RESIDENTS COMPETITION - I

ABSTRACTS
Introduction: Robotic assisted partial nephrectomy (RAPNx) is evolving to become the accepted standard for small renal masses and appropriately selected larger masses. At the M.E. DeBakey Houston VAMC we started performing RAPNx in April 2010. As a teaching hospital, residents, under direct faculty supervision, perform significant portions of the operation. The objective of the study is to assess the feasibility and safety of our RAPNx surgical teaching technique.

Methods: From April 2010 until June 2014 we retrospectively reviewed our database of robotic assisted partial nephrectomies, to include the assessment of surgical outcomes, ischemia time, blood use, renal function, etc.

Results: Approximately 70 resections have been completed. Median age was ~60 (IQR53.5-65); 84.4% (n=49) had an ASA score of 3 or higher; Median tumor size was 3 cm (IQR 2.4-4.5); Median renal nephrometry score was 6 (IQR 5-8); Median ischemia time was ~20 mins (IQR 15-30). Two cases (2.7%) were converted to open for tumor complexity and bleeding. 4 cases (5.3%) were converted to radical nephrectomy (3 were unresectable, 1 for bleeding). Median blood loss was ~200 mL (IQR 100-475). 5 cases required intraoperative blood transfusion (8.2%). The median change in creatinine and GFR pre and postoperatively was 0.035 (IQR -0.083-0.18) and -4 (IQR -11-6). Median length of hospital stay was 4 days (IQR 3-4.75). There were 3 Clavien IIIa complications (4%) (2 pseudoaneurysms requiring embolization, 1 NSTEMI with percutaneous interventions, 1 pneumothorax requiring chest tube placement).

Conclusion: In a series of patients undergoing RALPNx at a major teaching medical center with active resident surgeon participation, the surgical outcomes are comparable in terms of warm ischemia time, blood loss, hospital stay, and change in renal function, to larger published series. Hands on resident training, with a dual console DaVinci platform, does not seem to adversely affect safety or efficacy of the technique.
CONTEMPORARY EVALUATION OF THE DIAGNOSTIC ACCURACY OF URINE CYTOLOGY AND UROVYSION FISH

Joseph Fantony MD, Richmond Owusu MD*, Ajay Gopalakrishna BS*, Rajesh Dash MD*, and Brant Inman MD MSc*
Durham, North Carolina. Presentation to be made by Dr. Joseph Fantony

Objective: Determine, in a contemporary cohort of patients, the diagnostic performance of urine cytology and Urovysion FISH for predicting the presence of urothelial tumors identified by white light cystoscopy.

Methods: We retrospectively reviewed all subjects treated within the Duke University Health System that had a urine cytology, Urovysion FISH, and cystoscopy performed within a 30-day interval from 2004-2012. White light cystoscopy was considered the diagnostic gold standard against which cytology and FISH were compared. Standard diagnostic test performance metrics were calculated using generalized linear models (GLM). To adjust for repeated/clustered testing within subjects, we used generalized linear mixed models (GLMM) and generalized estimating equations (GEE).

Results: A total of 761 test triplets occurred in 311 subjects. Median age was 75.4 years, 70% were male, 85% were Caucasian and 11% were African American. FISH marker abnormalities were found in Chr3 (38%, mean=5.1 cells/25), Chr7 (37%, %, mean=4.8 cells/25), Chr17 (34%, %, mean=4.4 cells/25), and 9p21 (3%%, mean=1.2 cells/25). Both tests were affected by repeated measures and their performance summarized below. Agreement between FISH and cytology was moderate (kappa=0.22, p<0.001).

Conclusion: Neither urine test performed as well in this contemporary cohort as previously reported. The poor FISH results may be attributable, in part, to “anticipated positive testing” where a positive FISH test precedes a future positive cystoscopy. Lagging the time horizon to which a positive FISH can be applied to a cystoscopy beyond 30 days might improve its performance.

Source of funding: None

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IN VIVO STONE COMMINUTION PRODUCED BY A MODIFIED ACOUSTIC LENS FOR ELECTROMAGNETIC LITHOTRIPTERS

Andreas Neisius1,2, Nathan Smith3, Nicholas J. Kuntz1, Tim Schykowski1, Gaston M. Astroza1, Michael E. Lipkin1, Walther N. Simmons3, Glenn M. Preminger1 and Pei Zhong1,
1Duke University Medical Center, Division of Urologic Surgery, Durham, NC, USA
2University Medical Center Mainz, Department of Urology, Mainz, Germany
3Department of Mechanical Engineering and Materials Science, Duke University, Durham, NC, USA

Purpose: The acoustic lens of a Siemens Modularis electromagnetic shock wave lithotripter has been further modified to reduce pre-focal cavitation while generating a pressure waveform and broad focal zone mimicking that of the Dornier HM3. In this study, we sought to determine the comminution efficiency of the modified lens following a clinical therapy regime and compared the results to comminution produced by the original lens in a swine model.

Materials and Methods Using the maximum energy level (E+ = 44 mJ) that is safe for lithotripsy (i.e., without formation of gross hematoma), we have compared stone comminution produced by the original and modified lenses in vivo using hard cylindrical Begostones of 5 x 10 mm, surgically implemented in pig kidneys. A clinical protocol with a soft ramping scheme was used to deliver 3000 shock waves to each kidney using a pulse repetition frequency of 1.5 Hz, leading to a total accumulated energy of 112.84 J. Following lithotripsy, kidneys were harvested, dissected, all visible stone fragments were collected, dried and filtered with standard sieves with decreasing mesh size of 4, 2.8, and 2 mm, respectively. Final comminution efficiencies were determined by the percentage (by weight) of fragments less than 2 mm. An unpaired two-tailed student's t-test was used to compare fragmentation results.

Results: At E+ = 44 mJ, the modified lens (12 renal units) showed a comminution efficiency of 72.8% (±21.4%) compared to 63.6% (±21.8%) for the original lens (10 renal units) overall, p= 0.058. When considering stones not trapped in the DJ loop and those with no spread >2cm, comminution efficiency was 88.8% (±10.9%) for the modified lens vs 54.1% (±23.3%) for the original lens, p=0.013.

Conclusions: With our latest lens modification the electromagnetic lithotripter demonstrates better stone comminution under a clinically relevant energy setting and treatment protocol when compared to the original lens. This lens modification could be retrofitted to most electromagnetic lithotripters, thereby improving efficiency of clinical stone fragmentation.
INTRODUCTION: Multiple studies have linked pre-operative nutrition status to post-operative outcomes. To date, few of these studies have evaluated urologic patients, and no study has undertaken as comprehensive of an analysis of urologic surgery patients. We used a standardized, national, risk-adjusted surgical database to evaluate the 30-day outcomes of patients undergoing common urologic oncologic procedures as they relate to patient preoperative nutritional status.

METHODS: The American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) is a risk-adjusted data collection analyzing preoperative risk factors, demographics, and 30-day postoperative outcomes. From 2005-2012, we identified a total of 17,805 patients who underwent prostatectomy, nephrectomy, partial nephrectomy, cystectomy, or transurethral resection of bladder tumor (TURBT) in which preoperative albumin level was also collected. Hypoalbuminemic patients were compared to those with normal preoperative albumin and 30-day outcomes were evaluated. Logistic regression analyses were used to estimate odds ratios for mortality and complication rates for the above procedures.

RESULTS: Evaluation of the cohort noted significantly increased risk of overall morbidity, serious morbidity, and mortality in the hypoalbuminemic group (P<0.01 for all procedures). Hypoalbuminemia, was associated with a significantly higher 30 day mortality in both major inpatient procedures such as cystectomy, and in outpatient procedures such as TURBT (P<0.01). These findings remained significant after adjustment for other risk factors.

CONCLUSIONS: The large sample size, standardized data definitions, and quality control measures of the ACS-NSQIP database allow for in depth analysis of subtle but significant differences in outcomes between groups. Pre-operative serum albumin is a strong predictor of short term post-operative complications in the urologic oncology patient.
INTRODUCTION AND OBJECTIVES: Prostate cancer outcomes are challenging to predict given the heterogeneous nature of this disease process. Nomograms are routinely utilized as a means to more accurately project a patient's course. Body mass index (BMI) and prostate gland size are two readily available patient characteristics that are not employed in current models. We hypothesize that inclusion of this additional patient data will more accurately predict the presence of aggressive prostate cancer.

METHODS: The Center for Prostate Cancer Research (CPDR) database from 1989 to 2011 was queried for patients that underwent radical prostatectomy with BMI and gland size data available. 2,961 patients met inclusion criteria. 772 were identified as having aggressive prostate cancer, which was defined as pT3 or greater, positive lymph nodes, Gleason 7 with positive surgical margins, or Gleason > 8 with negative margins. Multivariate logistic regression models were constructed using age, prostate specific antigen (PSA), number of positive biopsy cores, race, clinical stage, and biopsy Gleason score. BMI and gland size were included and excluded as variables in the models for comparison and receiver operator characteristic curves were generated to test the performance of these models with and without the inclusion of BMI and gland size.

RESULTS: On multivariate analysis predicting aggressive prostate cancer, BMI (OR=1.029, p=0.0246) and prostate gland size (OR=0.984, p<0.0001) were associated with risk of aggressive disease, with a protective effect for gland size. Receiver operating characteristic curves with calculated area under the curve (AUC) showed improved performance of the model when including BMI, (0.7282 vs 0.7129, p=0.003), prostate size (0.7397 vs 0.7129, p<0.0001), and both (0.7396 vs 0.7129, p<0.0001 – See Figure).

CONCLUSIONS: BMI and gland size are readily available clinical variables in our patient population. Inclusion of these characteristics can improve the predictive accuracy of prostate cancer nomograms and may assist with treatment decisions and risk stratification following prostatectomy.

Source of Funding: none
EVALUATION OF ANDROGEN RECEPTOR FUNCTION IN AFRICAN AMERICAN AND CAUCASIAN AMERICAN PROSTATE CANCERS

Aaron Brothers1,2, Denise Young1, Yongmei Chen1, Gyorgy Petrovics1, Jennifer Cullen1, Inger L. Rosner1,2, David G. McLeod1,2, Albert Dobi1, Shiv Srivastava1, Isabell A. Sesterhenn, 1CPDR, Department of Surgery, USUHS, Bethesda, MD; 2Urology Service, WRNMMC Bethesda, MD, 3Joint Pathology Center, Silver Spring, MD

Presented by: CPT Aaron Brothers

Objective: Dysregulation of androgen receptor (AR) is commonly observed in aggressive prostate cancers and may lead to early biochemical recurrence and quicker development of castrate resistant prostate cancer. The hypothesis of this study is that the in vivo status of AR function in prostate tumor cells can be precisely defined by measuring the expression of a panel of AR regulated genes. The objective of this study is to evaluate a panel of AR regulated genes by immunohistochemistry (IHC) to predict the course of prostate cancer progression focusing on African American and Caucasian American patients.

Methods: Index tumors of whole-mounted radical prostatectomy specimens were analyzed for the expression of PSA, NKX3.1, ERG and AR in 80 CaP cases by IHC. Expression levels were assessed by both the amount and intensity of immunopositive cells in the index tumors. A final score was determined after multiplying the intensity score and percentage of positively stained area in the respective lesions.

Results: Decreased expression of PSA and NKX3.1 was observed in index tumors of both AA and CA men with poorly differentiated/ISUP/Gleason score 8-10 carcinoma. In contrast, ERG protein was absent in majority of index tumors of AA men.

Conclusion: Detection of AR dysregulation by immunohistochemical staining of AR regulated genes may lead to the early identification of patients with higher risk for progression in both AA and CA patients.
Purpose: Improvements in MRI resolution have led to increased reliance on MR imaging in prostate cancer active surveillance or to aid in presurgical planning. We sought to compare presurgical MRI findings to final pathologic outcomes in men undergoing prostatectomy to evaluate our MRI sensitivity and specificity.

Materials and Methods: Since 2012, NMCSD has completed 97 robotic assisted laparoscopic prostatectomies (RALP)—of those, 10 had a preoperative multiparametric prostate MRI using a 3 Tesla magnet without endorectal coil. MRI reports were retrospectively reviewed for comments on extracapsular extension of prostate cancer, presence of cancer invasion into seminal vesicles, and presence of pelvic lymphadenopathy. The radiology reports were then compared to final prostate pathology reports.

Results: Of the 10 RALPs performed, 3 patients had been on a period of active surveillance and 7 had high risk features that were evaluated using pre-surgical MRI. The sensitivity of the MRI in detecting extracapsular extension for the entire cohort was 50% (2/4) and specificity was 83.33% (5/6). Seminal vesicle invasion was found in 20% of cases on final pathology, yielding an MRI sensitivity specificity of 50% (1/2) and 87% (7/8), respectively. Positive lymph nodes were detected in 2 MRIs and found in 2 (though both not the same) patients on final pathology, resulting in a 50% (1/2) sensitivity and 100% (6/6) specificity.

Conclusions: Multiparametric MRI is an evolving adjunct to prostate cancer management. Our early data shows MP-MRI carries low likelihood ratios for identifying prostate cancer spread however due to limited data, there is a need for further evaluation of MP-MRI as an instrument for treatment planning for prostate cancer treatment.

Source of Funding: None.
DOES PTEN LOSS HAVE A ROLE IN DETERMINING PATIENTS ON ACTIVE SURVEILLANCE FOR PROSTATE CANCER WHO WILL NEED DEFINITIVE THERAPY?

Uzoamaka O. Nwoye MD*, Jason A Gregory MD*, Thomas A Adams MD*. San Antonio, TX
(Presentation to be made by Dr Uzoamaka Nwoye)

Purpose: PTEN gene deletion has been seen in up to 68% of prostate cancer. Studies evaluating PTEN deletion and prostate cancer have shown an association with PTEN loss and high grade and high stage prostate cancer. Other studies have shown poorer oncologic outcomes mostly in intermediate to high risk prostate cancer. Regarding lower grade prostate cancer, though rate of PTEN loss is low, it has been found to be associated with increased risk of Gleason score upgrading and to predict disease progression. In patients managed conservatively, PTEN loss as evaluated using TURP chips was found to have additive prognostic value to Gleason score, PSA, Ki-67 and extent of disease. The goal of our study is to determine if PTEN loss can be used as an additional bio marker to determine patients on active surveillance who are more likely to have disease progression and therefore require treatment.

Materials and Method: Tumor Registry at SAMMC was queried to obtain a list of patients on active surveillance for prostate cancer between January 2003 and December 2008. Patients were included if they were <76 of age, had Gleason 3+3=6, and were initially managed with active surveillance. They were excluded if they had evidence of metastasis on presentation or were treated within 6 months of initial diagnosis. Primary end point was definitive therapy and disease progression.
PTEN loss was defined based on the previously validated dichotomous IHC variable by De Marzo et al..

