THE USE OF MAGNETIC RESONANCE IMAGING AS A PREDICTOR FOR EXTRA-CAPSULAR EXTENSION AND SEMINAL VESICAL INVASIONS IN ROBOTIC ASSISTED LAPAROSCOPIC PROSTATECTOMY

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(Presentation to be made by Fuad F. Elkhoury, B.S.)

Purpose: The status of surgical margin has not improved with the usage of robotic system compared to the open approach during radical prostatectomy. Magnetic resonance imaging (MRI) has been used more widely as an adjunct to the management of prostate cancer. Statistical analyses have been performed in the usage of MRI to predict extracapsular extensions and seminal vesicles invasions found on robotic assisted laparoscopic prostatectomy specimens.

Methods: All patients who underwent prostate MRI prior to robotic assisted laparoscopic prostatectomy (RALP) were evaluated. Age, race, PSA levels, indications for MRI, interval between PNBx and MRI, interval between MRI and RALP, post-RALP PSA, and Gleason grades were collected. The presence or absence of extracapsular extensions and seminal vesicles invasions were evaluated in the MRI impressions and the post-RALP specimen.

Results: Twenty-four subjects were identified. The average age was 62.6 years old. The break-down on the self-reported ethnicity was 67% Caucasian, 17% African-American, and 17% unknown. The average PSA at time of PNBx was 10. The majority of the indications for MRI was for pre-RALP planning. The average months between prostate biopsies and MRI were 3.29 months, and between MRI and RALP were 1 month. Twenty-six percent (n=23) of patients had detectable PSA after RALP. The primary Gleason grades after prostate biopsies and RALP were 3.7 and 3.8, respectively. The secondary Gleason grades after prostate biopsies and RALP were 3.8 and 3.7, respectively. Majority of the patients were clinical stage T1c after the prostate biopsies and T2cN0Mx after RALP. The sensitivity and specificity of MRI for extracapsular extension were 45.5% and 76.9%, respectively. The sensitivity and specificity of MRI for seminal vesicles invasions were 16.7% and 100%, respectively.

Conclusions: This study suggests that MRI may be useful in predicting extracapsular extension and seminal vesicles invasions in prostate cancer prior to RALP.

Source of Funding: None
OPTIMAL TIMING FOR TREATMENT OF METASTATIC CASTRATION-RESISTANT PROSTATE CANCER (MCRPC): SEQUENCING AND IDENTIFYING PARAMETERS OF EARLY PROGRESSION WITH SIPULEUCEL-T

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(Presentation to be made by Dr. Crawford)

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

Methods: The phase 3 IMPACT trial of sipuleucel-T versus control showed a significant improvement in OS in mCRPC (HR: 0.78 [95% CI: 0.61, 0.98]; P=0.03; median OS difference 4.1 mos). We evaluated three subgroups in this trial in order to assist in sequencing and further treatment decisions.

Results: Some biomarkers support the administration of sipuleucel-T early after mCRPC diagnosis. First, a prespecified subgroup analysis of IMPACT showed a consistent treatment effect with sipuleucel-T across 47 subgroups of baseline prognostic variables. Further dividing patients into quartiles by baseline PSA levels in a post-hoc analysis confirmed that sipuleucel-T was effective across all subgroups, with the greatest benefit observed in the lowest PSA quartile group. In addition, product parameters from sipuleucel-T manufacture show successful antigen-presenting cell upregulation across several stages of prostate cancer, with the most robust activation observed in a Phase 2 study of men with localized prostate cancer. We also studied the number of lesions in the initial and follow-up bone scans in patients in the IMPACT treatment arm only; lowest baseline metastatic burden and slowest tumor velocity were prognostic markers associated with the longest OS.

Conclusions: Collectively, these data support the idea that optimal timing for sipuleucel-T treatment is early in the mCRPC treatment paradigm – soon after diagnosis of metastatic disease, when lowest disease burden is likely associated with a higher-functioning immune system and further investigation is warranted. The bone scan data aide in the decision process associated with the earlier addition of therapies in men with poor risk features of early progression.

Source of Funding: Dendreon Corporation
ANALYSIS OF THE ACS-NSQIP DATABASE DEMONSTRATES LAPAROSCOPIC RADICAL PROSTATECTOMY IS SAFE WITH SURGICAL TRAINEE INVOLVEMENT

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(Presentation to be made by Dr. Caras)

Introduction: Complication rates of Open Prostatectomies (OP) and Minimally Invasive Prostatectomies (MIP) performed by highly experienced surgeons in centers of excellence are well-known. Using a standardized, national surgical database we analyzed prostatectomy complications and how these outcomes are influenced by trainee involvement.

Methods: The American College of Surgeons National Surgical Quality Improvement Program is a risk-adjusted data collection analyzing risk factors, demographics, peri-operative and 30-day post-operative outcomes. From 2005-2011, we identified 10,669 total prostatectomies. Of these, 2,278 were OP, and 8,391 were MIP.

Results: Analysis showed a decreased incidence of overall morbidity, serious morbidity, surgical site infections, mortality, wound dehiscence, urinary tract infection, bleeding, and sepsis or septic shock (P<0.05) for MIP compared to OP. Trainee involvement was associated with a higher incidence of bleeding, overall and serious morbidity (P<0.001). Furthermore, this difference is isolated to post graduate year (PGY) 6-10 trainees performing OP (P<0.001). Otherwise, overall and serious morbidity was equivalent between PGY groups 1-10 vs. attending performing MIP and PGY groups 1-5 vs. attending performing OP. Operative times were shorter for OP vs. MIP by an average of 38 minutes (P<0.05), and operative times decreased with trainee experience seen in both OP and MIP. Length of stay was shorter for MIP compared to OP (3.2 vs. 1.8 days, P <0.001).

Conclusions: The large sample size, standardization, and quality control measures of NSQIP allow for in depth analysis of subtle differences in outcomes between groups. MIP maintained minimal 30 day morbidity with or without trainee involvement. Increased morbidity in the trainee group performing OP may be mitigated by awareness, simulation labs, and competency assessment.

Source of Funding: None
Background: Androgen deprivation therapy is the mainstay of prostate cancer treatment. Given its frequent failure, new therapy that reduces prostate cancer progression is needed. Gene therapy has been used in clinical cancer treatment. For gene therapy, Ad type 5 (Ad5), has been commonly used as a vector. Ad5 requires the coxsackievirus and adenovirus receptor (CAR) on the cell surface as an initial receptor for infection. However, the expression of CAR on cancer cell is often down-regulated. To overcome this hurdle, a novel type of Ad vector, which is chimeric type 5 and containing type 35 fiber proteins (Ad5/F35) was invented. What is better, Ad5/F35 vector recognize human CD46 (expressed on hematopoetic cells) as a cellular receptor, for infection. Second hurdle is: the majority of humans carry preexisting humoral and/or cellular immunity to Ad5 which may severely limit the use of Ad5 based vectors. Meanwhile, γδ T cell is known to recognize and attack cancer cells. For the reasons, we investigated whether the γδ T cells can be a transporter for Ad5/F35 delivery in this study. Also, to further explore the cellular localization of internalized Ad5/F35 particle, PC3 cells were investigated with electron microscope.

Materials and Methods: The Ad5/F35-GFP, chimeric type 5 and type 35 fiber proteins expressing GFP was used. The γδ T cells was expanded from PBMC with the stimulation of Zoledronic acid and IL-2. GFP expression in γδ T cells and PC3 cells transduced by Ad5/F35-GFP was determined by fluorescent microscope and Flow cytometer. Ad5/F35 particle within PC3 was investigated with electron microscope.

