis tests. We used a multiple logistic regression to develop nomograms predicting the malignancy of tumors and likelihood of high grade disease among malignant tumors.

Results: NS was available on 525 of 1750 renal masses. 13.7% of the masses were benign and 38% were high grade. Nephrometry score correlated with both tumor grade ($p<0.0001$) and histology ($p<0.0001$). Small, endophytic, non-hilar tumor features predicted benign pathology (primarily oncocytoma). Conversely, large, interpolar, and hilar tumor features predicted high grade pathology. Based on this data, the resulting nomogram (Figure 1) integrates anatomic tumor attributes with patient's age and gender into a tool for pre-operative prediction of tumor pathology.

Conclusions: Anatomic features of renal masses appear to predict benign vs. malignant histology. Using the Nephrometry Score we developed a tool to quantitate pre-operative likelihood of malignant and high grade pathology of the enhancing renal mass.



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Gleason Score Upgrading in Relation to Obesity

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Introduction: The rates of upgrading of biopsy Gleason 6 prostate cancer are reported to be 30%-50% after radical prostatectomy. Furthermore, recent studies have shown a correlation between obesity and higher-risk pathologic features in prostate cancer. We have examined our robotic assisted laparoscopic radical prostatectomy (RALP) series to determine if increased BMI (≥30, obese) portends a higher risk of Gleason score upgrading.

Materials and methods: In all, 495 patients who underwent RALP from 2006 to 2010 were identified. A subset of 298 cases with biopsy Gleason 6 prostate cancer were stratified by BMI (normal to overweight: BMI < 30, obese: BMI ≥ 30) and analyzed.

Results: Of the 298 patients with biopsy Gleason 6 prostate cancer, 152 patients were overweight and 61 patients were obese. Gleason score upgrading occurred at an overall rate of 30.5%. When stratified by BMI, upgrading occurred in 29.4% of those with BMI < 30 and 39.3% of those with BMI ≥ 30 ($p=0.094$). When further subdivided by race, obesity had a statistically significant association with the rate of upgrading seen among Black men (25.4% in BMI < 30 vs 50% in BMI ≥ 30, $p=0.028$).

Conclusions: In our RALP series, among Black men with biopsy Gleason 6 prostate cancer, obesity was associated with a higher rate of upgrading. A trend towards this finding was seen among the general population, though not statistically significant.

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The Urachal Flap: A Previously Unreported Tissue Flap in Vesicovaginal Fistula Repair

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Introduction: Tissue interposition is imperative for the successful repair of complex vesicovaginal fistulae (VVF). The most common flap used in transabdominal VVF repair is the omental flap, which in some cases cannot be used. The urachus is well-vascularized tissue that is easily mobilized for interposition. We describe our experience using an urachal flap in VVF repair.

Materials and methods: Patients undergoing VVF repair with urachal flap interposition at our center were identified and a retrospective chart review was performed. Post-operative drainage included a foley catheter and a peri-vesical drain. Cystogram was performed 2 weeks post-operatively.

Results: 13 patients were identified. All were evaluated with history, physical, upper and lower tract imaging and cystoscopy. Median patient age was 49 years. Fistula etiology was hysterectomy in 11 and prolapse repair in 2. Five patients had failed previous repair. Fulguration of the fistula tract had failed in 2 patients. Twelve of thirteen patients had successful repairs with our described technique. There was no recurrence of fistula after median follow-up of 6 months. Two patients had a postoperative wound infection. Two patients had preoperative and postoperative complaints of stress urinary incontinence that was mild and did not require surgery.

Conclusions: VVF is a complex issue for reconstructive surgeons to address. The urachus is well vascularized tissue that can be easily mobilized and interposed in VVF repair. 12 of 13 patients in this series were successfully repaired. We continue to employ this technique and feel that further evaluation and usage of this flap indicated.