Results: 53 patients met criteria and were included in the study. Mean age was 64 (45-75), mean initial PSA of 5 (1.01-36.6). Majority of patients had T stage of cT1c (69.8%) and low volume disease- one core positive (54.7%). 21 patients had 1 or more follow up biopsies, of these, 18 patients had no disease on repeat biopsy, 1 had too small to grade disease, 1 each had Gl 3+4=7 and Gl 4+3=7 and 10 had no change in grade (Gl 3+3=6). 43% (23) of patients had treatment of disease during the course of follow up. Only 3 of the 23 had evidence of disease progression prior to treatment. 2 of the 3 patients had PTEN loss. 8 patients had disease progression. 15% of patients with PTEN loss and 15% of patients with PTEN expression had disease progression on follow up. There was no statistically significant difference in race, age or initial PSA between the group with PTEN expression and PTEN loss. We noted a tendency towards treatment of disease in patients with PTEN loss though this did not reach statistical significance.

Conclusion: The rate of PTEN loss in low grade prostate cancer is low. However despite its small sample size, our study shows a tendency towards eventual treatment of prostate cancer in patients with PTEN loss on active surveillance. Large prospective studies are needed to validate these findings which suggest that PTEN expression can be used as an added biomarker for sub-selection of low risk prostate cancer who would benefit from active surveillance.

Source of Funding: 59 CSPG Clinical Research Division, Lackland AFB, TX
Objective: Activation of the ERG protooncogene is the most frequent oncogenic event in prostate cancer due to recurrent chromosomal gene fusion. Our laboratory and others have previously demonstrated that ERG is expressed in about 60% of Caucasian American and 30% of African American patients. An even lower ERG frequency is present in patients with Asian descent (e.g. China, Japan, India). No such information is available for Hispanics, an ethnic group predicted to rise to majority in the US population by 2050. The objective of this study is to determine ERG frequency in Hispanic patients with prostate cancer. As Hispanics in the USA have mixed Caucasian and African descent we hypothesize that their ERG expression frequency is between that of Caucasian and African American men.

Methods: Thirty four self declared Hispanics were selected from over 1,500 patients who underwent radical prostatectomy at WRNMMC between 1997 and 2012. All 34 prostates were prepared as whole mount specimens. These specimens were stained for ERG status using optimized immunohistochemistry procedures routinely used for ERG typing at CPDR.

Results: Fifteen out of the 34 whole mount specimen analyzed were positive for ERG expression. Two additional specimens had weak ERG positivity making the ERG frequency in Hispanics between 44 to 50% in this cohort.

Conclusions: As anticipated the frequency of ERG expression in Hispanics falls between that of Caucasian and African Americans. It is likely that the hybrid genetic makeup of Hispanics contributes significantly to this finding.
Purpose: Radiation cystitis and proctitis are known complications of radiation therapy (RT) for prostate cancer and occur in 5-20% of patients. This retrospective analysis evaluates late bladder and rectal toxicity and the efficacy of hyperbaric oxygen therapy (HBOT) for treatment of radiation cystitis and proctitis.

Materials and Methods: The San Antonio Military Medical Center Tumor Registry was queried between the years of 2000 and 2006 to identify those individuals who underwent RT for prostate cancer. Inpatient and outpatient medical records were reviewed to identify patients who underwent HBOT secondary to radiation induced genitourinary and gastrointestinal symptoms after RT. HBOT was delivered with 100% oxygen for 90 minutes at 2.0 to 2.4 atmospheres with a mean number of 44 treatments. Patients with no documented follow-up in the electronic medical record or who underwent salvage prostatectomy were excluded.

Results: 344 patients were treated with RT for prostate cancer. 240 met our study inclusion criteria with a median follow-up 90 months. Patients received primary, adjuvant, or salvage radiotherapy (67-145 Gy). Hemorrhagic cystitis and proctitis were diagnosed in 24% and 20% of patients, respectively, after completion of RT. A total of 13 patients underwent 15 HBOT sessions, 9 for cystitis, 5 for proctitis and 1 for both. Cystitis was diagnosed a median of 36 months after completion of radiation therapy with a median initiation of HBOT 21 months after diagnosis. Proctitis was diagnosed a median 11 months after radiation therapy with initiation of HBOT 11 months after diagnosis. Following HBOT, patients had a 74% decrease in the number of procedures required compared to before therapy. 82% of patients with cystitis and 85% of patients with proctitis reported improvement in their symptoms following hyperbaric therapy. No adverse events were related to HBOT and compliance was high.

Conclusions: In this robust RT series for prostate cancer, late radiation toxicities are higher than previously reported. HBOT is an effective and safe therapy option in the management of radiation cystitis and proctitis. Early initiation of HBOT may improve patient quality of life, hasten recovery, and decrease subsequent procedural requirements.

Source of Funding: None
CULTURE DIRECTED ANTIBIOTIC PROPHYLAXIS REDUCES POST-PROSTATE BIOPSY INFECTIOUS COMPLICATIONS IN THE COMMUNITY: A “HOW TO” FOR UROLOGISTS IN THE TRENCHES

James S. Farrell1 DO, Carolyn Salter*1 MD, Jennifer Cullen*2 PhD, MPH, Robert Mordkin*3 MD, Andrew Joel*3 MD. 1Bethesda, MD; 2Rockville, MD; 3Arlington, VA. Presentation to be made by Dr. Farrell

Introduction: The rate of post-prostate biopsy infections is rising. We noted this trend in our practice and began using pre-biopsy rectal swab cultures to direct antibiotic prophylaxis (AP). Clinical investigation has shown culture-directed AP to be effective. Here we report our methods and results as validation that culture-directed AP works in the community.

Materials and Methods: We performed a retrospective chart review of 686 consecutive patients who underwent transrectal prostate biopsy from March of 2010 - April of 2013. The electronic medical record was queried for the AP used, rectal swab culture, post-biopsy infection, culture data, and (post-biopsy) hospitalization if applicable. Use of pre-biopsy rectal swab was incorporated into our practice in May of 2012. Each patient received 3 days of fluoroquinolone (FQ) prophylaxis or culture-directed AP. If antibiotic resistance to standard FQ prophylaxis was identified, then AP was adjusted appropriately.

Results: Of 543 patients receiving standard FQ prophylaxis, 17 had infectious complications (3.1%). Eight patients were hospitalized for post-biopsy sepsis and 4 had UTIs treated as outpatients. There were 143 patients who received pre-biopsy rectal swabs and culture-directed AP. Compared to standard AP, no patient having rectal swab culture-directed AP had infectious complications (p = 0.03). In this group, 19.5% did have resistant bacteria requiring alternative AP.

Conclusions: The use of a pre-biopsy rectal swab to direct AP reduced post-biopsy infectious complications in the community setting. The strategy is simple and it improves patient safety.

Source of funding: none
OPEN VERSUS ROBOTIC-ASSISTED LAPAROSCOPIC RETROPERITONEAL LYMPH NODE DISSECTION FOR TESTICULAR CANCER

Kimberly Fischer, M.D.1, Michael Santomauro, M.D.1, Eric Biewenga, M.D.1, Justin Nork, D.O.1, Patrick Scarborough, M.D.1, Ithaar H. Derweesh, M.D.*2, Sean P. Stroup, M.D.1-2, and James O. L’Esperance, M.D.1

1. Naval Medical Center San Diego, San Diego, CA
2. University of California, San Diego, CA

Introduction and Objectives: Robotic-assisted laparoscopic retroperitoneal lymph node dissection (RPLND) for testicular cancer is an advanced surgical technique that has been slow to gain acceptance due to technical challenges and concerns about patient safety and oncologic equivalence. Herein we report our initial series of robotic-assisted laparoscopic RPLND using a low-abdominal approach compared to the traditional open midline approach.

Methods: We conducted a retrospective review of 93 men with non-seminomatous testicular cancer who underwent either open or Robotic-RPLND for primary or selected post-chemotherapy cases. The robotic technique was performed using a low-abdominal approach with patients positioned in 15 degrees of Trendelenburg. An infraumbilical camera port, 3 robotic arm ports, and 2 assistant ports were placed in a lower abdominal configuration with the robot docked over the patient’s left shoulder. Hammock sutures on either side of the peritoneum were used to retract and elevate the small bowel, while the 3rd robotic arm retracted the duodenum anteriorly. This provided an excellent view of the all pertinent retroperitoneal structures while keeping the bowel in a near-anatomical position. A prospective, nerve-sparing approach was used for primary cases. Patient demographic, perioperative variables, and oncologic outcomes were assessed.

Results: From 2009 to 2014, 58 open and 35 robotic-RPLNDs were conducted in men with non-seminomatous germ cell tumors. Demographics, including age and BMI, were similar between groups. Details of the operations, including operative time, number of lymph nodes removed and complications also showed no significant difference (Fig 1). Occult stage II disease in primary patients was similar between groups, 18.5% vs. 23.4% (p=0.772) for robotic and open respectively. The change of hemoglobin at post-operative day 1 was 2.5 [1.8-3.3] for the open group, compared to 1.3 [0.7-2.1] (p=<0.001), suggesting less blood loss in the robotic group. Recovery was also accelerated in the robotic group with significantly less post-operative medication use, 148.9mg [48.8-497.6] morphine equivalents open compared to 29.2mg [12-59] robotic (p=<0.001); and shorter length of stay, 6 days [4.5-7] open and 3 [3-4] days robotic (p=<0.001).

Conclusion: Robotic-RPLND from a lower abdominal approach overcomes many challenges encountered during lateral or subcostal approaches and provides an excellent view of retroperitoneal structures. Supine positioning for robotic docking enables a thorough dissection of the retroperitoneum to meet oncologic goals. These data suggest equivalent oncologic outcomes with similar operative times, while achieving significant improvement in recovery time, postoperative pain, and blood loss.
RESIDENTS COMPETITION - II

ABSTRACTS
Purpose: Bladder neck contracture (BNC) following radical prostatectomy (RP) is a recognized complication that can occur in up to 1.4% of patients. Treatment is generally performed in a step-wise fashion and progresses from cystoscopy with dilation of the stenosis to transurethral incision or resection of the contracture. Although initial treatment is generally effective, recurrences do occur, and further management is both difficult and controversial. We present our experience with recurrent BNC refractory to conventional treatment and our approach to these challenging patients.

Materials and Methods: Four patients with recurrent BNCs who underwent complex bladder neck reconstruction at NMCSD between 2008 and 2011 were retrospectively identified. All patients had undergone multiple attempts at treatment of their stenosis with traditional transurethral incision or resection. Complex bladder neck reconstruction consisted of resection of the scarred bladder neck via a perineal approach with assistance through a previously placed suprapubic tube tract. Outcomes were then assessed including patency of the bladder neck, stability of any remaining stenosis, and successful placement of an artificial urinary sphincter (AUS).

Results: The average age of the patients was 74 years and three of the four individuals had undergone radical prostatectomies for prostate adenocarcinoma, with the remaining patient having a simple prostatectomy for benign prostatic hyperplasia (BPH) and bladder stones. Pre-operative indicators of morbidity in comparison to post-operative indicators were found to be improved and included number of clinic visits (28 vs 23.75), number of inpatient admissions (5.75 vs 2.25), numbers of urinary tract infections (8 vs 6.75), and numbers of surgical procedures (4.5 vs 1.75). All patients were noted to have patent bladder necks with at least 12 months of follow-up, and three of the patients had undergone successful AUS placement, with the fourth patient declining placement.

Conclusions: Recurrent and refractory stenosis of the bladder neck following prostatectomy presents a vexing challenge to the practicing urologist, as these patients are often difficult to treat and experience significant morbidity related to their chronic urinary retention. In our experience, reconstruction of the bladder neck via a perineal approach with assistance from above through a suprapubic tract can result in a patent and stable bladder neck that allows placement of an AUS with resultant continence.

Source of Funding: None
Purpose: Urethral stricture is a well-known complication of pelvic radiation therapy (RT) for prostate cancer, occurring in approximately 2-11% of men depending on which type of RT was administered. The object of this study was to evaluate our institutional experience with urethral stricture following RT for prostate cancer.

Materials and Methods: The San Antonio Military Medical Center Tumor Registry was queried to identify men who underwent primary RT for prostate cancer between the years 2000 and 2006. Inpatient and outpatient medical records were retrospectively reviewed to identify men diagnosed with urethral stricture subsequent to RT. Patients with no documented follow-up in the electronic medical record or who underwent salvage prostatectomy were excluded. Stricture treatment failure was defined as the need for intervention(s) due to stricture recurrence.

Results: Among the 344 patients treated with RT for prostate cancer, 218 met our study inclusion criteria (median post-RT follow-up 104 months, range 50-154 months). Urethral stricture was diagnosed in 19 men (9%) at a median 55 months (range 1-103 months) after completion of RT. A similar rate of urethral stricture diagnosis was seen after external beam RT (12 of 141, 9%) and brachytherapy (7 of 71, 10%, p=0.8). In 7 men, strictures were wide enough to permit passage of a 17-Fr flexible cystoscope and thus were not treated. Strictures in the remaining 12 men were treated with either dilation (n=7) or visual internal urethrotomy (VIU, n=5). Stricture treatment failed in the majority of men (7 of 12, 58%) at a mean of 14 months, and 5 patients required 2 or more additional interventions for recurrent strictures. None of the 19 men with urethral strictures due to RT underwent urethral reconstruction.

Conclusions: Urethral stricture is a common complication of primary RT for prostate cancer. Stricture dilation and VIU have a high failure rate and thus urethral reconstruction should be considered for appropriate operative candidates.

Source of Funding: None
Purpose: For strictures that are too long to be repaired with an excision and primary anastomosis, single stage substitution urethral reconstruction has proved to be highly successful. We evaluate our outcomes for dorsal onlay augmented anastomotic urethroplasty (AAU) at two international centers.

Materials and Methods: A retrospective chart review of our prospectively maintained urethroplasty database of 845 patients, who were operated by three surgeons utilizing the same principles and a standardized follow-up, between 1993 and 2011 was performed. Patients who underwent solely dorsal onlay of buccal mucosal graft for AAU and who had sufficient treatment/follow-up course were included. Patient and stricture characteristics were analyzed, and patient and surgical factors predisposing to failure were evaluated. Primary outcome was urethral patency. Secondary outcomes were evaluation of patient satisfaction and early/late complications. Demographic data, stricture etiology, presence of early or late complications, and comorbid conditions such as obesity and Diabetes Mellitus were assessed. ANOVA and T-Testing was used for group comparisons.