Results: After the co-culture of Ad5/F35-GFP infected γδ T cells and PC3 cells, GFP expression was recognized with 98% of PC3 cells. With electron microscope, as we expected, Ad vector particles were seen within an endocytic vesicle, in between contacting part of γδ T cells and PC3 cell and MVBs (multivesicular body) were seen within cytoplasm of PC3 cell. (Conclusion): The findings of the present study demonstrated that γδ T can be a novel and reasonable transporter of Ad5/F35 to the cancer cell. Also, secondary Ad infection to the cancer cell can be expected. Then the secondary infection might contribute to additional cytotoxicity for cancer cells.

Source of Funding: None
ADJUVANT RADIATION THERAPY FOR POSITIVE SURGICAL MARGINS AFTER ROBOTIC PROSTATECTOMY DOES NOT PROVIDE A SURVIVAL ADVANTAGE

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(Presentation to be made by Dr. Nazmy)

Introduction: Following robotic prostatectomy for prostate cancer, patients with adverse pathologic features and/or positive surgical margins are offered adjuvant radiation therapy. Previous studies have found positive surgical margins to be a risk factor for biochemical recurrence, but not overall survival. We evaluated survival endpoints in two matched groups of patients differing in their receipt of adjuvant therapy.

Methods: Using an IRB approved database, we identified robotic prostatectomy patients with a minimum of 36 months of follow up and positive surgical margins. 31 patients who had received adjuvant radiation therapy were identified. These were matched 1:2 based on PSA, pathologic Gleason score, and pathologic stage with patients who had not received adjuvant therapy. Overall and biochemical recurrence free survivals were examined. PSA groupings were <4, 4-10, 10-20, and >20 ng/mL, Gleason score groupings were 6, 7, and 8 or greater, and pathologic stage groupings were pT3a or less vs. pT3b or higher.

Results: Median follow up in the no adjuvant group was 69.4 months (IQR 49.1 – 83.0) and 61.8 months (IQR 49.4 – 75.9) in the adjuvant group. Median age, BMI, PSA, and D’Amico risk group were not statistically different between the two groups. Kaplan Meier (KM) estimated 3 year BCRFS in the group without adjuvant therapy was 76.2% (95%CI: 60.8-86.2) vs. 77.3% (95%CI: 58.1-88.5) in the adjuvant therapy group. KM estimated 5 year BCRFS in the group without adjuvant therapy was 73.0% (95%CI: 56.8-84.0) vs. 64.9% (95%CI: 44.0-79.6) in the adjuvant therapy group (p=0.5).

KM estimated 3 year OS in the group without adjuvant therapy was 95.2% (95%CI: 85.7-98.4) vs. 93.8% (95%CI: 77.2-98.3) in the adjuvant group. KM estimated 5 year OS in the group without adjuvant therapy was 95.2% (95%CI: 85.7-98.4) vs. 89.8% (95%CI: 71.5-96.6) in the adjuvant group (p=0.08).

Conclusions: Positive surgical margins did not result in statistically significantly different OS and BCRFS rates between the two groups, suggesting that adjuvant radiation therapy may be over-utilized in patients with positive margins. Further prospective and randomized study is warranted.

Source of Funding: None
Purpose: Several hundred of biomarkers have been studied in the field of prostate cancer (PCa) and to date, only PSA, its derivative and recently PCA3 have been approved by the FDA for clinical use. Lack of external validation and study-reporting standardization frequently undermine the value of those reports, resulting in limited translational research. We decided to discuss the availability and use of guidelines for biomarkers publication. We also hypothesized that most of the studies published in PCa did not follow biomarkers guidelines for publication.

Materials and Methods: A literature research through March 1st, 2013, identified published papers focusing in biomarkers-IHC based studies that were associated with clinical outcomes, such as biochemical-recurrence (BCR), metastatic progression, prostate cancer-specific mortality (PCSM) or surrogate endpoints like disease progression. We selected papers published in English after 1990, focusing on at least one of these four clinical endpoints. The studies had to be prostatic tissue-IHC-based and had to include uni- and/or multivariable analyses. Data acquisition for two of the main endpoints, namely PCSM and metastatic progression, was summarized into tables. Compliance to any type of guidelines to design the study, to report the results or to report the additive value of those findings (i.e. predictive accuracy) was assessed in all studies that meet our criteria.

Results: Of 19,773 records identified for "prostate and biomarkers", only 92, 20, 150 and 55 papers meet our inclusion criteria for PCSM, metastatic progression, BCR and disease progression, respectively. Tables summarizing papers focusing on PCSM and metastatic progression showed that the majority of the biomarkers had only one study to support its use and for the rest of the biomarkers, studies are not comparable since they had significant differences on outcome definition, statistical analysis, tissue type and sample size. None of the studies analysed were compliant to biomarkers publication guidelines, neither reported the additive value of the newly discovered biomarkers, compared to standard outcomes predictors.

Conclusions: Our review of the literature confirms a lack of external validation and translational research for the large majority of the immunohistochemistry-based biomarkers in prostate cancer. Moreover, most of the studies reviewed are not compliant to any standard protocols design, such as the REMARK or BRISQ guidelines, nor report predictive accuracy of the newly discovered biomarker. Efforts toward standardization in the field of biomarkers should be encouraged in order to impact patient's benefit.

Source of Funding: None
Purpose: Operative time assessment is inherent to defining surgeon learning curves and evaluating quality of care. The objective of our study is to determine factors that influence radical prostatectomy (RP) operative times.

Materials and Methods: Population-based observational cohort study using US Surveillance, Epidemiology, and End Results (SEER)-Medicare linked data of men diagnosed with prostate cancer during 2003-2007 who underwent robotic assisted radical prostatectomy (RARP, n=3,458) and retropubic radical prostatectomy (RRP, n= 6,993) through 2009. We obtained median operative time using anesthesia administrative data for RP and used median regression to assess the contribution of patient, surgeon, and hospital factors to operative times.

Results: Median RARP operative time decreased from 315 minutes to 247 minutes from 2003 through 2008-09 (p<0.001) while median RRP operative time remained similar (195 vs. 197 minutes, p=0.90). In adjusted analysis, RARP vs. RRP (parameter estimate [PE] 70.9; 95% confidence interval [CI] 58.84; p<0.001) and obesity (PE 15; 95% CI 7.23; p<0.001) were associated with longer operative times while higher surgeon volumes were associated with shorter operative times (p<0.001). Prostatectomies performed by surgeons employed by group (PE-22.76; 95%CI -38.58,- 7.49; p=0.004) and non-government (PE-35.59; 95%CI -68.15,- 3.03; p=0.032) vs. government facilities and non-profit vs. government hospital ownership (PE-21.85; 95%CI -32.28,- 11.42; p<0.001) were associated with shorter operative times.

Conclusions: During our study period, RARP operative times decreased by 68 minutes while RRP operative times remained stagnant. Higher surgeon volume was associated with shorter operative times, and selective referral or improved efficiency to the level of high volume surgeons would net almost $15 million dollars in annual savings.

Source of Funding: None
PROTON BEAM THERAPY FOR LOCALIZED PROSTATE CANCER
101: THE BASICS, CONTROVERSIES AND FACTS

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Introduction and Objectives: Proton beam therapy (PBT) has become a source of controversy, and the mixed messages in the literature leave many urologists ill-equipped to counsel their patients regarding this therapy. Our objective is to review the basic science of PBT, to examine the reasons for both the hype and the controversy surrounding this therapy, and most importantly to examine the literature so that every urologist is able to counsel their patients on this subject.