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Effect of Prostate Volume on Silodosin-Mediated Improvement of Symptoms Associated With Benign Prostatic Hyperplasia (BPH)

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Introduction: Combined data from 2 placebo-controlled phase 3 studies showed that silodosin significantly improved International Prostate Symptom Score (IPSS) and peak urinary flow rate (Qmax) in patients with symptoms of BPH. This retrospective analysis evaluated the relationship between estimated prostate volume (EPV) and symptom improvement.

Materials and methods: PV was estimated from prostate-specific antigen (PSA) levels as described (*J Urol.* 1999;53:581-589). Changes from baseline to wk12 (last observation carried forward) were compared between patients with EPV <30mL and those with EPV ≥30mL, using ANCOVA (baseline as the covariate).

Results: Of 466 patients taking silodosin (mean age, 65y), 450 provided PSA data at baseline (EPV range, 18.4-76.8mL); of those, 100 patients had EPV <30mL. The 2 subgroups had similar baseline values for IPSS and Qmax (Table). Silodosin-mediated reduction in IPSS from baseline to wk12 was numerically greater in patients with larger EPV, but the mean difference between the 2 PV subgroups was not statistically significant (Table). Mean changes in Qmax from baseline to wk12 were ≥2.3mL/sec in both subgroups, indicating silodosin provided clinically important improvement in Qmax, regardless of EPV.

Conclusions: Silodosin demonstrated improvements in IPSS and Qmax in patients with EPV <30mL and patients with EPV ≥30mL. Watson Laboratories, Inc. provided funding for this research.

Table. Change from Baseline (CFB) in IPSS and Qmax by Estimated PV

		<30 mL (N=100)	≥30 mL (N=350)
IPSS	Baseline, mean ± SD	21.0 ± 5.2	21.4 ± 5.1
	CFB to wk 12, mean ± SD	-5.4 ± 6.4	-6.7 ± 6.7
	Adj. mean difference (95% CI)	-1.2 (-2.6, 0.2)	
Qmax, mL/sec	Baseline, mean ± SD	8.9 ± 2.4	8.7 ± 2.6
	CFB to wk 12, mean ± SD	3.3 ± 5.4	2.3 ± 4.1
	Adj. mean difference (95% CI)	-1.1 (-2.0, -0.1)	

IPSS, International Prostate Symptom Score; PV, prostate volume; SD, standard deviation.

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Results of Dorsal Buccal Graft Augmented Anastomosis for Urethral Stricture

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Introduction: Dorsal buccal graft augmented anastomosis urethroplasty (BGAA) is an excellent option for long bulbar urethral strictures with a very narrow segment. We evaluated the outcomes of our BGAA.

Materials and methods: 87 patients underwent BGAA between 2000-2010. Charts were retrospectively reviewed. Failure was defined as recurrent stricture requiring intervention. Three weeks post surgery patients underwent voiding urethrography. Flexible cystourethroscopy is performed 6 months postop. Patients are then followed yearly.

Results: Mean age was 44 years. Followup averaged 49 months (range 1-112). Stricture etiology was idiopathic in 48/87 (55%), perineal trauma in 15/87 (17%), instrumentation in 9/87 (10%), non-specified trauma in 7/87 (8%), post hypospadias surgery in 4/87 (4.6%), post infectious in 3/87 (3.4%), radiation for local urethral cancer in 1/87. Mean stricture length was 6cm (range 2-15cm). 76/87 (87%) had previous urethral procedures, including dilation 61/87 (70%), urethrotomy 49/87 (56%), >/= 2 prior procedures 56/87 (64%), and urethroplasty 21/87 (24%) before referral to our center. Two buccal grafts were used on 21/87 (24%) of patients, one graft was used on 67/87 (77%). 83/87 (95%) of repairs were successful and 4/87 (4.6%) failed. Four patients underwent urethrotomy or dilation: all are free from recurrence. Another patient has a wide caliber recurrence being monitored. Significant complications included 1 pulmonary embolus, 1 venous thrombosis, 1 perineal wound infection and two post-operative fevers presumed to be febrile urinary tract infections.