Results: Mean stricture length was 5.6 ± 3.0 cm, with 120 (88.2%) located in bulbar or bulbomembranous urethra and 16 (11.8%) extending from bulbar to penile urethra. Stricture etiology was unknown in 44 (32.4%) patients, traumatic in 29 (28.7%), and instrumentation/iatrogenic in 38 (27.9%) cases, with the remainder due to infectious or other causes. At a mean follow-up of 24.6 months, overall success rate is 95.6%. Longer stricture length and multiple previous attempts at repair (dilation, internal urethrotomy, urethroplasty) were associated with higher rates of failure. Complications were generally transient and well-tolerated. The most commonly cited complication was postvoid dribbling, seen in 21 (15.4%) of patients. All complications were Clavien Grade II or less. No significant donor-site complications were noted.

Conclusions: AAU using dorsal onlay of buccal mucosal graft is well-tolerated and durable. Early and late complications are mild and satisfaction is high. Our series reveals that longer strictures are associated with less optimal results. Patients with longer strictures commonly undergo more instrumentation prior to urethroplasty. One should avoid repeat dilations and internal urethrotomies that may result in longer strictures. Stricture etiology and medical comorbidities such as DM and obesity were not found to be predictors of failure or complications.

Sources of Funding: None
EPIDEMIOLOGY OF GENITOURINARY TRAUMA IN SERVICE MEMBERS WITH COLORECTAL INJURY WOUNDED DURING OPERATION IRAQI FREEDOM AND OPERATION ENDURING FREEDOM

Matthew C. Kasprenski, MD, Sean C. Glasgow, MD*, and Steven J. Hudak, MD
San Antonio, TX
(Presentation to be made by Dr. Kasprenski)

Purpose: The Joint Surgical Transcolonic Injury or Ostomy Multi-theater Assessment (J-STOMA) project is an ongoing initiative to examine outcomes in patients with colorectal (CR) injury sustained during Operation Iraqi Freedom (OIF) or Operation Enduring Freedom (OEF). Initial evaluation of the J-STOMA cohort has revealed a high rate of genitourinary (GU) injury among service members (SMs) with CR injury. Given the paucity of published data (military and civilian) on coexistent GU and CR injury, we sought to describe the epidemiology of GU injury in US and coalition SMs with CR injury.

Materials and Methods: Department of Defense electronic health records of all patients in the J-STOMA database were reviewed to identify those SMs with synchronous GU and CR injury. Demographic data, including mechanism of injury, GU and CR organs injured, and initial management of GU injury were reviewed. GU injuries were then stratified by body region: internal (kidney, ureter, bladder, prostate) and external (urethra and external genitalia); to elucidate potential recurrent patterns of injury. Univariate analysis comparing groups by wound mechanism and region injured was performed using the chi-square test.

Results: Among 755 SMs with colorectal injuries sustained during OIF and OEF, 260 (34%) had at least one associated GU injury. Overall there were 100 SMs with renal injury, 24 with ureteral injury, 67 with bladder injury, 24 with urethral injury, and 110 with external genital injury. A large number of SMs (77/260, 30%) had multiple GU organs injured. Internal GU injury was observed in 57% of SMs, 30% had external GU injury only, and 13% had both internal and external GU injuries. Gunshot wounds were more likely to result in internal GU injuries (82/148, 56%), while blast injury was more likely to cause either external GU injury (63/78, 82%) or internal + external GU injury (18/33, 55%, p<0.001). Ascending, transverse, and descending colonic injuries predominated in those with internal GU injuries (94/147, 64%), while sigmoid, rectal, and anal injuries were more common in patients with external GU injury (51/77, 66%; p<0.001). The mortality rate for SMs with combined CR and GU injury was 13% (34/260).

Conclusion: GU injury is common among SMs who sustain CR injury on the modern battlefield. Despite the heterogeneity of combat injury, specific patterns can be seen based on the mechanism of injury and anatomic region affected. These data provide important information that can guide future efforts at injury prevention, primary surgical management, and subsequent reconstructive surgery and rehabilitation.

Source of Funding: The author(s) acknowledge Department of Defense Trauma Registry (DoDTR) and Patient Administration Systems and Biostatistics Activity (PASBA) for providing data for this study. Research funded in part by Defense Health Program 6.7 FY2012 grant.
Objective: The incidence of urinary incontinence is high in traumatic brain injury (TBI) patients. No study has evaluated the incidence of both urinary and fecal incontinence and the association with prognostic factors in this patient population. The objective of this study is to evaluate the incidence of lower urinary tract symptoms (LUTS) and fecal incontinence in patients who have sustained traumatic brain injuries. The secondary objective is to identify prognostic factors that are associated with urinary and fecal incontinence.

Methods: A retrospective review of electronic medical records of female patients who were diagnosed with traumatic brain injury (TBI) at a level one trauma center from November 2004 to December 2010 was performed. These patients were obtained from the National Trauma Registry of the American College of Surgeons (NTRACS) database. The diagnosis of TBI was based on a head computed tomography (CT) positive for intracranial hemorrhage and a head and neck abbreviated injury score greater than 2. Patients who sustained bladder or spinal cord injuries were excluded from the study. The NTRACS database contained demographic information and emergency room Glasgow coma score (GCS), mechanism of injury, hospital length of stay, disposition and functional independence measure (FIM) score. The electronic medical record was reviewed for information regarding pre-injury urinary incontinence, fecal incontinence, over active bladder (OAB) diagnosis, and the use of an anticholinergic. Follow-up visits were reviewed for: diagnosis of urinary incontinence, fecal incontinence, OAB, urinary retention, acute cystitis and if prescription for anticholinergic was given. Patient visits were also reviewed to determine if the provider asked about lower urinary tract symptoms (LUTS). Multivariate logistic regression modeling was used to determine the association between de novo urinary incontinence (and de novo fecal incontinence) and the potential risk factors of age, GCS, trauma type and FIM score. Statistical significance was defined as p < 0.05. All analyses were performed using Stata 13.1 software.

Results: Of the identified 1275 patients with TBI, 1008 patients met inclusion criteria. Mean age was 46 years old. Median hospital stay was 4 days (IQR of 8). Average follow-up was 14.9 months. Average GCS was 9.6 and 969 (96.1%) secondary to blunt trauma. Of the 1008 patients, 20.5% (207) died during their initial admission, 82% (664) had more than two weeks of outpatient follow-up. The overall incidence of de novo urinary incontinence was 8.5% (100). Providers asked 59.0% (392) of these patients about LUTS. The incidence of de novo urinary incontinence in the 392 patients who were asked about their LUTS, was 20.4% (80). The incidence of de novo fecal incontinence in patients in this same population was 13% (51). Severe GCS score (<9) as well as FIM score equivalent with patient requiring assistance (<5) were associated with an increased risk of de novo urinary incontinence (OR of 0.88, 95% CI 0.83-0.93, p<0.001 and OR 0.78, 95% CI 0.71-0.87, p<0.01, respectively). Similarly, both severe GCS score and low FIM score were associated with an increased risk of fecal incontinence (OR of 0.87, 95% CI 0.80-0.94, p<0.01 and OR 0.83, CI 0.71-0.91, p<0.001 respectively).

Conclusions: The de novo urinary incontinence incidence after TBI was 12.0%, and de novo fecal incontinence was 7.7%. However only 59% of all patients with follow up were asked about incontinence symptoms. These numbers could increase with proper questioning and the use of a validated questionnaire. In addition, an association is seen with lower GCS and FIM scores and both urinary and fecal incontinence.

References: N/A
EFFECT OF CONCURRENT PROLAPSE SURGERY ON STRESS URINARY INCONTINENCE OUTCOMES FOLLOWING TVTO

MaryEllen T. Dolat, M.D., Joseph R. Habibi, M.D.*, Zachary McDowell, B.S.*, and David E. Rapp, M.D.*
Richmond, Virginia
(Presentation to be made by Dr. Dolat)

Objectives: A variety of pelvic organ prolapse (POP) surgeries are performed concurrent to mid-urethral sling (MUS) placement. It is unknown whether differing POP surgeries may affect SUI outcomes following MUS placement.

Methods: We performed a retrospective cohort analysis of patients undergoing TVTO in conjunction with POP repair (cystocele with mesh graft (CM), cystocele with cadaveric fascia (CF), colpocleisis (C), and sacrocolpopexy (SCP)). Primary outcomes included validated measures of SUI (ICIQ-FLUTS SD and 3-day bladder diary), measured pre-operatively and at 6-weeks, 1- and 2-years post-operatively. Multi-variate analyses using mixed-effects regressions were used to assess for differences in SUI outcomes based on POP repair type.

Results: 102 patients were identified for study analysis (CM, n=45; CF, n=37; SCP, n=16; C, n=4). Four patients undergoing colpocleisis were excluded from primary analysis given lack of sufficient cohort size. When adjusted for effects of covariates (age, prior hysterectomy/incontinence repair/prolapse surgery, preoperative POP stage), improvement in ICIQ-FLUTS SD was seen in all three surgery groups across 2-year follow-up (p<0.05). Similarly, a reduction in PPD across 2-year follow-up was seen in each group except SCP (p<0.05). The only statistically significant difference in change over assessment between surgeries comprised CM, which demonstrated lesser improvement in ICIQ-FLUTS SD (pre-operative vs 2-year) (p=0.04), although it did not differ from other surgeries at either time point.

Conclusions: Regardless of POP surgery type, patients demonstrate improvements in validated SUI outcomes through 2-years. Although minimal differences were seen when comparing POP surgery cohorts, patients undergoing CM may demonstrate slightly less improvement in SUI outcomes at 2-years post-operatively.

Source of Funding: none.
PAPER #19

THE EFFECTS OF SACRAL NEUROMODULATION ON SERUM AND URINARY INFLAMMATORY MARKERS

Megan Bing, M.D., Karl J. Kreder, Lyse Norian Ph.D.*
Iowa City, IA
(Presentation to be made by Dr. Bing)

Purpose: Urinary urgency/frequency syndrome affects 25% of the general population and up to 60% of the nursing home population. Often anticholinergic medications are not tolerated secondary to side effects, cost of medication or both. Sacral neuromodulation is a treatment option for these patients, however the exact mechanism is unknown.

Materials and Methods: Patients with the diagnosis of urinary urgency/frequency syndrome, urinary retention or painul bladder syndrome that are undergoing placement of a sacral nerve stimulator were identified. Urine and serum samples were obtained and immediately frozen. Evaluation of the cytokines in blood and urine was made using a Bio-Rad Bio-Plex Assay. The following cytokines were IL-1β, IL-2, IL-4, IL-5, IL-6, IL-7, IL-8, IL-10, IL-12, IL-13, IL-17A, IFN-γ, MCP-1, MIP-1β and TNF-α. The assay was then measured on Bio-Plex 3D Suspension Array System, which is housed in a core facility at the University of Iowa. To prospectively evaluate the efficacy of sacral neuromodulation, we measured patient responses with the validated O'Leary-Sant Interstitial Cystitis Symptom Index (ICSI).

Results: Urinary cytokine levels were difficult to measure in all patients. Patients undergoing sacral neuromodulation to treat painful bladder syndrome exhibited a greater decrease in inflammatory markers, though none of these reached statistical significance. TNF-α, IL-5 and IL-17A were all decreased uniformly among all patients and correlated with a decreased in the ICSI score from a mean score of 12 to 9.8, however this also did not reach statistical significance. Male patients receiving sacral neuromodulation also did not demonstrate the same decrease in inflammatory markers that female patients did.

Conclusion: These data represent the first assessment of sacral neuromodulation on inflammatory markers in patient with urinary urgency/frequency and painful bladder syndrome. TNF-α, IL-5 and IL-17A were associated with a decrease in symptoms and may represent other treatment avenues for patients with urinary urgency/frequency syndrome or painful bladder syndrome. In additions, they may represent important biomarkers to predict a patient’s likelihood of responding to sacral neuromodulation.

Funding: Society of Urodynamics and Female Urology
Purpose: The UroLift is a minimally invasive treatment for men suffering from lower urinary tract symptoms due to BPH. This product has recently been approved by the FDA for treatment of LUTS and has recently become available for use in patients. We report our early experiences with the UroLift system and initial patient outcomes.

Materials and Methods: Demographic data was collected on all patients who underwent the UroLift procedure. In addition pre-procedural IPSS questionnaires were completed along with pre-operative cystoscopy and TRUS sizing and uroflowmetry. The surveys and uroflow were completed again at 4-6 weeks post operatively and again at 6 months post operatively.

Results: Prior to UroLift our patient population had a baseline IPSS score of nearly 24 points with an average quality of life score of 4.3 (mostly dissatisfied). At the 6 week post procedure mark the average decrease in IPSS was approximately 10 points and improvement in quality of life was over 2 points. Prior to the procedure the average Uroflow was 8.8 mL/sec and after procedure the average flow was 16 mL/sec.

Conclusions: Our case series of over 30 consecutive patients at two separate institutions have shown that this can be a very effective strategy in appropriately selected patients. Our initial results are promising and the effects appear to be durable with high patient satisfaction. We feel that Urolift is a treatment that warrants consideration in men with LUTS due to BPH.
RESIDENTS COMPETITION - III

ABSTRACTS
Purpose: Hypogonadism is being identified more commonly since the advent of clinically practical testosterone supplementation. Symptoms may have affects on service member physical and mental readiness, and veterans or dependents preventive health measures. FORTESTA© is a 2% gel testosterone supplementation that is the DOD formulary agent for topical treatment of hypogonadism. This study is a retrospective review of hypogonadal men being initiated or changed to FORTESTA© 2% gel.

Methods and Materials: Records were reviewed of 98 hypogonadal men initiating FORTESTA© as their initial testosterone replacement therapy or after switching from an alternative therapy. The serum testosterone levels before and after initiating FORTESTA© were reviewed. Additional patient demographics were reviewed to examine the predictability of responders and non-responders.

Results: Of 98 subjects identified, 88 men were found to have follow-up serum testosterone levels after starting FORTESTA©. 40.9%(n=36) had a rise in testosterone to between 300-1500 ng/dl. Additionally, only 25%(n=22) had a rise in testosterone between 500-1500 ng/dl. Of the 71%(n=25) previously therapeutic on another form of testosterone replacement prior to starting FORTESTA©, only 52%(n=13) became therapeutic upon starting FORTESTA©.

Conclusions: Testosterone replacement therapy with FORTESTA© in hypogonadal men has minimal efficacy at the recommended initiation dose of 40mg daily. Approximately half of men previously therapeutic on another form of testosterone replacement therapy will continue to have therapeutic levels upon starting FORTESTA©. The majority of men may benefit from early dose titration to >40mg daily.