Results: As opposed to photons which have significant entrance and exit doses, the proton’s effect is greatest at the desired depth, with no exit dose. These unique dose distribution properties give us the ability to increase doses to the target while reducing the exposure of surrounding organs, as demonstrated by multiple dosimetric studies. Theoretically, this should lead to superior disease control while reducing toxicity and second malignancies, hence the enthusiasm it has generated in the radiation oncology community. The significant cost of PBT remains a barrier to widespread use, but its cost-effectiveness requires more study as the results to date conflict. However, there are technologies being developed which may decrease the cost, and hypo-fractionation has the potential to dramatically decrease the cost if shorter PBT regimens prove to be equally effective, a topic that is currently being studied. The only phase 3 trial with PBT in prostate cancer to date did not compare photon therapy to PBT but compared photon therapy plus low- or high-boost doses of PBT resulting in exceptionally high rates of biochemical control with minimal toxicity. The higher dose PBT boost arm was able to improve biochemical control significantly without increasing toxicity. This contrasts with the phase 3 dose escalation trials with photons only, which revealed better control of disease with higher doses but at the cost of increased complications. The single-arm studies of PBT have shown favorable cancer control with exceptionally low toxicity rates.

Conclusions: The unique properties of protons allow greater dose distribution to the prostate, which should result in greater cancer control without increasing toxicity rates. While initial costs are significant, hypo-fractionation and other technologies could make it greatly more cost-effective than current regimens. The single-arm studies are promising, but a recently opened phase 3 trial will hopefully better highlight the differences between PBT and photon therapies.

Source of Funding: None
CONFIRMATION OF THE FREE HORMONE HYPOTHESIS: DECREASES IN PSA CORRELATE WITH FREE TESTOSTERONE RATHER THAN TOTAL TESTOSTERONE IN MEN WITH ADVANCED PROSTATE CANCER TREATED WITH GTX-758

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(Presentation to be made by Dr. Getzenberg)

Objectives: Androgen deprivation therapy (ADT) improves disease-free survival but disease progression is related, in part, to ineffective castration. The free hormone hypothesis states that the biological activity of steroid hormones is affected by its unbound (free) rather than its protein-bound concentration. Serum total testosterone (T) concentrations predominantly reflect the T bound to plasma proteins and do not accurately predict prostatic levels of T.

Materials and Methods: In a Phase II study (G200705), men with advanced prostate cancer (n=159) were randomized to receive 1000 mg or 2000 mg GTx-758 daily or leuprolide as their initial ADT. Serum total T (mass spectrometry), free T (equilibrium dialysis), SHBG and PSA concentrations were measured. A second Phase II study (G20007) was performed in men (n=9) with CRPC who then received GTx-758 2000 mg daily.

Results: Although both treatments reduced serum total T levels to < 50 ng/dL, leuprolide decreased them to a greater extent. However, GTx-758 caused greater reductions in serum PSA, suggesting that total T concentrations did not accurately reflect the suppression of androgen activity. Both dosages of GTx-758 reduced free T levels to a greater extent (mean of 0.7 and 0.4 pg/ml at day 60, and 0.4 and 0.4 pg/ml on day 90, respectively) than leuprolide (mean of 1.4 pg/ml on day 60 and 1.4 pg/ml on day 90; p values <0.03). Similar clinical results were observed in CRPC patients where GTx-758 daily resulted in a 71% decrease in %free T and clinically relevant PSA reductions in men maintained on ADT with LHRH agonists. As a result of adverse events at higher doses of GTx-758, the trial was stopped early.

Conclusion: The ERα agonist, GTx-758, reduced the biologically active form of T, free T, to significantly lower levels than leuprolide. Reductions in PSA appeared to be more highly associated with changes in free T. These data provide compelling evidence to support the free hormone hypothesis and suggest that serum free T concentrations would provide a better measure of therapeutic efficacy in ADT than total T. A Phase II clinical trial utilizing lower doses of GTx-758 (G200712) is currently being performed.

Source of Funding: GTx, Inc.
PROSTIVA® RF THERAPY FOR BPH: A RETROSPECTIVE ANALYSIS OF SINGLE-CENTER OUTCOMES
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(Presentation to be made by Dr. Sethi)

**Purpose:** Alpha blockers and 5-reductase inhibitors are generally the first line treatment for symptomatic benign prostatic hyperplasia (BPH); however, medical therapy offers only a modest improvement in lower urinary tract symptoms (LUTS) and quality of life (QoL) for men. Minimally invasive office-based therapies offer significant and durable improvement in LUTS, do not require general anesthesia, and have far less comorbidity than TURP. We set out to quantify subjective and objective improvement in our own patients who chose Prostiva RF Therapy to treat their BPH.

**Methods:** Data from consecutively treated patients (2008 - 2011) were reviewed for inclusion before being extracted from electronic medical records, de-identified and transferred to patient case report forms, and double-key entered into a central database. Patient data were analyzed using SAS 9.3 (Cary, NC). Change (absolute) from baseline was tested for significance using paired difference t-test (Signed Rank test for PVR measures) and a p-value <0.05 was considered statistically significant. Percent change was calculated as mean change divided by mean baseline for paired data.

**Results:** Retrospective data from 120 patients were reviewed. Patients lacking baseline American Urological Association Symptom Score (AUASS), or follow-up for 12 months, were excluded (n=69). A total of 51 patients met inclusion criteria for analysis, including 8 patients in acute urinary retention (AUR) at the time of treatment. Table 1 shows changes over time in AUASS, QoL, peak flow rate (Qmax), and post void residual (PVR). All outcome measures showed a statistically significant change (p <0.01) from baseline at all time points. The most common adverse events were urgency (n=8), retrograde ejaculation (n=7) and hematuria (n=5). Of the 8 AUR patients, 7 were voiding spontaneously after treatment.

**Conclusions:** Our patients showed significant improvement in AUASS, QoL, Qmax and PVR over 2 years and a low acceptable adverse event profile. We believe our data underscores the considerable efficacy of transurethral needle ablation in a real-world heterogeneous population. We will continue to follow this cohort as well as prospectively track new patients treated with Prostiva RF Therapy for BPH in our office.

**Source of Funding:** Urologix, Inc.
Background: Recurrent prostate cancer (PCa) has diverse and profound clinical implications. The typical pattern of spread of recurrent PCa involves regional nodes and skeleton. Very rarely are visceral metastasis the first presentation of recurrence of disease. Although, ureteral obstruction for locally advanced prostate cancer has been well described in the literature, a ureteral metastatic deposit from recurrent PCa has not previously been described. The purpose of this case presentation is to describe a case of ureteral recurrence of disease with obstruction, and a review of the available literature on the management of PCa malignant obstruction.

Patient’s Clinical History: Mr. LE is a 87 year old M with a history of Gleason 7 T3a PCa status post radical retropubic prostatectomy twenty years prior to presentation. Patient had biochemical recurrence and was placed on intermittent hormone ablation thirteen years after his prostatectomy. Approximately twenty years after diagnosis, his PSA had risen to 32.1 from 6.3 six months prior and his creatinine 1.2 from 0.9. CT scan of the abdomen demonstrated a four cm enhancing lesion in the distal right ureter extending to the right ureterovesicular junction with proximal marked hydroureteronephrosis. His urine was negative for blood, and cytology was positive for atypical cells. Given these findings, he underwent ureteroscopy, retrograde ureteral pyelogram, biopsy and stent placement. Pathology would reveal moderately differentiated PCa. After the diagnosis had been made the patient was brought back to the operative room, and a ureteral resectoscope was utilized to relieve the upper tract obstruction. He was then placed on Bicalutamide in addition to Lupron.