Conclusions: Dorsal buccal graft augmented anastomosis has excellent results with a 95% success rate. Continued surveillance is needed to confirm durability.

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High PSA Density is a Predictor of Poor Pathological Outcomes Following Robot Assisted Radical Prostatectomy (RARP)

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Introduction: Prostate specific antigen density (PSAD) has been used to predict the likelihood of prostate cancer. The relationship between PSAD and positive margins has been described in open radical prostatectomy patients. Herein we examine PSAD as a predictor of pathological outcomes post RARP.

Materials and methods: A retrospective analysis of our RARP database was performed. Patients from July 2005 to July 2009 were grouped, based on a PSAD cutoff value 0.15 ng/ml. PSA density was calculated using preoperative PSA and prostate specimen weight. Both groups were then compared for extra-capsular extension (ECE), positive margins (PSM), seminal vesicle involvement (SVI), Gleason grade, and biochemical recurrence.

Results: Out of 1430 patients, the average PSA and PSAD were 5.8±4.7 ng/ml and 0.11±0.09 ng/gm, respectively. The mean PSADs for the high and the low PSAD group were 0.26±0.14 ng/gm and 0.082±0.032 ng/gm, respectively.
Chi square analyses for PSAD with ECE, SVI and PSM tables were significant (p<=0.001). The Odds ratios were 3.57, 2.41 and 5.31 for ECE, PSM and SVI, respectively. The percentage of patients pT3 was 44.35% vs. 18.55% and Gleason 8 and above was 13.78% vs. 3.54%, in high and low PSAD groups respectively.

Conclusions: PSAD predicts adverse pathological outcome with respect to ECE, PSM, SVI, pathological stage and Gleason grade. PSAD did not impact the incidence of biochemical recurrence however the follow-up in this group of patients is not yet mature.

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Safety and Tolerability in a Phase II/III, Open-Label, Multicenter Study of Intravesical Valrubicin for Bacillus Calmette-Guérin-Refractory Carcinoma In Situ of the Bladder

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Introduction: Intravesical valrubicin is approved for use in patients with carcinoma in situ of the bladder (CIS-B; nonmuscle invasive) who have failed Bacillus Calmette-Guérin (BCG) therapy and are not candidates for cystectomy. With the recent reintroduction of valrubicin following a temporary halt of availability owing to manufacturing concerns, the current analysis discusses the safety and tolerability data for valrubicin from 1 phase II/III trial.

Materials and methods: Valrubicin 800 mg was instilled once weekly for 6 weeks to patients with CIS-B who had failed ≥ 2 prior intravesical therapies (1 must have been BCG). Safety was evaluated at baseline and at 6 weeks, and adverse events (AE) were monitored.

Results: Of the 90 evaluable patients, most were men (88%), white (98%), had ≥1 BCG course (70% had ≥2), 3 prior intravesical therapies (median), and 4 resections (median); 87% received 6 valrubicin instillations. Common AEs classified as local bladder symptoms (LBS) included urinary frequency (66%) or urgency (63%) and dysuria (60%). Only 1 patient who received 2 instillations discontinued because of LBS (bladder spasms). Common non-LBS AEs included urinary tract infection (18%), asthenia (7%), urinary retention (6%), and urine abnormality (6%). Most AEs were mild to moderate; none was life threatening. A mean of 792 mg of anthracyclines was recovered (99% of dose; nonmetabolized [99.6%]) from urine within 24 hours (n=6 patients who received 14 doses).

Conclusions: The most common AEs were LBS, and most were mild or moderate in intensity. Urine-recovery data suggest negligible systemic absorption of valrubicin.

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Does ProPSA Predict Biopsy Progression on Active Surveillance?

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Introduction: Prior studies suggest an association between %proPSA and prostate cancer detection. Less is known about the utility of %proPSA in prostate cancer patients on active surveillance. Thus, our objective was to examine the relationship between %proPSA and biopsy progression among men enrolled in an active surveillance program.