Source of Funding: None
TeamSTEPPS IMPROVES OPERATING ROOM EFFICIENCY

Matthew T. Stringer DO, Lancaster R. Weld, James Ebertowski MD, Timothy S. Baumgartner MD, Matthew C. Kasprenski MD, Jeremy Kelley DO, Doug S. Cho MD, Erwin A. Tieva MD, Kyle J. Weld MD, San Antonio, TX, Presentation to be made by Dr. Stringer.

Purpose: TeamSTEPPS, Team Strategies and Tools to Enhance Performance and Patient Safety, is a collaborative effort by the Department of Defense and Agency for Healthcare Research and Quality to improve efficiency and patient safety in the healthcare environment. The purpose of this project is to evaluate the operating room efficiency during the first year of implementation of TeamSTEPPS compared to the prior year in the Department of Urology at our institution.

Materials and Methods: TeamSTEPPS consisted of a preoperative briefing among all healthcare personnel assigned to each operating room to discuss concerns unique to each case scheduled for that day. Postoperative debriefings also followed each case to identify issues. The operative times, on-time start rates, and turnover times of the cases during the past year with TeamSTEPPS were compared to the prior year before implementation of TeamSTEPPS.

Results: A total of 1431 cases with TeamSTEPPS and 1513 cases before TeamSTEPPS were compared. The mean in-room to turnover-to-surgeon time was 13.75 minutes with TeamSTEPPS compared to 14.45 minutes before TeamSTEPPS (p=0.017). The mean turnover-to-surgeon to surgical-start time was 15.19 minutes with TeamSTEPPS and 16.29 minutes before TeamSTEPPS (p=0.004). The mean surgical time with TeamSTEPPS was 72.23 minutes compared to 83.45 minutes before TeamSTEPPS (p<0.001). The on-time first-start rate was 69.8% with TeamSTEPPS while the rate before TeamSTEPPS was 48.9% (p<0.001). The mean turnover time of 40.49 minutes with TeamSTEPPS was not significantly different than the before TeamSTEPPS time of 41.48 minutes (p=0.193).

Conclusions: TeamSTEPPS improves operating room efficiency by decreasing operating room time and increasing on-time first-start rates.
Purpose: Adult hydroceles are estimated to affect 1% of adult men. Hydrocelectomy is a common Urologic surgery with several effective techniques. The most commonly performed procedures are the Andrews “bottle,” Jaboulay (Winkelmann) or the more recently described Lord procedure. Our objective was to compare a single surgeon’s Lord technique to all other institutional surgeons’ techniques for efficacy, complication rates, hospital admission and placement of scrotal drain.

Methods: We performed a retrospective chart review at 3 clinical sites within the Scott and White Healthcare system. Charts were reviewed based on procedure codes for hydrocelectomy over an 11-year period extending from 2000-2011. A total of 354 charts were selected for review and of these 277 charts met inclusion criteria. Data regarding laterality, concomitant scrotal pathology, surgeon, complication and hydrocele recurrence were collected. Patient’s with a history of scrotal pathology were excluded from the analysis.

Results: A total of 281 hydrocelectomy surgeries were performed on patients that met inclusion criteria. Of those, 202 were excision/bottleneck and 79 were Lord repairs with 49 performed by Dr. Hermans and the remaining 30 spread across several staff. There were at total of 17 (6%) recurrences overall. Recurrence rate was lower in the analyzed surgeon’s Lord group 2 (4.2%) and Others - 15 (6.2%) (p=0.65) but not statistically significant. Analysis revealed complications, defined as hematoma, infection or reexploration for pain, in 32 patient’s (11%). Patient’s undergoing the Lord procedure, as performed by the analyzed surgeon, had no complications (p=0.03). When compared by repair type the complications were 20 (63%) for excision alone, 12 (38%) for Jaboulay and 0 (0%) for the Lord repair. Post-operative admission rates for our surgeon’s Lord repair 2% (1) was markedly lower than Others 17.2% (40) (p=0.03). Finally, post-operative drain placement was higher in Others 89 (38.4%) than our Lord repair 0 (0%) (p=<0.0001).

Statistical analysis: All variables of interest including demographic characteristics were summarized for the entire group and separately for the 3 groups. Frequencies and percentages were reported for categorical variables. The chi-square test was used to investigate whether there were significant associations between repair type and other categorical variables of interest. In the cases where the cell frequency counts were small, the Fisher’s exact test was used. Since performing of multiple tests inflates the Type I error rate, the p-values were adjusted using the false discovery rate. These adjusted p-values are presented in the report. A p-value of less than 0.05% indicated statistical significance. SAS 9.2 (SAS Institute INC, Cary, NC) was used for data analysis.

Conclusion: The Lord repair, as performed by our single surgeon, appears to be a superior technique to non-Lord repairs with respect to complication rate, admission rate and post-operative drain placement. The Lord repair is statistically equivalent with respect to recurrence when compared to the all others.
Impact of the 2012 American Urological Association Vasectomy Guidelines on Post-Vasectomy Outcomes in a Military Population

CPT Raffaella DeRosa, MC USA; MAJ Alexander Ernest, MC USA; CIV Michael Lustik; LTC Joseph R. Sterbis, MC USA; COL Leah P. McMann, MC USA; Tripler Army Medical Center, Honolulu, HI. (Presentation to be made by Dr. DeRosa)

OBJECTIVE: To evaluate the impact of the 2012 AUA vasectomy guidelines on post-vasectomy clinical outcomes in a highly mobile military cohort and compare these outcomes with those of civilian counterparts.

METHODS: The records of servicemembers who underwent vasectomy between January 2008 and December 2013 and provided at least one post-vasectomy semen analysis (PVSA) were analyzed in the context of the 2012 guidelines. Time to occlusive success, repeat PVSAs and vasectomies, and healthcare cost savings were compared between our prior definition of vasectomy success, which required azoospermia, and the 2012 criteria, which include rare nonmotile sperm (RNMS).

RESULTS: Of the 1,623 men who underwent vasectomy, 738(45%) failed to submit a PSVA, leaving 895(55%) who provided at least one PVSA. A total of 1,084 PVSAs were obtained in these men, who had a mean age of 37±6 years. Defining success as azoospermia on first PVSA resulted in a sterility rate of 69%. After application of the 2012 guidelines, 845(94%) of patients achieved sterility by first PVSA, and more patients achieved sterility 60 days from vasectomy (96% vs. 72%, p<0.001). Inclusion of RNMS in our definition of success would have allowed 228 men to forego a second PVSA and prevented 2(0.002%) unnecessary vasectomies, a savings of $6,297. Age, military branch, and rank were determined to be significant predictors of PVSA compliance.

CONCLUSIONS: PVSA compliance in our military cohort was similar to that of civilian counterparts. The AUA vasectomy guidelines have the potential to decrease the number repeat vasectomies and laboratory tests, improve the documented success rate, and increase follow-up compliance when applied to a military population.
SONOGRAPHIC RENAL PARENCHYMA MEASUREMENTS FOR THE EVALUATION AND TREATMENT OF URETEROPELVIC JUNCTION OBSTRUCTION IN CHILDREN

Jeremy C Kelley, D.O., Jeffrey T White, M.D.,PhD., Jessica T Goetz, M.D., Elena Romero, M.D., Jeffrey A Leslie, M.D., Juan C Prieto, M.D.
San Antonio, TX
(Presentation to be made by Dr. Kelley)

Purpose: To correlate sonographic renal parenchyma measurements (SRPM) among patients with ureteropelvic junction obstruction (UPJO) SFU grades (gr) 1 to 4 hydronephrosis as well as in SFU gr 3 and 4 who were managed conservatively vs surgically.

Methods: Following IRB approvals, retrospective charts review and SRPM were performed in patients with SFU gr 1 to 4 hydronephrosis secondary to UPJ obstruction managed at our institutions between 2009 and 2014. Exclusions criteria included other concomitant genitourinary pathology or incomplete follow up. SRPM, including renal length (RL), medullary pyramid thickness (MPT), and renal parenchymal thickness (RPT), were evaluated. Renal pelvis transverse diameter was also measured as well as ipsilateral renal function and washout on nuclear renography when available. Contralateral normal kidneys (SFU grade 0) were used as controls. All SRPM images were saved electronically and reviewed by one pediatric urologist (JCP). Indications for pyeloplasty included worsening hydronephrosis, decreased renal function >10%, symptoms, or hydronephrosis without trend for improvement. Linear mixed-effects regression models were used to assess statistical significance while controlling for age and laterality.

Results: 507 children were identified to have hydronephrosis. Of those, 402 were excluded based on the aforementioned criteria. 105 UPJO patients underwent 245 RBUS (1470 SRPM in 490 kidneys). 60 patients were managed conservatively, and 45 underwent pyeloplasty. Mean and SD values for SRPM are shown in table 1. MPT and RPT progressively decreased from SFU gr 1 to 4 (p<0.05). A similar trend was appreciated when comparing SFU gr 1 and 2 vs. 3 and 4, as well as SFU gr 3 vs. 4 (p<0.05). SFU gr 3 and 4 patients who underwent pyeloplasty had decreased MPT and longer RL (p<0.02) in comparison to those management conservatively.

Conclusions: This is the first study that objectively evaluated SRPM in patients with UPJO. SRPM correlate closely with worsening hydronephrosis and may be helpful to guide the decision to opt for surgery vs observation. Prospective studies are needed to elucidate the value of SRPM as objective tools to assist in the decision for surgical intervention.
Background: Over the last several years there has been significant controversy regarding the medical benefit of circumcision. Nonetheless, many parents still desire their children to be circumcised. Among parents who want their son circumcised, many are unable to have the procedure performed within the first month of life in the hospital or as an outpatient by a qualified, non-urologist provider and miss the short window for newborn circumcision (NBC). These young males are brought to our urology clinic seeking circumcision which then must be done in the operating room which leads to significantly increased cost, inconvenience, and potential morbidity to the child. In order to further elucidate why newborn circumcisions are not performed as an inpatient prior to discharge from the hospital we surveyed 102 parents.

Materials and Methods: We surveyed 51 parents bringing their children < 1 month old to our urology clinic (San Antonio, TX) for a newborn circumcision to find out why their circumcision was not performed in the hospital. We surveyed a second group of 51 parents who brought their children > 1 month old but < 2 years old who were seeking a circumcision after the newborn stage in order to find out why these circumcisions were not performed as newborns and why they wanted a circumcision.

Results: The group of 51 parents with male infants < 1 month who desired NBC but it was not performed in the hospital prior to discharge or by a primary care provider gave the following reasons. 14/51 (27%) of parents stated a doctor/provider was not available or was unable to perform NBC prior to discharge from the hospital. 12/51 (24%) responded that the hospital did not offer or provide NBC prior to discharge. 8/51 (16%) stated that the family practice physician or pediatrician involved in their son’s care did not perform circumcision. 5/51 (10%) said that circumcision was never mentioned in the hospital prior to discharge. 4/51 (8%) were told NBC would be done as an outpatient. 3/51 (6%) were told it would be done but it wasn’t. 2/51 (4%) were unsure if they wanted NBC in the hospital.

Parents of the group of 51 male infants > 1 month but < 2 years of age who were seen in consultation for circumcision had the following responses regarding why their son was not circumcised as a newborn: 12/51 (24%) responded that the hospital does not offer/provide NBC prior to leaving. 12/51 (24%) were told the doctor/provider was not available or was unable to perform NBC prior to discharge. 7/51 (14%) were told to wait until the child was > 6 months old. 5/51 (10%) responded that their pediatrician/family practice provider does not perform NBC. 4/51 (8%) were unsure if they wanted circumcision in the hospital. 4/51 (8%) were told the child was too small. 2/51 (4%) of parents stated NBC was not offered (mentioned) in the hospital. 2/51 (4%) were told it would be done as an outpatient.

Conclusion: The practice of newborn circumcision has medical, social, and financial support in the United States. Despite this, 75% (77/102) of parents surveyed who wanted their child circumcised as a newborn were unable to have their child circumcised while in the hospital or by their primary care provider due to non-medical reasons dealing mostly with issues of communication. Only 6% (6/102) of parents initially did not want circumcision in the hospital and then changed their mind with 4% (4/102) seeking care after the child was too old to undergo a NBC. Further work and investigation needs to take place to develop a process that will streamline the pathway for desired circumcisions to take place by improving pre-birth communication between parents and providers. This will decrease the number of children who undergo circumcision in the operating room which would decrease healthcare costs, inconvenience for families and decrease potential morbidity when a simpler and highly effective newborn circumcision could have been performed.

Source of Funding: None
OBJECTIVES: To determine the incidence and predictors of 30-day hospital readmission in a large series of patients who underwent non-emergent major urologic surgeries, including nephrectomy, prostatectomy, and cystectomy.

METHODS: A multi-institutional study was performed using the 2012 National Surgical Quality Improvement Program (NSQIP) database to determine predictors of unplanned 30-day readmission after non-emergent major urologic surgeries performed from 2011 through 2012. A retrospective analysis determined the medical and surgical complications that occurred post-operatively. The primary outcome was the development of a complication requiring hospital readmission at ≤30 days after surgery. Time to discharge after the original procedure was determined for each major urologic surgery. Predictors were determined using multivariate logistic regression models.

RESULTS: A total of 21,377 patients were retrospectively identified from the 2011-2012 NSQIP Participant User File as having undergone major urologic surgery, and 1353 (6%) were readmitted within 30 days after the initial procedure. Bleeding requiring blood transfusion was the single most common surgical complication in the readmitted cohort 357/1,353 (26.39%). Other common complications in this cohort were sepsis including septic shock 212/1,353 (15.67%) and urinary tract infection 179/1,353 (13.22%). The most common surgical complication was organ space surgical site infection 112/1,353 (8.28%). Notably, patients who were readmitted had a significantly higher rate of reoperation as well as Clavien 4 and 5 complications (P < 0.001). The reoperation rate for readmitted patients was 14.44% versus 1.04% for those not readmitted (P < 0.001). The mortality rate was 2.22% for readmitted patients compared to 0.21% for the non-readmitted patients (P < 0.001). Statistically significant predictors of 30 day unplanned readmission for all major urologic surgeries included age 50-64 years, ASA classification of 3 or 4, operative time >240 minutes, disseminated cancer at the time of surgery, renal failure, diabetes requiring medication, steroid use, history of COPD, and dependent functional status (P < 0.001). Patients who underwent cystectomy with neobladder or cystectomy with ileal conduit had the longest postoperative hospital stays with a median of 8 days. Nephrectomy and prostatectomy patients with shorter hospital stays (≤7 days), were less likely to be readmitted. Among patients who were discharged within 3 weeks, patients with longer hospital stays were more likely to be readmitted than those with shorter hospital stays.