Review of the literature: The reported incidence of upper tract obstruction is around 3.3 to 16% with direct invasion of the trigone from the disease process. This diagnosis carries an overall poor prognosis of 41 vs 54 months with and without ureteral obstruction respectively. The options for decompression include percutaneous nephrostomy tube placement vs polymeric ureteral stent insertion. The failure rate of stent placement has been reported at 44-58%. In situations where a single polymeric stent has failed, placement of tandem stents has been shown by liu and Hrebinko et al to be effective. Metallic stents have also demonstrated a 100% technical success rate and 51% primary patency rate. Percutaneous tube placement is another viable option for relief of upper tract obstruction. However, complications such as malposition, dislodgement are reported as high as 4-26%. Other literature has suggested that endocrine therapy has also demonstrated a 85% response rate in the hormonally non castrate group. Quality of life after comparing indwelling ureteral stents vs PCN demonstrated no difference in QoL scores.

Conclusion: Ureteral obstruction represents a difficult problem for PCa. Previously, there has not been one report of obstruction from recurrence of ureteral PCa. Management of an obstruction comes in the form of decompression of the upper tracts while hormone therapy causes regression of the malignancy.

Source of Funding: None
EFFECTIVENESS AND SAFETY OF INTRAVESICAL VALRUBICIN IN NON–MUSCLE-INVASIVE BLADDER CANCER ARE SIMILAR IN OLDER AND YOUNGER PATIENTS

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(Presentation to be made by Dr. Harper)

Background: Valrubicin was approved in the United States in 1998, removed from the market in 2002 because of manufacturing issues, and reintroduced in 2009. We report the effectiveness and safety of valrubicin, stratified by patient age, from a US multicenter, observational, retrospective study.

Materials and Methods: Medical records of adults with non–muscle-invasive bladder cancer (NMIBC) who used valrubicin were abstracted between March and September 2011. The median age (75 y) of the entire population was the stratification cutoff. Kaplan-Meier analyses were performed for event-free survival (EFS), worsening-free survival (WFS), and progression-free survival (PFS).

Results: 113 patients received valrubicin (median, 6 instillations [range, 2–18]). Mean age was 66 years and 82 years in those ≤75 (n=58) and >75 years (n=55) of age, respectively (age range, 42–95 y). Median EFS, WFS, and PFS were similar in patients ≤75 vs >75 years old; 1-year rates were 17.8% vs 15.4%, respectively, for EFS; 80.2% vs 81.4% for PFS; and 16.1% vs 14.3% for WFS. 11 (19%) patients aged ≤75 years vs 4 (7%) aged >75 years underwent radical cystectomy; 28 (48%) vs 28 (51%), respectively, experienced ≥1 local adverse reaction; 3 (5%) vs 4 (7%) experienced ≥1 serious adverse event; and 4 (7%) vs 1 (2%) discontinued as a result.

Conclusions: In patients with NMIBC treated with intravesical valrubicin, effectiveness and safety are similar in patients aged ≤75 and >75 years.

Source of Funding: Research and abstract were supported by Endo Pharmaceuticals Inc.
MUCINOUS ADENOCARCINOMA OF THE FEMALE URETHRA, A DIFFICULT CASE

(Presentation to be made by Dr. Dyer)

Abstract: Mucinous adenocarcinoma of the female urethra is a rare malignancy, possibly arising from the periurethral glands of the vagina. We report the case of a 60-year-old Caucasian female with adenocarcinoma of the urethra that initially presented with obstructive voiding complaints. Excision of the mass revealed invasive mucinous adenocarcinoma. Ultimately, the patient underwent radical cystectomy and ileal conduit urinary diversion for control of her disease, indicating the role of early identification and surgical intervention for such cases.

Introduction: Carcinoma of the female urethra is an uncommon malignancy, accounting for about 0.02% of female cancers. In particular, female primary urethral adenocarcinoma is a rare malignancy of unclear origin. Adenocarcinoma of the female urethra accounts for 8-10% of female urethral cancers. Previous studies have alluded to the origin of urethral adenocarcinoma to the periurethral Skene’s glands. These can be further divided in the clear cell and mucinous types.

Case: This is a 60-year-old female who presented with obstructive voiding symptoms. Physical exam revealed a 1.0 x 1.5 cm distal urethral mass. The mass was well circumscribed, and firm in appearance. She underwent an open excision of the mass and cystoscopy, which revealed no other bladder lesions. Pathology revealed invasive mucinous adenocarcinoma (Figure 1). Cytology at the time of surgery was also positive for adenocarcinoma.

Postoperatively she developed vaginal spotting and gross hematuria. She transferred her care to our tertiary care center. Physical exam revealed no residual mass. PET scan and CT were negative for metastatic disease. She underwent repeat cystoscopy and distal urethrectomy. Pathology again revealed invasive adenocarcinoma with mucinous features with negative margins at 2mm. The tumor was 0.6cm in size. No lymphovascular invasion could be identified. The tumor stained positive for CK20 and CDX2 and negative for CK7. Cystoscopy was unremarkable and cytology showed atypical cells.

After extensive counseling the patient desired radical cystectomy and creation of ileal conduit urinary diversion. A focus of invasive adenocarcinoma was identified in the proximal urethra (Figure 2). There was a separate focus of mucinous metaplasia in the distal urethra (Figure 3). No evidence of mucinous changes within the bladder.

Discussion: Primary female urethral carcinoma is a rare entity accounting for 0.003 percent of malignant neoplasms of the female genitourinary tract. The origins of primary urethral tumors are thought to be the periurethral Skene’s Glands'. Mucinous adenocarcinoma is most often composed of colonic-type glandular epithelium and may contain abundant extracellular mucin. It strongly resembles mucinous carcinoma of the colon, rectum, pancreas, prostate, and breast.

Patients can present with a variety of symptoms including dysuria, urethral bleeding, urinary frequency, and even a palpable mass. Tumors typically spread through local extension and can ulcerate to the skin and vulva. Lymphatic spread is uncommon but one-third of patients have palpable nodes at time of presentation. Hematogenous spread can also occur to the lung, liver, bone, and brain. Our patient reveals a challenging scenario for management. On all follow up physical exam and imaging she has no clinical evidence of disease recurrence but did have microscopic evidence of invasive adenocarcinoma on her pathology specimens.

For advanced disease, combination chemotherapy, radiation, and surgery have been described in the literature. Using early surgical intervention, we have hopefully avoided any additional therapy for our patient in the future.

Source of Funding: None
Purpose: Stress urinary incontinence significantly affects the quality of life for many women, and a growing number are undergoing sling placement. Patients with mesh erosion often require multiple surgeries to remove the mesh and then to repair the underlying clinical problem. A surgical field exposed to multiple previous surgeries may cause disrupted vascular supply and tissue fibrosis that challenge surgical reconstruction. Hyperbaric Oxygen therapy (HBO) has been used for the treatment of compromised skin grafts or flaps, necrotizing soft tissue infection, delayed radiation injury, and osteomyelitis. We present a case of HBO therapy employed to treat poor vaginal flap healing after autologous mid-urethral sling.