Methods: In 186 men from our institutional active surveillance program, we used longitudinal Cox proportional hazards models to examine the relationship between %proPSA with progression on annual surveillance biopsy. The outcome of interest (progression) was defined in 2 ways: (1) any Gleason pattern 4 or 5, >2 positive biopsy cores, or >50% involvement of any core with cancer; and (2) upgrading to Gleason ≥7.

Results: Overall, 63 (33.9%) men had biopsy progression, including 27 with progression by Gleason score. Longitudinal %proPSA was significantly associated with progression to unfavorable biopsy (p=0.006) and Gleason grade progression (p=0.0008).

Conclusions: %proPSA levels were associated with the risk of short-term biopsy progression among men on active surveillance. Additional study is warranted to identify %proPSA cutpoints for clinical use and to examine the role of %proPSA in conjunction with other markers for monitoring patients enrolled in active surveillance.

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Comparison of Renal Function Outcomes in Patients Undergoing Radical Nephrectomy, Partial Nephrectomy and Cryoablation for Suspected Renal Cancer

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Introduction: Chronic kidney disease (CKD) is a significant contributor to patient morbidity. With the increase in detection and treatment of renal masses a greater emphasis has been placed on nephron sparing surgery (NSS). In this series we compare the impact of radical nephrectomy (RN), partial nephrectomy (PN), and cryoablation (CA) on renal function outcomes as determined by estimated glomerular filtration rate (eGFR).

Materials and methods: A chart review from 2004 -2008 revealed 150, 69 and 72 patients undergoing RN, PN and CA for renal tumors respectively. Data was collected regarding patient demographics as well as clinical and pathologic characteristics. For each group eGFR was calculated preoperatively and 6-12 months post-operatively using the MDRD equation. Absolute and percent changes in eGFR were compared between groups.

Results: Data was available for 92, 44 and 63 patients undergoing RN, PN and CA respectively. There was no significant difference in baseline characteristics between RN, PN and CA with the exception of age. There was a significant decline in eGFR as well as percent change in eGFR in the RN group compared to both the PN and CA groups. This remained significant on multivariate analysis. While CA was associated with both greater percent decrease and absolute decrease in eGFR compared to PN, this result was not significant.

Conclusions: RN for treatment of suspected renal cancer results in a significant decline in renal function compared to NSS. These findings further support the utility of NSS if comparable oncologic outcomes can be reached.

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Regional Trends in the Management of Renal Masses

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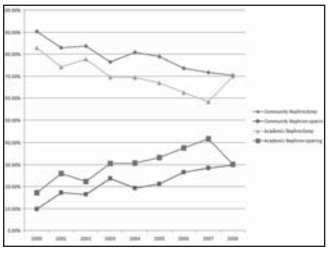
Introduction: Current management of renal masses emphasizes nephron sparing procedures. Due to the increasing number of incidentally discovered small renal masses, nephron sparing procedures may be appropriate treatment options. We analyzed Virginia epidemiologic data for changing practice patterns.

Materials and methods: Using the Virginia Department of Health Patient Level Database System reported via the Thomson Reuters Polaris Suite, we identified all patients hospitalized for a primary International Classification of Disease (9th revision; ICD-9) code referencing renal mass and compared the prevalence of nephrectomy, partial nephrectomy, and ablative procedures. Data analysis was performed using Microsoft Excel 2007 for both academic and community hospitals.

Results: We identified 4772 patients treated in Virginia from 2000-2008. The use of nephrectomy increased from 2000 to 2005 to a peak incidence of 438 in 2005 and stabilized. Nephron sparing techniques have consistently risen since 2000 with the peak incidence of 147 partial nephrectomies and 53 ablative procedures being performed in 2007. The proportion of all renal procedures performed that were nephrectomies has decreased in both academic and community hospitals while the proportion of nephron sparing procedures rose earlier and more rapidly at academic hospitals.