CONCLUSION: Using a nationwide validated surgical outcomes database, the overall rate of readmission after major urologic surgery was 6%. Preoperative risk factors, such as disseminated cancer, renal failure, diabetes requiring medication, steroid use, prior COPD, comorbidities requiring chronic steroid use, and poor functional status are significant predictors of unplanned hospital readmission. These risk factors should be considered in discharge planning strategies to prevent readmission.
ORIGINAL RESEARCH PRESENTATIONS

ABSTRACTS
MALE ANTERIOR URETHRAL STRICTURES ARE COMMONLY TREATED WITHOUT IMAGING OR BEING OFFERED URETHROPLASTY

Justin J. De Grado, Rachel M. Quinn, Joel Gelman

Introduction and Objective: We evaluated the percentage of patients presenting to our institution who had prior internal urethrotomy (IU) or dilation without prior imaging and/or being offered open reconstruction during informed consent.

Methods: After IRB approval, we prospectively collected data on all adult patients seen from April 2011 – January 2014 who were previously evaluated and/or treated for anterior stricture disease. We identified 103 men, and evaluated demographics, disease related information, medical records, imaging, and whether the patient was imaged and/or offered urethroplasty prior to treatment.

Results: Ninety-one patients had been previously treated prior to being evaluated at our institution. Of the 91 men, 76 (84%) were treated without imaging. Of the 76 patients, 51 had IU as their initial treatment. Forty-three of the 51 had multiple procedures (range 2-5). The other 25 of the 91 treated patients were dilated. Fifteen had multiple (range 2-7) dilations. Of the 58 patients with multiple procedures, only 13 had imaging after one or more failures. Of the 91 patients who underwent prior treatment, 82 (90%) of them were treated with IU or dilation without being offered urethroplasty (57/82 had multiple treatments). Of the remaining 25 patients, 12 had no prior treatment. Eight of the 12 were direct referrals for reconstruction, 1 was self referred for a second opinion (offered urethroplasty) and 3 were self referred second opinions because they were not offered urethroplasty. Nine were offered reconstruction.

Conclusions: While urethral imaging to define stricture characteristics including length, location and number is generally recommended prior to treatment in major textbooks and published literature, the vast majority of men diagnosed with urethral strictures via cystoscopy were treated (often repeatedly) endoscopically without prior imaging. Moreover, the vast majority of men with urethral strictures were treated with single and more often multiple endoscopic procedures without being offered urethroplasty as a treatment option. This is of interest given that recent literature suggests the success rate of IU is very low, the cure rate of repeated dilations and IUs approaches 0, and open urethroplasty offers cure rates of 90-98+ %.
Objective: Treatment for prostate cancer is very effective in achieving oncologic control but may lead to several unique sequelae. Osteomyelitis of the pubic symphysis and pelvic bones is a poorly recognized entity in prostate cancer survivors. In this report we identify prostate cancer survivors with pubic symphysis and pelvic bone osteomyelitis, report on their clinical presentation, diagnostic evaluation, and management and present an algorithmic approach to managing this syndrome complex.

Methods: We conducted an IRB approved retrospective review from January 2011 to June 2014 in a tertiary care academic medical center with emphasis on genitourinary cancer survivorship.

Results: 10 patients were diagnosed with having osteomyelitis of the pubic symphysis with or without extension into the pubic rami. Three of the patients had an associated rectal fistula. Four patients had had a radical prostatectomy as primary treatment for prostate cancer, five received radiotherapy as primary treatment (1 external beam radiotherapy, 4 brachytherapy with external beam radiotherapy) while one patient received high intensity focused ultrasound (HIFU) as primary treatment. Patients presented with pelvic and suprapubic pain, difficulty walking and recurrent urinary infections at a median of 7 years after prostate cancer treatment (range 1.5 – 16 years). 8 of the 10 patients underwent pubic bone debridement with urinary and fecal diversion when needed. 2 patients continue to be managed conservatively with suppressive antibiotics owing to low disease burden. Complete resolution of symptoms was noted in patients undergoing operative intervention, without any pelvic ring instability due to pubic bone resection.

Conclusions: The combination of pelvic pain, difficulty ambulation and recurrent infections in a prostate cancer survivor should prompt investigation for pubic bone osteomyelitis- a poorly recognized syndrome complex that is best managed in a multidisciplinary setting.
ACCUMULATION OF VERSICAN, AN EXTRACELLULAR MATRIX COMPONENT, IN PELVIC FLOOR TISSUES IN A RAT MODEL OF SIMULATED CHILDBIRTH INJURY

Chong Choe M.D., Marika Bogdani PhD*, Thomas N. Wight PhD*, Una Lee M.D.*
(Presentation to be made by Dr.Choe)

Introduction: Abnormal extracellular matrix (ECM) has been correlated with stress urinary incontinence (SUI). Most ECM studies have focused on alterations in collagen and elastin. However, other ECM components such as proteoglycans (PG) play an important role in the remodeling of collagen and elastin. Versican (VC) is a PG that plays a key regulatory role in maintaining elastic fiber networks. VC, however, has not yet been investigated in SUI. Vaginal distension (VD) is a well accepted rodent model of simulated childbirth injury used to study SUI. The aim was to investigate the effects of VD in rats on the distribution of VC on urethral, para-urethral, and anterior vaginal wall tissues.

Methods: Nulliparous Sprague-Dawley female rats underwent VD or sham. Pelvic floor tissues were harvested for immunohistochemical staining for VC at days 1, 4, and 21. Tissues were collected from 6 rats per group at each time point.

Results: Sham injured rats had low VC staining around the urethra and minimal to no VC staining in the para-urethral and vaginal lamina propria (LP) at all time points (fig 1, left). At day 1, VD rats had increased VC staining in the urethra. By day 4, VD rats had increased staining in the urethra, para-urethral tissues, and vaginal LP (fig 1, right). At day 21, VD rats had similar persistent areas of VC staining as the day 4 VD rats.

Fig 1. Versican expression in rat 4 days after sham (left) and VD (right). V vagina; LP lamina propria; SM smooth muscle; L lumen. Mag 10X.

Conclusion: This study demonstrates a distinct pattern of increased versican accumulation in the urethra, para-urethral tissues, and vaginal lamina propria after vaginal distension. Since extracellular matrix has been shown to be abnormal in SUI, studying the patterns of proteoglycan accumulation may lead to an understanding of why elastic fibers are altered in pelvic floor tissues in patients with SUI. Versican accumulation warrants further study to better understand alterations in tissue support and function for the future development of potential targeted therapies.
A STATEWIDE INTERVENTION TO REDUCE HOSPITALIZATIONS AFTER PROSTATE BIOPSY

Paul R. Womble MD, FACS1, Susan M. Linsell MHSA1*, Yuqing Gao MS1*, Zaojun Ye MS1*, James E. Montie MD1*, Brian R. Lane MD, PhD2*, Frank N. Burks MD3*, David. C. Miller MD, MPH1

1Ann Arbor, MI; 2Grand Rapids, MI; 3Royal Oak, MI

(Presentation to be made by Dr. Womble)

Introduction: Recent data suggest that rising rates of hospitalization after prostate biopsy are mainly due to infections from fluoroquinolone (FQ) resistant bacteria. Herein, we report the initial results of a statewide quality improvement (QI) intervention aimed at reducing infection-related hospitalizations after transrectal prostate biopsy.

Methods: From March 2012 through May 2014, data on patient demographics, comorbidities, prophylactic antibiotics, and post-biopsy complications were prospectively entered into an electronic registry by trained abstractors in 30 practices participating in the Michigan Urological Surgery Improvement Collaborative (MUSIC). During this period, each practice implemented one or both of two interventions aimed at addressing FQ resistance: 1) use of rectal-swab culture-directed antibiotics; or 2) augmented antibiotic prophylaxis with a second agent in addition to standard FQ therapy. Six practices had implemented augmented prophylaxis prior to commencing data collection. We identified all patients with an infection-related hospitalization within 30 days post-biopsy, and validated these events with claims data for a subset of patients. We then compared the frequency of infection-related hospitalizations before (n= 5,028 biopsies) and after (n= 4,087 biopsies) implementation of the QI intervention.

Results: Overall, the proportion of patients with infection-related hospitalizations after prostate biopsy decreased by 53% from before to after implementation of the QI intervention (1.19% pre vs. 0.56% post, p=0.002). Among post-implementation biopsies, rates of hospitalization were similar for patients receiving culture-directed (0.47%) versus augmented (0.57%) prophylaxis. At a practice-level, the relative change in hospitalization rates varied from a 3.0% increase to a 7.4% decrease (Figure). Fourteen practices had no post-implementation hospitalizations. In the validation sample of 228 men, we noted perfect concordance between the registry and claims data for identification of hospitalizations.

Conclusions: A statewide intervention aimed at addressing FQ resistance reduced post-prostate biopsy, infection-related hospitalizations in Michigan by 53%. Additional data are needed to clarify the relative benefit of the culture-directed versus augmented pathways.

Source of Funding: Blue Cross Blue Shield of Michigan
BIOPSY OF NORMAL-APPEARING BLADDER MUCOSA IS NOT HELPFUL IN PATIENTS WITH UNEXPLAINED POSITIVE CYTOLOGY AFTER NON-MUSCLE INVASIVE BLADDER CANCER

John E. Musser, MD, MAJ, MC, Matthew J. O'Shaughnessy, MD, PhD, Philip H. Kim, MD, Harry W. Herr, MD
(Presentation to be made by Dr. Musser)

Purpose: Malignant voided cytology with normal endoscopic evaluation represents a diagnostic and therapeutic challenge for many patients with a history of non-muscle-invasive bladder cancer (NMIBC). Bladder biopsy is often advised but its efficacy is unclear. We seek to evaluate the usefulness of bladder biopsy for patients with unexplained positive cytology and to describe patterns of recurrence for this unique subset of patients.

Materials and Methods: From an institutional database, we retrospectively identified patients with history of NMIBC and surveillance cystoscopy from 2008–2012 who had malignant voided urine cytology but normal cystoscopy. Patients underwent either systematic bladder biopsy or cystoscopic surveillance and were followed for recurrence and progression.

Results: Of 444 patients, 343 were followed with surveillance only, and 101 underwent biopsy of normal-appearing bladder mucosa including 118 total biopsy procedures. Three (2.5%) biopsies showed carcinoma in situ; none revealed invasive carcinoma. With 32-month median follow-up, 194 (44%) patients experienced recurrence in the bladder, 24 (5%) in the upper tract, and 5 (1%) in prostatic urethra; 219 (49%) demonstrated no recurrence. Previous diagnosis of upper tract urothelial carcinoma and history of Bacille Calmette-Guerin treatment were associated with an increased recurrence risk on multivariable analysis. Recurrence rates/patterns were similar in the biopsy and surveillance groups.

Conclusions: Patients with malignant cytology despite normal cystoscopy have a high recurrence rate. Biopsy of normal-appearing bladder mucosa in this setting is rarely positive and does not alter recurrence patterns.

Source of Funding: Supported by the Sidney Kimmel Center for Prostate and Urologic Cancers.
FUNCTIONAL OUTCOMES ON ROBOTIC INTRACORPOREAL ORTHOTOPIC ILEAL NEOBLADDERS

Los Angeles, CA (Presentation to be made by Dr. Santomauro)

Introduction: Orthotopic neobladder reconstruction is the preferred method of urinary diversion following radical cystoprostatectomy. We evaluated urinary functional outcomes in male patients who underwent robotic intracorporeal orthotopic neobladder.

Materials and Methods: From 2009 to 2014, 42 male patients underwent robotic intracorporeal ileal neobladder formation following radical cystoprostatectomy (RRC). Patients were administered validated questionnaires - Bladder Cancer Index (BCI), Sexual Health Inventory for Men (SHIM), and Short Form Health Survey (SF-36) and offered multi-channel urodynamics. Results from Bladder Cancer Index components were compared with 79 open orthotopic studer ileal neobladders (OIN) from the same institution.

Results: 24 (62%) RRC patients responded to the validated questionnaires. Median follow up was 8.6 months (range: 1.9-19.5 months) and 63 months (range: 16.6-114.2 months) for RRC and OIN groups, respectively. The demographics were comparable in regards to age, ASA, and BMI between the two groups. Five RRC patients underwent urodynamic studies. Time from surgery, pad size during both the day and night, and mucus leakage were compared. Average bladder volume in the RRC patients was found to be 415 cc. Average RRC SHIM score was 3.71 with 50% reporting to have not attempted sexual intercourse.

Conclusions: We report preliminary equivalent urinary functional outcomes to open orthotopic neobladder cohort from the same institution as measured by BCI. Further assessment with urodynamic testing, erectile function, HRQoL and long term follow up as compared to the open technique is required.
INTRODUCTION: Physicians are increasingly challenged to balance quality health care with fewer resources and limited time. To help achieve this balance shared medical appointments (SMAs) have been described. We aimed to improve clinic-wide access to care (ATC) by creating a SMA for minor penile complaints and anomalies.

METHODS: We implemented a SMA in April 2013. We developed an intake form to efficiently gather patient history and a standardized presentation to discuss diagnosis, treatment options, risks and benefits. Outcomes assessed included: access-to-care times, the rate at which patients were seen within a target of 28 days, number of appointments scheduled, and patient complaints. To control for provider availability, we evaluated the number of vacation days and operating room cases for the sole pediatric urologist. Data were analyzed using the Mann-Whitney U test.

RESULTS: Two time periods were evaluated: November 2012-March 2013 and May 2013-September 2013. There was a statistically significant improvement seen in median [IQR] ATC: 26.6 [26.4, 29.4] days before, to 20 [17.1, 24.3] days after the SMA was implemented (p=0.0163). The goal ATC standard was met with a median of 81.4% [56.7, 82.8] after the SMA, compared to 44.3% [25.0, 46.9] before (p=0.0283). After implementation of the SMA, more appointments were scheduled per month: 161 [156,165] vs. 128 [120, 130] (p=0.1172).

CONCLUSIONS: We successfully implemented a SMA, significantly improving our clinic productivity. This allowed us to improve ATC by almost one week, as well as increase the overall volume of patients seen monthly.

Source of Funding: None
INTRODUCTION: Biomarkers that are validated in independent cohorts are needed to improve risk assessment for prostate cancer (PCa).

OBJECTIVE: A racially diverse cohort of men (20% African American [AA]) was used to evaluate the association of the clinically validated 17-gene Genomic Prostate Score (GPS) with recurrence after radical prostatectomy and adverse pathology (AP) at surgery.

METHODS: Biopsies from 431 men treated for National Comprehensive Cancer Network (NCCN) very low-, low-, or intermediate-risk PCa between 1990 and 2011 at two US military medical centers were tested to validate the association between GPS and biochemical recurrence (BCR) and to confirm the association with AP. Metastatic recurrence (MR) was also evaluated. Cox proportional hazards models were used for BCR and MR, and logistic regression was used for AP. Central pathology review was performed by one uropathologist. AP was defined as primary Gleason pattern 4 or any pattern 5 and/or pT3 disease.