Materials and Methods: A 75 year-old female who presented with recurrent stress urinary incontinence, after 2 failed mesh procedures, underwent excision of the mesh and placement of an autologous sling. During the post-operative period, the patient was maintained on anticoagulation for a history of prosthetic aortic valve. The patient developed a vaginal wound hematoma and dehiscence that was treated with 20 cycles of hyperbaric oxygen.

Results: The application of HBO therapy was well tolerated and effective. By 10 months follow-up, relief of stress urinary incontinence was sustained.

Conclusion: HBO therapy finds utility when other measures such as surgical reapproximation and wound care are not effective. HBO represents a helpful adjunct to promote wound-healing after complex vaginal reconstruction.

Source of Funding: None
MRI OF THE ANKLE PERFORMED ON AN INTERSTIM PATIENT
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(Presentation to be made by Dr. Huang)

Purpose: Sacral neuromodulation with InterStim therapy has been established as an effective treatment modality for patients with non-obstructive neurogenic bladder dysfunction. Patients undergoing InterStim implantation often have multiple co-morbidities, many of which require magnetic resonance imaging (MRI) for diagnosis and management. Although MRI of the head has been approved for use with the InterStim neurostimulator, imaging of other regions remains controversial. Anecdotal and experimental evidence regarding implants and leads demonstrate a potential for unintentional heating, dislodgement, or stimulation with MRI. We present a case of Achilles tendinosis diagnosed on MRI of the ankle in a patient with an implanted InterStim device.

Materials and Methods: A 72 year-old female with a history of bilateral InterStim implantation for nonobstructive neurogenic bladder dysfunction presented with left ankle pain. Upon consultation with a podiatrist, a recommendation was made to undergo MRI of the ankle. On the day of planned imaging, the patient presented to clinic for deactivation of her neurostimulator. Using a transmit/receive head coil, the left ankle was imaged successfully without any adverse events.

Results: After undergoing MRI of the ankle, the patient successfully restored the neurostimulator to pre-MRI settings. At two months of follow-up, the patient continues to have good control of symptoms with InterStim therapy.

Conclusions: MRI of the ankle is feasible in patients with InterStim implants using transmit/receive coils. Routine use of MRI in this setting is not recommended, however further study is warranted to study the safety of MRI in InterStim patients.

Source of Funding: None
POTENTIAL ISSUES WITH OBESITY IN ADULTS UNDERGOING CONTINENT CATHETERIZABLE CHANNELS
David A. Hadley, M.D., Kirk M. Anderson, M.D., Bryan J. Flynn, M.D.: Loma Linda, CA
(Presentation to be made by Dr. Anderson)

Purpose: Neurogenic bladder (NGB) from spina bifida, spinal cord injury, or other neurologic conditions can be a severely debilitating condition that may lead to incontinence and chronic renal failure due to poor bladder compliance and high intravesical pressures. Clean intermittent catheterization, with or without pharmacotherapy, has become the gold standard to facilitate bladder emptying and maintain a low-pressure system. However, self-catheterization via the urethra can sometimes prove to be very challenging in this patient population. Therefore, an abdominal catheterizable stoma is often considered to facilitate catheterization of the bladder. While the technique and outcomes have been well described in the pediatric population, there are few studies evaluating adult patients that have undergone surgical placement of a continent catheterizable channel (CCC). Adults can have significantly elevated Body Mass Indexes (BMI), posing a challenge of connecting the bladder to the abdominal wall. The purpose of this study is to describe the techniques, outcomes, and complications in adult patients following placement of a CCC.

Materials and Methods: A retrospective chart review was conducted of 26 adult patients who underwent creation of a CCC between 2004 and 2013. Surgical technique, concomitant procedures, complications, continence, ease of catheterization, BMI and need for further surgical interventions were recorded.

Results: Twenty females and 6 males, with a mean age of 48 years old, underwent creation of a CCC. Techniques used were: a spiral Monti channel in 17 patients, double Monti in 7 patients, and a single Monti in the remaining 2 patients. Concomitant ileal enterocystoplasty was performed in 22 (85%) patients. Reoperation was performed in six (23%) patients. However, at an average follow up of over 5 years, 7 (27%) patients are currently unable to use their channel. While 3 of these patients’ issues can be traced to technical problems, the remaining 4 have an intact channel but an average BMI of 44.

Conclusions: In the adult population, continent catheterizable channels provide the majority of patients with a functional channel at a mean follow-up of 5 years, despite high BMI’s. However, in our small series, the patients with the highest BMI’s almost all stopped catheterizing their channel over time.

Source of Funding: None
Purpose: In the middle and older years, a woman or man can have troublesome pelvic malfunctions, which may be concurrent (and even interactive) among multiple pelvic organs. For a given patient, office interview can be a lengthy and incomplete way to detect all malfunctions and causes. The Pelvic Organ Dysfunction Questionnaire (PODQ) is a comprehensive survey instrument (Male or Female version), ultimately for secure 'on line' completion by an individual patient with secure electronic analysis. Understandable results then returned securely to each patient, and concise technical data also sent to personal physician(s) with proper consent. Possible future support instrument for population surveys and randomized trials. Purpose here (4 associated abstracts) is to compare selected responses from consented research subjects (patients) and consider these complex inter-organ relationships.

Materials and Methods: PODQ was originally created by multiple focus groups of patients with these various conditions. The questions were carefully saved to preserve the exact words used by patients to identify/describe each problem, symptom and concern. PODQ covers 10 Domains--3 lower urinary tract, 3 ano-rectal, pelvic issues (anatomical support, sexual & menstrual function, pain) with quantitative measures of frequency, severity, duration, personal impact, etc. Multiple other items regarding medical history, related problems-treatments-systemic diseases, etc. Database maintenance and analysis STATA version 7 and later, graphics Excel. Compliance with all academic Institutional Review Board (IRB) mandates to protect patient personal information and data analysis.

Results: To date, the Questionnaire has been completed by 103 research subjects (patients), 83 women and 20 men. At this stage of development it is a long document (average completion time 45 minutes)—in part because of the many intentional duplicate items. The next phase will include statistical validation by comparison of each patient's Questionnaire responses to that patient's own quantitative diagnostic test data.

Conclusions: With further validation and size reduction, PODQ can provide time-efficient, cost-effective and informative support for daily practice, population surveys and clinical trials.

Source of Funding: None
PELVIC ORGAN DYSFUNCTION QUESTIONNAIRE (PODQ) - II.
LOWER URINARY TRACT
William W. Bonney, M.D, M.S.: Irvine, San Diego CA
(Presentation to be made by Dr. Bonney)

Purpose: To review and compare selected Questionnaire responses from research subjects (patients) in regard to their own lower urinary tract symptoms, problems, severity measures, and the resulting impact upon their lives.

Materials and Methods: The Pelvic Organ Dysfunction Questionnaire (PODQ) covers three Domains of lower urinary tract function—urgency (overactive bladder), incontinence, and voiding dysfunction. (For information about this Questionnaire, its administration and analysis, please see Materials and Methods in abstract PODQ – I. Overview, Patient Demographics.)