Conclusions: Virginia inpatient data indicate practice patterns for management of renal masses has been changing. There is increasing use of nephron sparing therapies relative to radical nephrectomy with academic hospitals appearing to have adopted new technology earlier.

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Biopsy Characteristics of Men with High-grade Organ-confined Prostate Cancer

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Introduction: Gleason sum predicts poor outcome after radical prostatectomy (RP), but men with organ-confined (OC) Gleason 8-10 prostate cancer (PC) have a high cancer-specific survival (CSS) at 15-years. We examined biopsy characteristics of high-grade PC patients who had RP to better select those who may benefit from RP.

Materials and methods: The Institutional RP database (1982-present) was queried; 1,174 men had Gleason 8-10 cancer at RP. Demographic and prostate biopsy characteristics were compared in men with OC (pT2) versus non-OC (>pT2 or N1) disease. All biopsies underwent central pathologic review. Logistic regression was used to determine predictors of OC disease. Kaplan-Meier analysis was used to determine survival outcomes.

Results: Biopsy data were available for 1,157 men (median cores 12 [2-20]). The 291 (24.8%) men with OC PC (vs. non-OC) had lower PSA (5.9 vs. 8.3), clinical stage (63.5% T1c vs. 35.4%), fewer positive cores (2.7 vs. 4.0), fewer percentage involvement of each positive core (PPC) (mean 17.6% vs. 69.7%), more HGPIN (16.6% vs. 10.1%) and ductal features (3.6% vs. 1.7%); less perineural invasion (PNI) (11.6% vs. 35.1%), and bilateral disease (31.3% vs. 43.5%) [$p<0.01$ for all interactions]. Multivariate logistic regression revealed PPC ≥50% (OR 0.17, $p=0.007$) and PNI (OR 0.23, $p=0.019$) reduced likelihood of OC disease. 15-year biochemical recurrence-free survival was 16.0% and 46.9%; CSS was 50.7% and 89.0% for non-OC and OC disease, respectively.

Conclusions: Men with OC high-Gleason PC at RP have favorable outcomes. Predictors of OC disease were <50% PPC and absence of PNI on biopsy.

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Improved Detection of Prostate Cancer Using Contrast-enhanced Transrectal Ultrasound with Flash Replenishment Imaging

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Introduction: We evaluated prostate cancer detection using contrast-enhanced transrectal ultrasound with flash replenishment imaging (FRI) targeted biopsies.

Materials and methods: 209 patients referred for prostate biopsy were evaluated by transrectal US using an AplioTM scanner (Toshiba). A microbubble contrast agent, perflutren lipid microspheres (DefinityTM, Lantheus Medical Imaging, Inc.) was used. Enhanced and unenhanced US assessed abnormal echotexture or vascularity of the prostate, including standard grayscale, color/power Doppler, and FRI. FRI is a technique that uses high power flash pulses to destroy bubbles, followed by low power pulses to demonstrate contrast replenishment and depict vascular architecture. Up to 6 targeted biopsy cores were obtained from areas of abnormal vascular enhancement or morphology on FRI, followed by a blinded systematic 12 core biopsy.

Results: Prostate cancer was found in 339/3427 cores from 82/209 (39%) of subjects. Positive biopsies were obtained in 199/2508 (7.9%) of systematic cores and 140/919 (15.2%) of targeted cores. Among patients with a positive biopsy, the odds ratio for a positive core with targeted biopsy versus systematic biopsy was 3 (95% CI: 2.2-4.1, $p<0.001$). Mean percentage of systematic biopsy core involvement was 32% among patients with a positive targeted core, compared with 17% among patients who were missed by targeted biopsy (p6) was more common among patients with a positive targeted biopsy (48% versus 16%; $p=0.005$).

Conclusions: Targeted prostate biopsy using FRI selectively detects high volume cancer with Gleason scores of 7 and higher. Low volume cancer and Gleason <7 is less frequently detected by FRI-targeted biopsy cores.