RESULTS: GPS results (scale: 0–100) were obtained in 402 cases (93%); 62 men (15%) experienced BCR, 5 developed metastases, and 163 had AP. Median follow-up was 5.2 yr. GPS predicted time to BCR in univariable analysis (hazard ratio per 20 GPS units [HR/20 units]: 2.9; p < 0.001) and after adjusting for NCCN risk group (HR/20 units: 2.7; p < 0.001). GPS also predicted time to metastases (HR/20 units: 3.8; p = 0.032), although the event rate was low (n = 5). GPS was strongly associated with AP (odds ratio per 20 GPS units: 3.3; p < 0.001), adjusted for NCCN risk group. In AA and Caucasian men, the median GPS was 30.3 for both, the distributions of GPS results were similar, and GPS was similarly predictive of outcome.

CONCLUSIONS: The association of GPS with near- and long-term clinical end points establishes the assay as a strong independent measure of PCa aggressiveness. Tumor aggressiveness, as measured by GPS, and outcomes were similar in AA and Caucasian men in this equal-access health care system.

DISCUSSION: Predicting outcomes in men with newly diagnosed prostate cancer is challenging. This study demonstrates that a new molecular test, the Genomic Prostate Score, which can be performed on a patient's original prostate needle biopsy, can predict the aggressiveness of the cancer and help men make decisions regarding the need for immediate treatment of their cancer.
VIDEO

ABSTRACTS
Introduction
Transureteroureterostomy (TUU) is a well-established procedure to correct proximal ureteral stricture disease. Common approaches more often require an open operation. While laparoscopic procedures have been described, we present a novel robotic-assisted lower abdominal approach to correct a proximal ureteral injury.

Materials and Methods
The patient is a 38 year-old male suffering from diverticular disease who underwent multiple abdominal procedures resulting in a severely injured left ureter causing ureteral obstruction not amenable to endourologic options. The key elements to our approach were: (1) Supine position. (2) Over the left shoulder robotic docking. (3) Infra-umbilical trocar placement. (4) Hammock sutures suspending the posterior peritoneum. (5) Passage of the donor ureter under the mesentery proximal to the inferior mesenteric artery with anastomosis in a tension-free manner to the recipient ureter.

Results
The case was uncomplicated with an operative time of 243 minutes. The estimated blood loss was <10ml. The patient recovered as expected. He was discharged from the hospital on post-operative day #3. Follow up retrograde ureterogram at 3 months revealed a patent anastomosis.

Conclusion
The described technique provided a minimally-invasive approach for transureteroureterostomy with excellent visualization and access in a patient that had a history of multiple abdominal surgeries. Morbidity was low and the outcome was excellent.

The views and opinions expressed herein are those of the authors and do not necessarily reflect the official policy or position of the Department of the Navy, Department of Defense, or the U.S. Government.
Introduction: Minimally invasive robot assisted laparoscopic retroperitoneal lymph node dissections (RPLND) using a low-abdominal approach are commonly performed at the Naval Medical Center San Diego (NMCSD) for testicular cancer. This approach has shown versatility for other retroperitoneal disease processes and was recently applied to a retroperitoneal, retrocaval mass.

Materials and Methods: A 20 year-old woman being evaluated for chronic low back pain was noted to have an incidental finding of a 7.5 cm x 4.5 cm x 3.3 cm infrarenal, retrocaval mass on imaging. The retroperitoneal mass excision was completed using the low-abdominal port placement that we use for our robot assisted RPLND’s. The key elements to our approach were (1) supine positioning, (2) infra-umbilical port placement, (3) robot positioning over the left shoulder, (4) hammock sutures in the peritoneum providing visibility into the retroperitoneum, and (5) removal of the mass through a 12 mm port site.

Results: The mass was excised without complication. Operative time was 348 minutes. Estimated blood loss was 105 mL. The patient required minimal medication for post-operative pain and was meeting discharge criteria on post-operative day 1. Final pathology was consistent with Castleman’s disease, stromal rich variant.

Conclusions: Robot assisted laparoscopic surgery for retroperitoneal pathology requiring excision is an approach to be considered by urologists who are appropriately trained in robotic surgery. Extrapolating from the data obtained from our experience with robot assisted RPLND’s, this approach can meet, if not exceed, the gold standard with regard to surgical outcome all while possibly decreasing post-operative pain, the duration of hospital stay, and overall cost.

Source of funding: None
ROBOTIC “CUT TO THE LIGHT”: A NOVEL APPROACH TO MANAGING A RADIATION INDUCED PROSTATIC AND MEMBRANOUS URETHRAL STRicture. CPT Ryan W. Speir, M.D., MAJ Timothy J. Tausch, M.D., LTC Jack R. Walter, M.D., LTC Timothy C. Brand, M.D.: Tacoma, WA. (Presentation to be made by Dr. Speir)

Introduction and Objectives: Following brachytherapy alone for the treatment of Prostate Cancer, the incidence of bladder neck contractures, prostatic urethral stenosis, and bulbo-membranous urethral strictures ranges between 0-12%, usually 4-5%. This has traditionally been a very challenging complication for both the patient and the Urologist. These patients often have a degree of bladder dysfunction and a decreased bladder capacity. Options available to the Urologist have been suprapubic diversion, endoscopic treatment, or less commonly described, radical retropubic prostatectomy (RRP). Having a patient with prostatic urethral stenosis and a membranous urethral stricture who failed endoscopic management and was dissatisfied with suprapubic diversion, we performed a Robotic Prostatectomy with excision of the membranous urethral stricture and primary anastomosis.

Methods: The case was surgically approached in a similar fashion to a robotic assisted laparoscopic prostatectomy. At the level of the prostatic apex the dorsal venous complex and urethra were fibrotic. With the assistance of flexible cystoscopy, the extent of the stricture was established. The membranous urethral stricture was excised robotically. The anastomosis was completed using running monocryl suture in the standard fashion without difficulty.

Results: The operative time was 135 minutes with a blood loss of 50 cc. The patient was discharged home on POD1 and returned to clinic 14 days later for a cystogram which did not demonstrate a urine leak. The catheter was removed. He is incontinent and has been scheduled for an artificial urinary sphincter to complete the reconstruction.

Conclusions: While radiation induced and membranous urethral strictures are exceedingly difficult management dilemmas, several strategies have been proposed. Mundy and Andrich describe a series of 9 patients undergoing RRP for prostatic urethral stenosis with a success rate of 66%, although they describe several difficulties to include dissection and definition of the prostate and the anastomosis. The robotic approach demonstrated in our video displays an improvement in visualization, ease of dissection and anastomosis. The assistance of the cystoscope in the surgical management intraoperatively greatly facilitated our ability to expeditiously identify the extent of the stricture. This option for the management of radiation induced prostatic and membranous urethral strictures should be included as a potential choice for these patients.

Source of funding: none
Objectives: Revision surgery for the malfunctioning artificial urinary sphincter (AUS) is necessary in up to 44% of patients and is a frustrating problem for patient and physician alike. Many techniques and algorithms have been described for troubleshooting the malfunctioning AUS, the etiology of which can include mechanical failure, urethral erosion, sub-cuff atrophy, and fluid leak from the device. Difficulty identifying the site of fluid leak leads many implanters to simply replace the device in its entirety. We have found the use of an ohmmeter to be consistently helpful in the identification and localization of the site of leakage from individual components of the AUS allowing for removal and replacement of individual AUS components.

Methods: The site of tubing with connectors is opened and the tubing and connectors are identified and dissected. Rubber shod clamps are placed on the tubing on either side of the connectors on both the cuff and pressure regulating balloon (PRB) tubing. The tubing is cut. Fluid is aspirated from the balloon to confirm fluid loss. At this point, fluid is injected into the PRB and the ohmmeter leads are applied to the injection needle and the metal skin retractor (ground). Deflection of the ohmmeter needle indicates flow of fluid and identifies a leak in the PRB. This is repeated with the tube to the AUS pump as well as the cuff. Components that demonstrate a leak are replaced. A leak in the affected component is then confirmed on the back table. The device is reconnected and cycled under cystoscopic vision.

Results: Intraoperative use of the ohmmeter has been used in 19 cases on 18 patients. Correct identification of the leak site was achieved in 18/19 patients (94.7%). In the one unsuccessful case, the entire device was removed and replaced. All 18 cases had satisfactory outcomes with no patients requiring further revision surgery for leakage. Four patients required subsequent cuff downsizing for sub-cuff atrophy at a median 19 months after initial revision surgery.

Conclusions: Our technique for identifying and localizing a fluid leak is highly reproducible and successful and has allowed for precise management of patients with AUS malfunction due to fluid loss.

Source of funding: None
POSTER

PRESENTATIONS
QUALITY OF URETHRAL IMAGING IMPACTS TREATMENT DECISION-MAKING IN MEN WITH ANTERIOR URETHRAL STRICTURES
Justin J. De Grado, Rachel M. Quinn, Joel Gelman

Introduction and Objective: We evaluated patients who presented with outside imaging with retrograde urethrograms (RUG) and voiding cystourethrograms (VCUG) for anterior urethral stricture disease to determine adequacy of technique and interpretation. Further we assessed the treatments after imaging to see if the quality of images and interpretation had an effect on treatment choices.

Methods: After IRB approval, data was prospectively collected on adult patients who presented from April 2011 to January 2014 who had been evaluated or treated for anterior strictures during the last 10 years. For all patients in the study, a fellowship trained reconstructive urologist evaluated the images and interpretation to assess adequacy of technique and accuracy of interpretation. Finally, the procedure(s) the patients had after imaging were recorded.

Results: A total of 103 patients were reviewed of which 91 had undergone prior treatments. Of the 91, 15 (16%) had prior imaging prior to treatment. Analysis of the 15 imaging patients revealed the following (table 1-2):

<table>
<thead>
<tr>
<th>Imaging Status</th>
<th>Patient Treatment Decision</th>
<th>Urethroplasty Offered</th>
<th>Reconstructive Urologist Imaged by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate technique</td>
<td>1 patient—Single dilation</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Inaccurate reports</td>
<td>2 patients—Multiple urethotomies</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Inadequate technique and Inaccurate reports</td>
<td>1 patient—Dilation followed by straight catheterization</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Adequate technique and Adequate interpretation</td>
<td>1 patient—Multiple urethotomies and/or dilations with or without straight catheterization</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Adequate technique and Adequate interpretation</td>
<td>1 patient—Staged urethroplasty</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Adequate technique and Adequate interpretation</td>
<td>1 patient—Anastomotic urethroplasty</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Table 1: Explanation of inadequate imaging technique and/or inaccuracy of interpretation broken down by patient.

Conclusions: In this study we found that of the patients who had imaging prior to treatment (16% of previously treated patients), 80% of these men underwent imaging and/or interpretation that was inadequate. In addition, only the three patients with adequate imaging and interpretation were offered urethroplasty as an initial treatment option. This may be due to the fact that having complete information on the stricture alters decision-making, or it could imply that surgeons who are familiar with performing urethral imaging are also more comfortable with reconstruction techniques. This theory is further supported by the fact that all three patients who had adequate imaging were imaged and treated by Reconstructive Urologists.
Objective: Although reduced penile length is a common complaint among patients having inflatable penile prosthesis (IPP) surgery, the IPP has also been advocated as a tissue expander which may enhance penile length with regular use over time. We sought to evaluate penile length changes over time among patients having IPP replacement in a nationwide cohort.

Methods: The nationwide American Medical Systems (AMS) Patient Information Form (PIF) database was queried to identify patients who underwent two AMS 700 LGX or CX implants between 2004 and 2013. All patients with documented age, time between implants, and complete cylinder length data were included in the final analysis. IPP length was calculated as the average total length of cylinders plus rear tip extenders from both sides. Patients were grouped by prosthesis replacement <2 or ≥2 years to separate those who may have sustained erosion or infection, and to assess the change of length over time.

Results: During the ten-year study period, 1532 LGX and 717 CX patients met the study criteria for study inclusion. Mean age at first placement was 60 years for both groups. Mean time between first and second implant was 8.0 and 8.7 months for LGX and CX patients who underwent replacement at <2 years and 55.4 and 60.1 months for LGX and CX patients who underwent replacement at ≥2 years. Penile length increased by 1.10 cm for LGX patients who underwent revision surgery at ≥2 years compared to -0.11 cm for patients <2 years (p<0.001). Similarly, penile length increased by 1.17 cm for CX patients who underwent revision surgery ≥2 years compared to 0.03 cm for patients <2 years (p<0.001). At ≥2 years, LGX and CX patients experienced similar mean change in penile length (p=0.619) as well as distribution of change in penile length (p=0.481): 42.0% of LGX and 37.7% of CX patients had >1 cm increases in penile length. Age was not a significant factor for change in penile length.

Conclusions: Penile length appears to increase among patients who have had an IPP for more than 2 years. Length increase was similar in both LGX and CX patients.
VERSATILE ALGORITHMIC APPROACH FOR DEFINITIVE STRAIGHTENING WITHOUT MODELING DURING PENILE PROSTHESIS SURGERY

Timothy J. Tausch MD, Kiersten Craig, 2LT USAF, MS4, Jordan A. Siegel MD*, Allen F. Morey MD: Dallas, TX and Hershey, PA. (Presentation to be made by Dr Tausch)

OBJECTIVES: We present a novel algorithm for definitive reconstruction of penile curvature in men undergoing concomitant inflatable penile prosthesis (IPP) surgery as an alternative to penile modeling.

METHODS: Patients receiving IPP placement who also had penile curvature were divided into two treatment groups based on when the deformity was recognized: group A) when the penile deformity was known preoperatively, the patient underwent penile plication immediately prior to IPP insertion via the same penoscrotal incision; group B) patients whose penile curvature was recognized after inflation of the newly inserted IPP were treated with a Yachia (Heineke-Mikulicz) corporoplasty over the intact cylinders. A qualitative survey assessing penile curvature, adequacy for intercourse and overall patient satisfaction after surgery was administered.

RESULTS: Among 405 men receiving IPP at our institution from 2007-2014, 30 patients received synchronous reconstruction for penile curvature (7%). Group A included 23/30 (77%) patients, and 7/30 (23%) were in group B. Mean pre-op curvature overall was 37° corrected to <10°. A median of 4 sutures (range 3-6) were used for plication with each suture providing correction of approximately 8°. Average operative times were only 24 minutes longer compared to patients who underwent IPP placement only (88 vs 64 minutes, p<0.05). At an average 8 months of follow-up, 17/18 (94%) patients who completed surveys reported no residual curvature, erections adequate for sexual intercourse and an improved overall condition. One patient (7%) who underwent a complex biplanar plication reported minor residual curvature. No patient reported chronic pain or recurrent deformity.