Results: Age: In all of these 3 urinary Domains, age is not a significant factor (see graph). Urinary urge: Urgent, frequent urination 5 days/month insignificant, 25 days/month a major concern. It is triggered equally by physician exertion, bowel function and vaginal prolapse. Ability to stop urge by pelvic contraction (Kegel) enables postpone urination—19/27 can postpone by stopping urge, 73/81 unable to stop urge or postpone. Urinary incontinence: 24 patients equally stress and urge, while 16 mostly or exclusively stress and 39 mostly or exclusively urge incontinence. Urinary incontinence unrelated to voiding difficulty. Pelvic floor contraction (Kegel) can prevent leakage (also stop urgency OAB). Prevalence—28 patients urinary only, 29 fecal only, 37 both, and 16 neither. Voiding difficulty: Neither pelvic prolapse, constipation, nor loss of urethral/vaginal/perineal sensation has significant influence on strength of urinary stream. In contrast to urgency & leakage, voiding difficulty has little impact on daily activity or quality of life.

Conclusions: Age is not a significant factor in lower urinary tract malfunctions. Both urinary urge and incontinence—unless controllable by pelvic floor (Kegel) contraction—have a huge impact on daily activity and quality of life. Voiding difficulty is less of a concern to patients

Source of Funding: None
Purpose: To review and compare selected Questionnaire responses from research subjects (patients) in regard to their own ano-rectal symptoms, problems, severity measures, and the resulting impact upon their lives.

Materials and Methods: The Pelvic Organ Dysfunction Questionnaire (PODQ) covers three Domains of ano-rectal function—anatomical distortion, fecal incontinence, and constipation. (For information about this Questionnaire, its administration and analysis, please see Materials and Methods in abstract PODQ – I. Overview, Patient Demographics.)

Results: Ano-rectal problems are complex, interactive anatomical and functional events. Stool consistency does not coincide with frequency of bowel movements. Rectal prolapse (along with vaginal) has nothing to do with pelvic floor strength (Kegel) but does contribute to patients’ perceived problems. Fecal incontinence occurs along with urinary urge and stress incontinence, and occurs more often with sensory loss. Incontinence frequency similar with both solid stool and soft-mucus. Vaginal prolapse severity correlates with fecal incontinence. Constipation is more common with advanced age. Have not confirmed significant correlation with ano-rectal sensory loss, rectal pain, vaginal prolapse or voiding difficulty (strength of urinary stream).

Conclusions: Stool consistency does not explain frequency of bowel movements or incontinence, but rectal sensory loss is an issue. Rectal (and vaginal) prolapse occur despite normal pelvic floor muscle strength, and tend to present simultaneously. Constipation is age-related.

Source of Funding: None
**Purpose:** To review and compare selected Questionnaire responses from research subjects (patients)—comparison of their own symptoms, problems, severity measures, and the resulting impact upon their lives—from pelvic/vaginal prolapse, pelvic pain and sexual dysfunction.

**Materials and Methods:** The Pelvic Organ Dysfunction Questionnaire (PODQ) also covers these Domains—pelvic organ prolapse, pelvic and genital pain, sexual dysfunction, and sensory loss. (For information about this Questionnaire, its administration and analysis, please see Materials and Methods in abstract PODQ – I. Overview, Patient Demographics.)

**Results: Vaginal prolapse:** The impact of vaginal prolapse relates to its severity (downward extent) and frequency (days/month). In a given patient, the main problem can be symptoms in any pelvic organ (see graph). Vaginal prolapse relates to urinary incontinence and voiding difficulty (push anterior vaginal wall to void). Downward extent of prolapse is unrelated to pelvic muscle contraction (Kegel) strength, with a mixed relationship to fecal incontinence. ‘Pelvic pain’ is difficult to define. Among 43 Questionnaire respondents, it occurs in bladder (11), rectum (20) and in both (12). It is part of erectile dysfunction, but unrelated female sexual or bladder function, vaginal prolapse, endometriosis or menstrual periods. In women and men, **Sexual dysfunction** has a major impact on the life quality of these Questionnaire respondents, 50% of whom are sex active across all age decades. Urinary or fecal incontinence during sex is a major problem, but there is no significant relationship to pelvic pain, voiding dysfunction, constipation. **Sensory loss** (bladder, urethral, rectal, genital or perineal) impacts urinary control (but not voiding), pelvic pain, sexual and bowel function.

**Conclusions:** Vaginal prolapse, pelvic pain, sexual dysfunction and sensory loss are all inter-related in complex ways, and have major impacts on quality of life in both women and men.

**Source of Funding:** None
Objectives: We evaluated the safety and efficacy of deployment of SVF Stromal Vascular Fraction (rich in adult mesenchymal stem cells and growth factors) in a small group of patients with refractory Interstitial Cystitis. SVF can be easily obtained from adipose tissue lipo-aspirate and can be procured and deployed within a few hours in the operating room as a type of lipo-transfer procedure.

Methods: After IRB approved consent, seventeen patients with IC were selected for SVF deployment. A closed system (TimeMachine™ by MediKhan) device was used for SVF procurement. SVF was then deployed intravenously and also locally as an injection into the trigone and/or instillation into the bladder lumen. Patients were evaluated using Visual analog pain, PUF and O'leary-Sant scores before and 6 months after treatment.

Results: Over 6 months, PUF scores decreased from a mean of 20.3 to 14. O'Leary- Sant scores decreased from 22.5 to 11.3 and Pain scores went from 6.7 to 2.2. There were no adverse events related to the procedures.

Conclusions: Systemic and local deployment of SVF in a small group of IC patients can significantly decrease frequency, urgency, pain and improve pain levels. Some of the improvement may be related to the immuno-modulatory effects of SVF. Given our small study population, it is difficult to draw any substantive conclusions from these pilot data. Nonetheless the results of this study are compelling for these patients who had failed all standard therapies for IC. Cell based therapies may have a role in the treatment of interstitial cystitis and further studies are needed to determine long term results.

Source of Funding: None
OBJECTIVES: To review the current status and treatment of interstitial cystitis. A new comprehensive medical care model for the treatment of interstitial cystitis patients is proposed.

METHODS: A review of relevant literature was performed on the treatment of interstitial cystitis and conclusions summarized. Data from our recent study on the treatment of interstitial cystitis was analyzed. Interviews with interstitial cystitis patients were presented to emphasize important points. A broader repertoire of treatment options was formulated for interstitial cystitis patients.

RESULTS: Interstitial cystitis is a chronic and disabling disease. The current medical care for the treatment of interstitial cystitis is suboptimal. Many patients have persistent symptoms despite a variety of treatments. A placebo effect has been repeatedly observed in randomized, double-blind, placebo controlled IC trials. With no intervention except advice and support, 50% of patients achieved at least a 50% improvement in their IC symptoms. The medical approach to IC has done very little to incorporate the social aspect in the treatment of this disease.

CONCLUSION: Urologists need to have a different mindset when caring for IC patients. Interstitial cystitis must be viewed as a chronic disease. A comprehensive health care plan is reviewed that considers the social and environmental factors causing and exacerbating the disease, and social and medical treatment options to improve the quality of life for interstitial cystitis sufferers.

SOURCE OF FUNDING: None
Objectives: There is increasing data supporting glycosaminoglycan barrier restoration therapy for the treatment of Interstitial Cystitis (IC). Pentosan polysulfate (PP) has been used safely and extensively both orally and intravesically for glycosaminoglycan (GAG) barrier restoration therapy. Inefficient oral absorption and a hostile proton environment with relatively rapid washout diminish the efficacy of barrier restoration therapy. In an effort to improve drug delivery, protect the GAG molecule, prolong dwell times, and enable effective urothelial absorption, high quality multilamellar liposomes were employed to encapsulate the PP which was instilled intravesically in a group of refractory IC patients.

Methods: This study included patients with refractory (IC) confirmed by NIDDK criteria all of which had failed either oral and/or intravesical PP therapy. All Patients received biweekly intravesical instillations of 400 mg PP homogenized at 16000 rpm with 150 mg of liposomes (50-200 microns). Patients received at least 4 treatments (mean 4.6) and subjective outcomes tools were obtained consisting of the O'Leary-Sant scores and Pelvic Pain Urgency Frequency scores.

Results: Eight subjects received a total of 37 intravesical instillations of PP encapsulated into liposomes. No adverse events were recorded in this pilot study. Several of the patients noted durable and sustained relief of symptoms for greater than 6 months. Mean Oleary-Sant scores decreased from 26.5+/-7.2 to 13.8+/-9.6 and mean PUF scores decreased from 24.9+/-14.3 to 12.1+/-9.

Conclusions: PP appears to have efficacy in mitigating symptoms of IC when delivered intravesically to urothelium in multi-lamellar liposomes. In some cases, the positive effects lasted for months and continue. This pilot study showed a trend towards favorable results and warrants further clinical investigation. Additional studies are needed to determine the cellular effects of barrier restoration with PP in liposomes, ideal doses and intervals, safety, and cost-effectiveness of this therapy.

Source of Funding: None
Purpose: Endoscopic release is moderately successful for the treatment of bladder neck contracture (BNCX). In some patients, however, BNCX recurs rapidly and can be very recalcitrant to further therapy often leaving open bladder neck reconstruction as the only option to restore lower urinary tract patency. This approach is associated with a high morbidity. Recently the Lahey Clinic reported on the use of intralesional mitomycin C (MMC) injection as an adjunct to transurethral incision of bladder neck. We sought to examine our multi-institutional experience utilizing this technique and analyze the factors predicting success.

Materials and Methods: Retrospective data was collected from participating centers in the Trauma and Urologic Reconstructive Network of Surgeons (TURNS), which includes Baylor University, Loyola, Ohio State University, and the Universities of Iowa, Kansas, Minnesota, Utah, and Washington. Data collected included: operative details, concentration of MMC used, total amount injected, results of follow up cystoscopic examination, and recurrence of contracture. Inclusion criteria included all patients who had a cystoscopic examination during their follow up. Primary success was defined as a patent bladder neck on cystoscopic exam after initial treatment with MMC. Secondary success was defined as patients that had more than one bladder neck contracture release with MMC due to failure of the initial procedure, and had a patent bladder neck on cystoscopic follow up exam. Success or failure of the procedure was compared in patients who received a total dose of less than 2mg of MMC to those receiving more than 2mg of MMC as this dose represented the median dosage used. The Fisher's Exact test was used to compare categorical variables.

Results: 41 patients underwent endoscopic release of BNCX with MMC injection. The techniques used varied substantially and included, cold knife incision (n=28), Collins knife incision with electrocautery (n=6), and transurethral resection of the scarred tissue (n=7). 36 of the 41 had cystoscopic follow up and were included in the analysis. The mean age for this group was 63.53 (range 45-80). Mean follow up time with cystoscopy was 9.53 months (range 1.5-30). 26 patients were classified as having recurrent bladder neck contracture (10 patients had one prior failure, 16 patients had more than one prior failure), while 10 patients had never had a procedure for BNCX performed. 5 patients were dependent on a SPT tube and 2 on a Foley catheter pre-operatively. The mean dose of MMC injected was 2.71 mg (range 0.4-7.5) most commonly delivered in a concentration of 1 mg/mL (range 0.4-7.5). The primary success rate was 61.1% (22/36). Of 14 patients that had recurrent stricture, 12 underwent a second treatment with MMC. The mean time to retreatment of stricture recurrence with MMC was 4.51 months (range 2.3-9.6). Mean dose of mitomycin delivered for a second injection was 3.05 mg/mL (1-7.5). 54.5% (6/11) of patients in this cohort achieved patency of their bladder neck after the second treatment. The secondary success including these men was 77.8% (28/36). A total dose of greater than 2mg of MMC compared with less than 2 mg was not associated with success or failure of the procedure, (P=0.742). Number of prior bladder neck releases without MMC and technique used were also not associated with success or failure of the procedure.

Conclusions: Trans urethral Management of bladder neck contracture with intralesional injection of mitomycin C is successful in the majority of patients with only one treatment. Doses greater than 2mg of MMC are not associated with higher success than doses less than 2mg. The lack of any dose observed effect may be due to lower doses of MMC having a very good efficacy or lack of any efficacy of MMC at all and overall a very good efficacy of deep incision into the bladder neck contracture. For this reason prospective randomized controlled studies are needed and currently being pursued through our group to validate these findings.

Source of Funding: None
EXAMINING THE difference IN ERECTILE AND EjACULATORY function IN STRICTUROTOMY WITH HEINEKE-MIKULICZ REPAIR (HMR) VS. EXCISION AND PRIMARY ANASTOMOTIC (EPA) URETHROPLASTY: INITIAL RESULTS
Brian R. Winters, M.D., Bryan B. Voelzke, M.D.: Seattle, WA
(Presentation to be made by Dr. Winters)

Objective: Excision and primary urethral anastomosis (EPA) is an effective technique to definitively treat men with urethral stricture disease. Stricturotomy using a Heineke-Mikulicz repair (HMR) does not involve complete transection of the urethra, which may result in faster return of sexual function than EPA. We hypothesize that stricturotomy with HMR will have improved postoperative erectile and ejaculatory function compared to EPA in the early postoperative period (defined at 3 months).

Methods: We retrospectively reviewed all patients undergoing stricturotomy with HMR (7) and EPA urethroplasty (6), with perioperative data available, between 11/2010 and 4/2012. Variables of interest included the International Prostate Symptom Score (IPSS), the five-item Sexual Health Inventory for Men (SHIM), and the Male Sexual Health Questionnaire (MSHQ). We evaluated patients preoperatively and at 3 months after surgery.

Results: Median stricture length for EPA and HMR was 2cm and 1.75cm, respectively. Members of each group had a median of one previous intervention (dilation or urethrotomy). Statistics are reported below. All values reported as median.

<table>
<thead>
<tr>
<th>Questionnaire Data</th>
<th>Stricturotomy w/HMR (7)*</th>
<th>Change at 3 months</th>
<th>EPA (6)*</th>
<th>Change at 3 months</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td></td>
<td>Pre</td>
</tr>
<tr>
<td>IPSS</td>
<td>18</td>
<td>3</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td>IPSS QoL</td>
<td>5</td>
<td>1</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>MSHQ</td>
<td>17</td>
<td>20</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td>SHIM</td>
<td>22</td>
<td>23</td>
<td>1</td>
<td>21.5</td>
</tr>
</tbody>
</table>

*Median values

Conclusions: Patients undergoing stricturotomy with HMR may have improved erectile function over EPA patients in the early postoperative period. Ejaculatory function and urinary symptoms were improved in both groups. Limitations include small sample size and increased preoperative urinary symptoms in stricturotomy cohort.

Source of Funding: None
A 3D MAGNETICALLY CONTROLLING ENDOSCOPE SYSTEM: EXPERIMENTS ON A PHANTOM OF THE URINARY BLADDER
Chien-Chen Chang, M.D., Ching-Hsing Luo, Ph.D., Meng-Dar Shieh, Ph.D., Ming-Hung Tsai, Ph.D., Hsin-En Fang, M. Eng., Yi Zhang, M. Eng., Ming-Chang Shih, Ph.D., Cheng-Chi Tai, Ph.D.: Tainan, Taiwan
(Presentation to be made by Dr. Chang)

Purpose: Although flexible endoscope, applied onto the urinary system, were found with many advantages, long learning curves for urologists are needed. During procedure, surgeon’s body and hands were often to be kept in some certain postures in order to perform some treatments. It needs lots of skills, experiences and stamina. To overcome the above handicaps, we have been developing a 3D magnetically guiding endoscope system (3DMGES) to help urologists to handle flexible endoscope. With this system, the directions of the objective end of a flexible endoscope can be changed and fixed by the remote control of the magnetic field and the guiding stage apparatus (GSA), which is controlled by a surgeon through a control panel.