CONCLUSION: Penile curvature can be safely and reliably reconstructed at the time of IPP placement in a definitive manner, regardless of whether or not the deformity was identified preoperatively.
Purpose: Tandem artificial urinary sphincter (AUS) cuff placement is a well described treatment modality for refractory male stress urinary incontinence. We present an interesting case of a 60-year old male who perforated the intervening segment of his urethra between tandem AUS cuffs following a strong valsalva maneuver. To our knowledge, this is the first reported case of such a complication following tandem cuff AUS placement.

Materials and Methods: The patient's inpatient and outpatient medical records were reviewed. A literature search was conducted focusing on outcomes and complications related to AUS cuff placement.

Results: Our patient experienced a ventral perforation of the intervening urethral segment between his tandem AUS cuffs following a strong coughing episode. This immediately manifested as sharp, perineal pain and gross hematuria. Five days later, he presented to our clinic where flexible cystoscopy revealed the ventral urethral perforation between the tandem cuffs. He underwent immediate perineal exploration revealing a large paraurethral phlegmon and infected, but not eroded AUS cuffs requiring explant of the entire AUS system. He recovered well and was salvaged with successful single-cuff, transcorporal AUS six months later.

We hypothesize that the perforation was caused by the rapid increase in urethral pressure in the short urethral segment between the tandem AUS cuffs. It is likely that the urethra in this area was compromised by several factors, including the compressive pressure by the cuffs at both ends of the urethral segment, prior single cuff AUS before the tandem system was placed, and his co-morbid hypertension and coronary artery disease which are known risk factors for urethral complications in AUS patients.

Conclusions: Tandem cuff AUS patients are at a unique risk of urethral perforation due to the compromised urethral segment between the cuffs. Excellent continence outcomes are achievable following AUS explant and staged transcorporal single cuff AUS placement.

Source of Funding: None.
LOCATION OF AUS PRESSURE REGULATING BALLOON: FUNCTIONAL OUTCOMES OF HIGH SUBMUSCULAR POSITION ARE EQUIVALENT TO SPACE OF RETZIUS

Timothy J Tausch MD, Nirmish Singla MD*, Jay Simhan MD*, Jordan A. Siegel MD*, Allen F. Morey MD
Dallas, TX
(presentation by Dr Tausch)

OBJECTIVES: Traditional placement of artificial urinary sphincter (AUS) pressure regulating balloons (PRB) within the space of Retzius (SOR) may be challenging and subject to troublesome complications. We report our longitudinal experience utilizing a novel high submuscular (HSM) PRB placement technique and compare functional outcomes to traditional SOR placement of the PRB.

MATERIALS AND METHODS: We reviewed a prospectively maintained database of AUS patients between July 2007 and January 2014. Only 61-70 cm H2O PRBs were placed through a trans-scrotal approach via an HSM tunnel (2011-2014) or within the SOR (2007-2010). Our HSM technique consisted of uniform placement of the PRB beneath the rectus abdominis muscle while SOR placement involved perforation of the transversalis fascia at the pubic tubercle, beneath the external inguinal ring. Demographics, patient data, cuff durability, and functional outcomes were compared between groups.

RESULTS: 232 consecutive patients underwent AUS placement with a mean follow up of 38 months. SOR placement was performed in 139 (60%) patients while HSM placement was performed in 93 (40%). Functional outcomes including continence (defined as 0-1 pads/day) rates (88% vs. 81%, p=0.15), erosion rates (9% vs. 5%, p=0.32), and explantation rates (12% vs. 10%, p=0.83) were similar between groups. Fewer AUS revisions for persistent incontinence were required in patients undergoing HSM PRB placement (6.5% vs. 18%, p=0.01). Although mean follow-up was longer for patients undergoing SOR placement (51 vs. 20 months, p<0.001), Kaplan-Meier analysis revealed no difference between groups with regards to rates of explantation (p=0.71) or revision (p=0.36).

CONCLUSIONS: High submuscular placement of the PRB at the time of AUS surgery offers a safe and effective alternative with equivalent functional outcomes to traditional SOR.
Ablative fractional resurfacing (AFR) is a new treatment modality for revision of hypertrophic and contracted scars. Several series have demonstrated its utility in improving range of motion, particularly for severe scars over joints and extremity wounds. This treatment is noteworthy in that it dramatically improves healing and range of motion with few side effects and so far has produced a durable response. Here we present a case of a man requiring rotational muscle flaps and skin grafts for Fournier's gangrene, who was subsequently treated with ablative fractional laser resurfacing and had significant improvements in range of motion and reductions in tissue edema, pain, and scaring.
IMPROVISED EXPLOSIVE DEVICE-RELATED LOWER GENITOURINARY TRAUMA IN CURRENT OVERSEAS COMBAT OPERATIONS

Matthew M. Banti, M.D., Robert C. Dean, M.D., James R. Jezior, M.D., Steven J. Hudak, M.D., Jack R. Walter, M.D., Douglas W. Soderdahl, M.D.
Tacoma, WA
(Presentation to be made by Dr. Banti)

Introductions and Objectives
The use of improvised explosive devices (IED) has had a profound effect on battlefield trauma in the 21st century. Historically, genitourinary injuries have rarely been encountered in combat operations. Genitourinary injury severity secondary to use of this weapon in Operations Iraqi and Enduring Freedom (OIF/OEF) has not been described.

Methods
Data from the Joint Theatre Trauma Registry (JTTR) was reviewed for combat-related genitourinary injuries in OIF/OEF from 2001-2011. All United States armed service members are included in this database. Subjects were selected by a query of related CPT and ICD 9 codes related to lower genitourinary trauma. A retrospective chart review was performed for each patient to identify the date of injury, mechanism, and associated traumatic wounds. Subjects' follow-up records were reviewed until present time or separation from active duty.

Results
A total of 501 soldiers sustained lower genitourinary trauma, with a total of 729 injuries. 89% of genitourinary injuries were secondary to IEDs. Dismounted injuries (79%) made up more of the cohort than did vehicular. Specific trauma sites include: 149 penile, 260 testicular, 284 scrotal, and 36 urethral injuries. Genitourinary injuries were strongly associated with fractures or amputations of the extremities.

Conclusions
This is the first review of all lower genitourinary trauma sustained by all United States armed service members in current overseas combat operations. Combat-related lower genitourinary trauma is primarily due to IEDs. The mechanism of injury primarily results in polytraumatic wounds, with isolated genital or urinary involvement being uncommon. Continued evaluation of long-term sequela, including infertility and hypogonadism, is needed.
BULLYING AND TEASING IN SCHOOL LOCKER ROOMS REGARDING PENILE APPEARANCE

Douglas W. Storm, M.D., Siobhan E. Alexander, B.S.*, Christopher S. Cooper, MD*
Iowa City, Iowa
(Presentation to be made by Dr. Storm)

Purpose: Parents of young boys seeking circumcision or circumcision revision commonly cite concern that their sons may be teased in middle or high school because of their penile appearance. There is no current data to substantiate or refute the presence of such teasing. We explored the validity of this concern by investigating the extent and frequency of teasing regarding penile appearance.

Materials and Methods: An IRB-approved, anonymous questionnaire was administered to undergraduate men at the University of Iowa. Participants answered questions regarding middle and high school demographics, school sports and gym class participation, and any teasing experienced or witnessed due to penile appearance in locker rooms.

Results: Two-hundred ninety men completed the questionnaire. The mean study participant age was 19.2 years (17-24 years). 98% of individuals were required to participate in high school gym class and 96% participated in a school sport. Ten percent were personally teased about their penile appearance, while 47% reported witnessing someone else being teased. The most common characteristic that was witnessed or personally teased was small penile size. Having an uncircumcised penis or a “strange” penile appearance though accounted for 33% of the witnessed penile teasing.

Conclusions: Teasing in the locker room about penile appearance occurs frequently. While our study is limited to one Midwest university population, it appears that parental concerns regarding teasing related to penile appearance are valid, although most causes for teasing may not be alleviated with surgical therapy.

Source of Funding: None
Objective:
Multiple U.S. military humanitarian missions have been conducted in Southeast Asia. We describe our pediatric surgical experience with emphasis on pre-deployment planning, operative cases and lessons learned over a seven-year period. This discussion will help improve future military and civilian humanitarian endeavors.

Methods:
Between 2006 and 2012, the USNS (United States Naval Ship) Mercy completed four large-scale medical operations named Pacific Partnership. A retrospective review of surgical records and after-action reports was conducted to determine patient demographics, type and diversity of operations performed, and pediatric surgeon involvement.

Results:
The total number of operations completed in eight countries (15 port visits) was 2689 in which 848 (28%) involved pediatric patients. The average age was 7.25 years (range, 3 months to 18 years). Average ASA class was approximately 1.3. The percentage of pediatric operations varied widely for each country (20-93%), but certain surgical cases were more common (hernia/hydrocele repair, circumcision, orchiopexy, cleft lip/palate repair). Pediatric surgeons performed approximately 40% of these operations. The remaining pediatric operations were performed mostly by urologists or other general surgeons. For Pacific Partnership 2012, evaluation of complications demonstrated rates of 3.1% for low grade (Clavien 1-2) and 1.8% for high grade (Clavien 3-5). The majority of complications were orthopedic (33%) and gynecology cases (27%).

Conclusions:
This analysis represents the largest humanitarian assistance involving pediatric operations and establishes the essential need for pediatric surgical care in such missions. Evaluation of host country needs is required to optimize the use of pediatric specialty surgeons. However, the majority of operative diagnoses during these missions were hydroceles, hernias, phimoses and undescended testicles which can be performed by most general surgeons. This experience will potentially aid other organizations and countries in planning for surgical humanitarian missions involving young children and infants.
EFFECT OF CONCURRENT PROLAPSE SURGERY ON URGENCY AND FREQUENCY OUTCOMES FOLLOWING TVTO

MaryEllen T. Dolat, M.D., Joseph R. Habibi, M.D.*, Zachary McDowell, B.S.*, and David E. Rapp, M.D.*: Richmond, Virginia
(Presentation to be made by Dr. Dolat)

Objectives: Recent literature has demonstrated a significant proportion of patients undergoing mid-urethral sling (MUS) placement experience improvement in urgency outcomes. The effect of concurrent pelvic organ prolapse (POP) surgery on urgency and frequency outcomes following MUS is unknown.

Methods: We performed a retrospective cohort analysis of patients undergoing TVTO in conjunction with POP repair (cystocele with mesh graft (CM), cystocele with cadaveric fascia (CF), colpocleisis (C), and sacrocolpopexy (SCP)). Outcomes included validated measures of urgency and frequency (ICIQ-FLUTS frequency and urgency domains), measured pre-operatively and at 6-weeks, 1- and 2-years post-operatively. Multi-variate analyses using mixed-effects regressions were used to assess for differences in outcomes over time based on POP repair type.

Results: 102 patients were identified for study analysis (CM, n=45; CF, n=37; SCP, n=16; C, n=4). Four patients undergoing colpocleisis were excluded from primary analysis given lack of sufficient cohort size. When adjusted for effects of covariates (age, prior hysterectomy/incontinence repair/prolapse surgery, preoperative POP stage), improvement in ICIQ-FLUTS frequency and urgency domains was seen in all three surgery groups across 2-year follow-up (p<0.05). There were no significant differences between POP surgery types in comparison of frequency and urgency outcomes at any assessment point or over time.

Conclusions: Patients undergoing concurrent POP surgery and TVTO demonstrate improvements in validated frequency and urgency outcomes through 2-years. No significant differences are seen in comparison of outcomes across a variety of POP repair types.

Source of Funding: none.
Polyps of the urinary tract can occur anywhere from the renal pelvis to the anterior urethra. Lower urinary tract polyps are much less frequent than upper tract and are a rare finding in children. Symptoms of urethral polyps include obstruction, dysfunctional voiding or hematuria. They are typically treated transurethrally or through open cystotomy.

We report the case of a 17 year old male who presented with complaint of persistent leakage of urine following voiding. Ultrasound demonstrated a small cystic lesion in the posterior aspect of the prostate and a VCUG was suggestive of a utricular cyst or polyp. He underwent a cystoscopy which demonstrated a large cystic structure originating from the verumontanum, nearly obstructing the prostatic urethra. The cyst was unroofed with Bugbee electrocautery.

Source of Funding: none
Introduction: The UroLiftTM System (NeoTract, Inc.) is a novel minimally-invasive implant developed for the treatment of benign prostatic hyperplasia (BPH). The objective of this report is to provide an early operative experience with this approach from within the VA system.

Methods: All patients were assessed with AUA SS, uroflow & PVR pre- & post-operatively. The UroLiftTM System was implanted into veterans with symptomatic BPH +/- other co-morbidities. Implantations were performed cystoscopically & were similarly performed in all patients. The number & position of the implants were chosen in order to create a static, patent anterior channel in the prostatic urethra. Two patients had limited transurethral median lobe resection at the same setting. Postoperatively, patients were instructed to continue any prior medical BPH therapy.

Results: Over 10 months, 15 veterans between the ages of 60 and 92 with symptomatic BPH were implanted. Prostate volume ranged from 20 to 95cc. Preoperatively, all patients were on BPH medication, 14 of whom were on dual-agent therapy, and 9 were dependent either on intermittent or indwelling bladder catheterization. Only 5 patients remained catheter dependent after the procedure. Nine out of 15 cases were completed without general anesthesia. Mean operative time was 38 minutes exclusive of the two patients who required limited transurethral median lobe resection at the same setting. One patient developed gross hematuria and clot retention two days after the procedure which resolved without operative intervention. Ten patients had improvement in AUA Symptom Score or PVR after the procedure.

Conclusion: The early experience with the UroLiftTM System suggests that it is a safe and effective treatment of BPH. Further, larger studies are warranted to optimize patient inclusion criteria, validate long-term efficacy, and ensure that salvage therapies are possible for failures. Nonetheless, the ability to quickly, safely, and effectively perform the procedure seems to position the UroLiftTM System as a useful tool in the BPH armamentarium, particularly within the VA healthcare system where operative resources are limited, patients often have significant co-morbidities, and benign prostatic disease is prevalent.
Prostatic Urethral Lift: Initial Clinical Results from a Military Institution.

LT Sean P. Haight, CAPT Donald S. Crain, CDR Sean P. Stroup

Objectives:
To report the initial results of NMCSD's experience with the new prostatic urethral lift (Urolift®) procedure for treatment of lower urinary tract symptoms (LUTS) due to benign prostatic hyperplasia (BPH).