Materials and Methods: The 3D magnetically guiding endoscope system (3DMGES) consists of a magnetically guiding robot system, a magnetic flexible endoscope, a guiding stage apparatus (GSA) and a control panel. The structures in the current flexible endoscope were changed. A hollow cylindrical magnet is installed on the distal end of an endoscope. The electrical magnets in the magnetically guiding robot generate a variable magnetic field to control the deflection or tilting angle of the bending section of the endoscope. Instead of held in hand by urologists, the endoscope is fixed on GSA and controlled by joysticks and buttons on the control panel, which is controlled by surgeons to rotate and move the endoscope to and fro linearly.

Experiments & Results: To test the efficacy of the 3DMGES, a plastic phantom of the urinary bladder was prepared for testing. The phantom was made to have bladder neck of urethra, trigone, fundus, and left (right) ureteral orifices to simulate parts of a real bladder. All these features were marked in numbers. By operating the 3DMGES in the phantom, the distal end of the endoscope was moved to or close to the marks through changing the deflection or tilting angle. With the images feedback by the camera on the objective end of the scope, the check points of tests were verified. The result showed the 3DMGES, a robot-assisted endoscope system, can complete the assigned tasks. The system also provides more accurate and stable performance.

Conclusions: The 3DMGES is a technique which can compete with traditional endoscopic technique. It effectively helps a surgeon to use flexible endoscope more accurately and stably for careful and detail examination or treatment, instead of restrained by physical ability or skills.

Source of Funding: Ministry of Economic Affairs, R.O.C
PROSPECTIVE EVALUATION OF THE UTILITY OF ROUTINE POST-
OPERATIVE CYSTOGRAM AFTER TRAUMATIC BLADDER INJURY

Charles Best, M.D., Kenji Inaba*, M.D., Obi Okoye*, M.D.,
Timothy Browder*, M.D., Bernardino C. Branco*, M.D.,
Pedro G. Teixeira*, M.D., Galinos Barmparas*, M.D.,
Sravanthi Reddy*, M.D., Demetrios Demetriades*, M.D., Ph.D.:
Los Angeles, CA
(Presentation to be made by Dr. Best)

Introduction: The value of routinely testing bladder repair integrity with a cystogram prior to urinary catheter removal is unclear. The purpose of this study was to prospectively evaluate the utility of routine postoperative cystogram after traumatic bladder injury.

Methods: All patients sustaining a bladder injury requiring operative repair at two Level-I trauma centers were prospectively enrolled over a 62-month study period ending 01/2011. Injury demographics, imaging data and outcomes were extracted. All patients were evaluated with either a plain or computed tomography cystogram.

Results: 127 patients were enrolled (mean age 30.4 ± 13.5, blunt trauma 63.8%), mean ISS 17.7 ± 10.6). A total of 75 patients (59.1%) had an intraperitoneal (IP), 44 (34.6%) extraperitoneal (EP) and 8 (6.3%) combined IP/EP bladder injuries. All patients with IP and IP/EP injuries (83) underwent operative repair and a post-operative cystogram at 8.6 ± 1.8 (5 – 13) days. Sixty-nine (83.1%) IP injuries were simple (dome or body disruption/penetrating injury) while 14 (16.9%) were complex (trigone/requiring ureter implantation). There were no deaths during the follow-up period. With the exception of 1 patient (1.2%) with a complex injury requiring ureteric implantation, there were no leaks demonstrated on post-operative cystogram, and the urinary catheters were successfully removed.

Conclusions: In this prospective evaluation of the role of bladder evaluation after operative repair, routine use of follow-up cystograms for simple injuries did not impact clinical management. For complex repairs to the trigone or those requiring ureter implantation, a follow-up cystogram should be obtained prior to catheter removal.

Source of Funding: None
RECENT RESISTANCE RATE INCREASE TO CIPROFLOXACIN WARRANTS RE-EVALUATION OF EMPIRICAL TREATMENT FOR URINARY TRACT INFECTIONS
Greg Rainwater, M.D., Matthew Rainwater, M.S., Nadeem Rahmad, M.D., Thomas Ahlering, M.D., Xiang Fang, M.D.: Fresno, CA
(Presentation to be made by Dr. Rainwater)

Purpose: To investigate the antibiotics that can successfully be used for the treatment of community-acquired urinary tract infections (UTIs) as organisms become more resistant to frequently used antibiotics.

Materials and Methods: A retrospective study was conducted using a collection of urinary isolates from a community-based practice in central California. The isolates were collected from all patients who required an antimicrobial sensitivity test between January, 2011 and May, 2011. Isolates were collected with either a catheter or with a mid-stream clean catch and then cultured. An electronic database search was conducted for reference and comparison.

Results: The ciprofloxacin resistance of Escherichia coli was 40.2% (68/169); levofloxacin showed an almost identical pattern of effectiveness, with a rate of resistance of 39.6% (67/169). Amoxicillin/clavulanate showed the greatest amount of efficacy against E. coli, with only 5.3% (9/169) of the isolates being resistant. Nitrofurantoin was the next most sensitive antibiotic, with a resistance rate of 6.5% (11/169). We also observed that the rate of resistance to trimethoprim/sulfamethoxazole was 28%, (48/169) which as indicated by previous research, has actually improved over the past decade. Aminoglycosides (amikacin, tobramycin and gentamicin) continue to be cost-effective parenteral medications.

Conclusions: While the use of antibiotics has been validated in clinical practice, the overuse of certain agents has led to the increase of resistance, illustrating the importance of using evidence-based strategies to choose therapies with the greatest probability of efficacy.

Source of Funding: None
COMBINED TRANSURETHRAL CIRCUMSRIPTION AND LAPAROSCOPIC ROBOTIC TRANSABDOMINAL COMPLETION PARTIAL CYSTECTOMY IN 3 PATIENTS WITH TRANSITIONAL CARCINOMA ISOLATED TO HUTCH DIVERTICULI

Mark H. Kawachi, M.D.: Los Angeles, CA
(Presentation made by Dr. Mark H. Kawachi)

Objectives: Three patients with transitional carcinoma involving only hutch diverticuli who underwent combined transurethral circumscription of the diverticuli and concomitant laparoscopic robotic completion partial cystectomy were evaluated for quality of life and oncologic outcomes to help determine if this approach to the management of this uncommon condition is worth further investigation.

Method: Retrospective analyses of this non-randomized, small sample size cohort were analyzed.

Summary of Results: All three patients remain TCC cancer free now 37 months, 20 months, and 5 months after surgery. All patients remain continent, and while all patients experienced reduction in their post-operative bladder capacity, all patients are pleased with their outcomes. No patient has required additional intervention for urinary or quality of life issues. All patients are pleased with the outcomes. Sexual function was not affected.

Conclusion: While this is a small study, involving selected patients, bladder sparing techniques in carefully chosen patients may help some patients void procedures that may have dramatic implications in their perceived quality of life and oncologic outcomes.

Source of Funding: None