Methods:
We performed the Urolift procedure on 12 patients who either failed medical management for LUTS or did not wish to continue with medical therapy. Eligible patients included those with international prostate symptom scores (IPSS) >12, prostate volume <80cm³, and those with cystoscopic evidence of hypertrophied lateral prostate lobes without an enlarged median lobe. We evaluated patient demographic data including: age; transrectal ultrasound prostate volume; pre and post-operative IPSS and quality of life (QOL) scores; and IIEF scores.

Results:
Prostatic urethral lift was performed in 12 patients with a mean age of 64.6 (45-83) years, with mean prostate volume of 45.6 ml (20-80) using the same operative protocol in all cases. The mean estimated blood loss (EBL) was 5.1cc. The average pre-operative IPSS and QOL were 21.22 (13-34) and 4.6 (2-6) respectively. At 4 weeks post-operatively, mean IPSS and QOL were 7.27 (1-17) and 0.95 (0-2), resulting in an average improvement of 65% and 79%. There have been no sexual side effects reported. The most common complication has been a foley catheter requirement in 41% of subjects with an average length of catheterization of 1 day. There have been no high-grade Clavien complications.

Conclusions:
Even in our limited experience, the prostatic urethral lift has produced remarkable results, consistent with those in the published literature. This procedure is particularly suited for BPH patients concerned with maintaining erectile and ejaculatory function. Continued evaluation of this procedure using local anesthetic and in patients who are poor surgical candidates is recommended.
We present a 25 year-old male with a history of testis cancer with a post-chemotherapy “recurrence”. Following tissue diagnosis of Stage IIA nonseminoma with persistently elevated markers and para-aortic adenopathy suspicious for metastatic disease, he underwent chemotherapy. Despite resolution of the adenopathy, surveillance imaging revealed a new midline cystic mass above the bladder involving bilateral vas deferens. Following nondiagnostic aspiration of the mass, he was taken for laparoscopic excision with intraoperative frozen section negative for malignancy—posing a dilemma concerning preservation of fertility versus complete resection. The final pathology showed a fibrous capsule surrounding a core of inflammatory cells, blood and fibrin with no elements of tumor. This case illustrates the some of the difficult clinical decisions posed by uncertain findings during surveillance for testicular cancer.
Introduction: Disorders of sexual differentiation (DSD) occur approximately in 1:4500 live births. These are usually recognized at birth and evaluation proceeds history, physical exam, karyotype and evaluation of adrenal function. Sometimes, these patients are missed and they reach adulthood without any evaluation for a DSD.

Case Report: A 64 year old Caucasian male presented after having a prostate biopsy performed which revealed high-grade urothelial carcinoma with squamous differentiation. Accordingly, a full evaluation for urothelial carcinoma ensued. Cystoscopy was reportedly normal; however a urethral sinus existed with papillary growths. Given the need for surgical excision and complex anatomy, an MRI was obtained. (Fig 1.) The patient was found to have a complex urogenital sinus anomaly. The patient was taken to the OR for cystoprostatectomy, hysterectomy, salpingectomy and lymphadenectomy. The patient was found to have squamous cell carcinoma of the cervix with metastases to a single lymph node. There was no urothelial cancer. There was no prostate tissue identified. He underwent adjuvant chemotherapy and radiation and is currently under observation.

Conclusion: We report a case of ovotesticular DSD diagnosed by presumed prostate biopsy, but ultimate cervical biopsy.
Purpose: Pathological Gleason Score (GS) sum 8-10 at time of radical prostatectomy (RP) is a potent indicator of mortality. We have noticed that in our patient population there is a significant degree of downgrading at RP of high risk clinical GS 8-10 to pathological GS <8. We investigated pre-RP factors that would be able to predict the group that would be downgraded at RP.

Materials and Methods: We interrogated our Prostate Cancer database and identified 218 individuals with clinical Gleason Score 8-10 who underwent RP between 1992-2014. We then divided these individuals into two groups – those that were then downgraded to GS <8 and those that maintained GS 8-10 at RP. We looked at factors such as pre-biopsy PSA, age at diagnosis, age at RP, number of cores positive, BMI, and prostate volume.

Results: We identified 124 men who were downgraded from clinical GS 8-10 to pathological GS <8 at RP and 94 patients whose pathological GS was the same as their clinical GS. We used Mann-Whitney testing and parametric t-test to analyze their profiles and their pre-biopsy PSA, number of positive cores, race, age at diagnosis, age at RP, BMI, and prostate volume. We found that men who were downgraded at RP had fewer than 50% positive cores at biopsy (p<0.001), had lower pre-biopsy PSA (p<0.024), had lower age at diagnosis and at RP (2-tailed t-test 0.95 and 0.90), but prostate volume and BMI were not significantly different (2-tailed t-test 0.74 and 0.55).

Conclusions: Men with clinical GS 8-10 who were downgraded at RP were statistically significantly younger at diagnosis, younger at time of RP, and had fewer than 50% positive cores at biopsy. There was a trend for lower pre-biopsy PSA although this difference was not statistically significant.

Source of Funding: None
INTRODUCTION AND OBJECTIVES: High Intensity Focused Ultrasound (HIFU) therapy offers significant theoretical advantages over conventional definitive treatments for localized prostate cancer with fewer side effects and reduced cost. Efficacy of HIFU, however, remains in question. The purpose of this study is to assess the outcomes of our modified HIFU patient selection protocol utilizing Multi-Parametric MRI (MP-MRI) imaging and PSA cutoff levels for the identification and improved management of localized prostate cancer patients treated with HIFU therapy.

METHODS: Retrospective 85 month pilot study of prospectively collected data on 67 HIFU patients previously identified with biopsy proven localized prostate cancer. Inclusion criteria: 1) localized lesions on MP-MRI. 2) PSA levels ≤ 8.5 ng/ml. Outcome parameters: 1) Biochemical Disease Free Rate. 2) Need for definitive salvage therapy.

RESULTS: 67 men with biopsy proven prostate cancer (low, intermediate and high grade) and a PSA ≤ 8.5 ng/ml underwent MP-MRI imaging which confirmed localized disease. Patients were subsequently treated with definitive total gland HIFU therapy. There were 36 patients with Gleason 6 (PSA range 0.3-8.5), 28 patients with Gleason 7 (PSA range 1.67–8.5), 2 patients with Gleason 8 (PSA range 4.6-6.3) and 1 patient with Gleason 9 (PSA of 8.1). Mean PSA prior to treatment in all groups: 5.2. Mean PSA nadir (post treatment) in all groups: 0.14 ng/ml.

Complications: Urethral narrowing or bladder neck contractures occurred in about 20% of patients but was easily treatable. No incontinence, rectal wall injury, fistulas or ED was noted long term. Mean follow-up: 27.3 months (range: 3–85 months). Biochemical Disease Free Rate was 99%. Patients needing definitive salvage therapy: 1 patient.

CONCLUSIONS: Early results of this pilot study reveal that patient selection criteria using a PSA cutoff of 8.5 ng/ml and confirmed localized disease using MP-MRI imaging, significantly improves the Biochemical Disease Free Rate and substantially reduces the need for definitive salvage treatment following definitive HIFU therapy for prostate cancer. This data warrants further study.

Source of Funding: None
Objective: We evaluated changes in % free and total prostate specific antigen (PSA) over time in multiple ethnic groups to determine the utility and performance of % free PSA as a biomarker for detection of prostate cancer (PC) in the general population.

Material and Methods: The San Antonio Center for Biomarkers of Risk of Prostate Cancer (SABOR) is a population-based, multiethnic cohort of over 4000 men undergoing annual testing for biomarkers of PC since 2001. Beginning in 2008, free PSA was included in biomarker evaluations of 2390 participants for a mean of 3 years. The association between % free PSA, PSA, age, and ethnicity was evaluated in 1180 non-Hispanic Caucasians, 244 African Americans, and 718 Hispanic Caucasian men. We assessed % free PSA in prostate cancer cases vs. controls amongst all 2390 men. % Free PSA was stratified by cancer status, which included 151 non-Hispanic Caucasian men, 29 African American men, and 53 Hispanic Caucasian men with cancer. % Free PSA was also analyzed within each individual over time.

Results: Among the 2157 men, % free PSA and total PSA increased with age in all race/ethnic groups; no difference in the rate of increase with age was noted in the three groups. Approximately 40% of individuals age 55 - 70 in all groups had a % free PSA less than 25%. In this cohort, % free PSA appeared to be a better discriminator between cancer and control subjects among younger men. Compromising this test, like total PSA, % free PSA varied significantly within subjects over the study period; a total of 55%, 33%, and 6.4% percent of subjects had a % free PSA less than 25%, 18%, and 10% at least once during the study period, respectively.

Conclusion: %Free PSA changes over time are similar to those seen with total PSA with increasing age. % Free PSA changes with age are similar across all studied racial/ethnic groups. Although % free PSA seemed to be a better discriminator between cancer and no cancer among younger men, these findings must be interpreted with caution given the high % free PSA variability over time among our study subjects.

Source of Funding: This research is funded by U01CA086402
SESSION IX: INFERTILITY & ERECTILE DYSFUNCTION

ABSTRACTS
PROPOSED CLASSIFICATION SYSTEM AND TREATMENT ALGORITHM FOR ADULT BURIED PENIS SYNDROME

MAJ Timothy J. Tausch MD, LTC(R) Allen F. Morey MD, Jordan A. Siegel MD*, Ronald E. Hoxworth MD*
Presentation to be made by Dr Tausch

OBJECTIVE: Adult buried penis syndrome (ABPS) involves a spectrum of anatomic components, thus requiring a flexible yet comprehensive reconstructive approach for effective management. We present our experience with reconstructive strategies for ABPS, and propose a classification system and treatment algorithm based primarily on the degree of pathologic changes in the penile skin and secondarily on involvement of neighboring abdominal and/or scrotal components.

METHODS: We reviewed all patients who underwent reconstruction of ABPS at our institution between 2007 and 2014. We stratified patients by location and severity of involved anatomic components. Abdominal and scrotal involvement was determined preoperatively, while viability of the penile skin was determined intraoperatively after a ventral slit and penile release. We reviewed procedures performed, demographics, comorbidities, and clinical outcomes.

RESULTS: Fifty-six patients underwent reconstruction of buried penis at our tertiary center from 2007-2014. We developed a classification system based on anatomic component involved (Figure 1). We began all procedures with a ventral incision in the cicatricial ring, exposing the penis with the aid of a traction suture. If the uncovered penile skin was determined to be viable, a phalloplasty was performed by anchoring scrotal skin to the tunica albuginea of the proximal shaft, and the defect in the ventral shaft skin was closed with scrotal flap (VSSF). In more complex patients with circumferential non-viable penile skin, the penile skin was completely excised and replaced with a split-thickness skin graft (STSG). Complex patients with severe abdominal lipodystrophy required adjacent tissue transfer (ATT) via a multidisciplinary approach with plastic surgery collaboration. For cases of genital lymphedema, the procedure involved complete excision of the lymphedematous tissue, and primary closure with or without a STSG.

CONCLUSIONS: Successful correction of adult buried penis often necessitates a multi-modality approach, and excellent outcomes are possible with appropriate patient selection.
Penile prosthesis placement in patients with a history of total phallic construction.

Jack Zuckerman MD, Katherine Smentkowski MD, David Gilbert MD, Ramon Virasoro MD, Jeremy Tonkin MD, Gerald Jordan MD, Kurt McCammon MD
Norfolk, Virginia
(Presentation to be made by Jack Zuckerman)

Purpose: Describe technique and outcomes for penile prosthesis placement in patients with a history of total phallic construction.

Methods: Retrospective review penile prosthesis placement in patients with prior total phallic construction at a single center. Gortex sleeve corporal construction and pubic rami fixation was utilized in all patients.

Results: Thirty-one patients underwent neophallus prosthesis placement at a mean 35.6 years of age. Prosthesis placement occurred an average 56.3 months following phallic construction and follow-up was a mean of 59.8 months. Malleable prostheses were placed in 21 patients and inflatable in 10; implants were bilateral in 94%. Six percent experienced operative complications including a bladder injury (1) and phallic flap arterial injury (1). Post-operative complications occurred in 23% at a median 5.9 months following placement. Five prosthesis (16%) were explanted secondary to infection or erosion and two additional required revision. Of the explanted prosthesis one was later replaced without further complication. Eighty-one percent of patients were sexually active following prosthesis placement.

Conclusions: Penile prosthesis placement is possible in patients with prior phallic construction. Although complications rates appear to be increased in this population compared to historic controls of normal anatomic males, the majority in this series were sexually active following prosthesis placement. This demonstrates the utility of prosthesis implantation in these difficult patients.

Source of Funding: None
SESSION XII: GU TRAUMA & PEDIATRICS

ABSTRACTS
Purpose: Nephrolithiasis is becoming more common in children. The current recommendations are to perform a metabolic stone work up in all children with a history of a kidney stone. However, this is an expensive endeavor and it remains unclear if the results from this work up influence the management of these children. We sought to review the first serum and 24 hour urine results performed in children with a history of nephrolithiasis. Our goals were to determine 1) The most common metabolic abnormalities found in these children 2) To determine if there were any differences in children with metabolic abnormalities (MA) contributing to nephrolithiasis development and those patients with no metabolic issues (NMA) 3) To determine if the results affected the management of these children

Materials and Methods: An IRB-approved, retrospective review was performed of all children presenting to the University of Iowa between 2000-2014 with their first kidney stone episode. Their results of their first metabolic work up were reviewed and these results were then compared between MA and NMA.

Results: Our study included 113 total patients. Their mean age was 11 years (5 months-19 years) and 56 (50%) were male. 16 of these individuals (14%) had an underlying MA contributing to stone formation. The most common metabolic abnormality identified was low urine volume and was found in 88% of the entire cohort. This occurred more commonly in children with NMA (92%) as compared to MA (69%) (p=0.01). Hyperoxaluria was also found in 17 children (15%) but was more common in children with MA (40%) as compared to NMA (12%) (p=0.01). As expected, urine citrate was also more common in children with MA (31%) versus NMA (1%) (p=0.01). Metabolic abnormalities were identified in 88% of the entire cohort (MA 100% and NMA 86%). Despite these abnormalities only 51 (45%) patients were started on medical therapy and there was no difference in the rate of medical therapy between the MA and NMA cohorts.

Conclusions: The metabolic work up for children with a history of nephrolithiasis commonly reveals metabolic abnormalities. Overall, the most common abnormality identified was a low 24 hour stone volume. Other metabolic findings occurred at a low rate and most did not differ between children with MA and NMA. Also, the rate of starting medical therapy remained low. Given these findings, possibly different, less expensive evaluation methods could be used in this metabolic analysis.
Mike add in notes pages
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