SUFU Fellows Forum
Wednesday, February 24, 2016
New Orleans, Louisiana

EDUCATION COMMITTEE CHAIR:
Craig V. Comiter, MD
1:30 p.m. – 1:35 p.m.  Welcome and Introduction

1:35 p.m. – 1:45 p.m.  Choosing a Practice Model/How to Get Started
                      Craig V. Comiter, MD

1:45 p.m. – 1:55 p.m.  Private Practice
                      Suzette E. Sutherland, MD, MS

1:55 p.m. – 2:05 p.m.  Academic Practice
                      Jennifer Anger, MD, MPH

2:05 p.m. – 2:15 p.m.  Multispecialty Clinic
                      Alvaro Lucioni, MD

2:15 p.m. – 2:30 p.m.  Setting Up Research Program
                      Toby C. Chai, MD

2:30 p.m. – 2:45 p.m.  Q&A

2:45 p.m. – 3:25 p.m.  Key Considerations for Transitioning to Practice
                      Dale Moss

3:25 p.m. – 3:35 p.m.  Break

3:35 p.m. – 5:45 p.m.  Fellow Abstract Presentations

**Group One**
*Location: Chamber I, Mayor’s Suite Level*
Moderator: Craig V. Comiter, MD
*Session Schedule located on page 3*

**Group Two**
*Location: Chamber III, Mayor’s Suite Level*
Moderator: Christopher S. Elliott, MD, PhD
*Session Schedule located on page 33*
# Breakout Group One

**Location:** Chamber I, Mayor’s Suite Level  
**Moderator:** Craig V. Comiter, MD  

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>3:35 p.m. – 3:44 p.m.</td>
<td>Sarah Adelstein, MD</td>
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<tr>
<td>3:44 p.m. – 3:53 p.m.</td>
<td>Himanshu Aggarwal, MD, MS</td>
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<td>3:53 p.m. – 4:02 p.m.</td>
<td>Oscar Suarez, MD</td>
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<td>4:02 p.m. – 4:11 p.m.</td>
<td>Paholo Barboglio Romo, MD, MPH</td>
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<td>4:11 p.m. – 4:20 p.m.</td>
<td>Elizabeth T. Brown, MD, MPH</td>
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<td>4:20 p.m. – 4:29 p.m.</td>
<td>Leah Chiles, MD</td>
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<td>4:29 p.m. – 4:38 p.m.</td>
<td>Marisa Clifton, MD</td>
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<td>4:38 p.m. – 4:47 p.m.</td>
<td>Seth Cohen, MD</td>
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<td>4:47 p.m. – 4:56 p.m.</td>
<td>Joshua Cohn, MD</td>
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<td>4:56 p.m. – 5:05 p.m.</td>
<td>Katie Cunningham, MD</td>
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<td>5:05 p.m. – 5:14 p.m.</td>
<td>Elodi Dielubanza, MD</td>
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<td>5:14 p.m. – 5:23 p.m.</td>
<td>Amy Dobberfuhl, MD</td>
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<td>5:23 p.m. – 5:32 p.m.</td>
<td>Solafa Elshatanoufy, MD</td>
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<td>5:32 p.m. – 5:41 p.m.</td>
<td>Natalie Gaines, MD</td>
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**5:41 p.m. – 5:45 p.m.**  
Wrap Up/Q & A

*The schedule for Group Two is located on page 33.*
LONG TERM OUTCOMES OF RECTOCELE REPAIR IN A TERTIARY REFERRAL SETTING
Sarah A. Adelstein, MD; Erika M. Wolff, PhD; John D. Massman III, Alvaro Lucioni, MD; Una J. Lee, MD; Blair B. Washington, MD; Fred E. Govier, MD; Kathleen C. Kobashi, MD, FACS
Section of Urology and Renal Transplantation, Virginia Mason, Seattle, Washington
(Presented by: Sarah A. Adelstein, MD)

Introduction: Accepted methods of rectocele repair in the post mesh era include native tissue repair (NTR) and repair with biograft augmentation. Literature on long term durability, particularly with biograft augmentation, is limited. We report our long term outcomes for both approaches at a tertiary referral center.

Methods: We performed a cross-sectional analysis on a prospectively collected database on patients who had rectocele repair from 1999-2007 with either solvent-dehydrated cadaveric fascia lata (Tutoplast®, Coloplast – Denmark) augmentation (CFL) or NTR, and answered validated follow up questionnaires of patient-reported outcomes at > 8 years. The primary outcome was pelvic floor symptom bother measured by the Pelvic Floor Distress Inventory (PFDI-20). PFDI sub-scales, Patient Global Impression of Improvement (PGI-I, scores 1-7, 1 = most improved), an 11-point satisfaction Likert scale (10 = most satisfied), and subjective report of further prolapse treatment were evaluated. Finally, rate of repeat rectocele repair as captured in the database was reported.

Results: Questionnaire response rate was 31% (142/455). Of this cohort, 76 rectocele repairs were performed with CFL, and 66 with NTR. Mean follow up was 11.2 ± 1.9 years and 9.9 ± 1.4 years, respectively. Mean patient ages were 60 ± 11 years in both groups. Questionnaire results are listed in figure 1. Revision rectocele surgery was performed in 4.2% (19/455) of the entire cohort. 17% (11/66) and 15% (8/55) of the CFL and NTR groups with questionnaire follow-up subjectively reported having any further treatment for prolapse.

Conclusion: This cohort of patients reported low symptom bother at >10 years after rectocele repair with CFL graft or NTR techniques. Subjective and objective measures of treatment failure were low. Solvent-dehydrated CFL is a biologic graft option for durable reconstruction in those patients who could potentially benefit from augmentation of inherently weakened pelvic floor tissue without the risks of synthetic mesh. Future randomized investigation should further explore durability patient-reported outcomes of this technique compared to native tissue repair.
Sarah A. Adelstein, MD

**Birthplace:** Fairfax, Virginia

**Medical School:** New York University

**Residency:** New York University

**Fellowship:** Virginia Mason Medical Center

**Plans after Fellowship:** Unknown
AN OFFICE GUIDE TO OBTAINING URODYNAMICS (UDS) IN WOMEN WITH MULTIPLE SCLEROSIS (MS)
Himanshu Aggarwal, MD, MS; Catherine Howard, BS; Gary Lemack, MD
(Presented by: Himanshu Aggarwal, MD, MS)

Introduction: Bladder dysfunction is a common manifestation of MS and can significantly affect quality of life. UDS are often performed to help guide therapy as a baseline in MS patients. The purpose of the current study is to develop a clinical guide to selectively obtain UDS in female MS patients.

Methods: Utilizing an IRB−approved neurogenic bladder database of patients seen in a specialty clinic from 2001−2013, we correlated the demographic and UDS findings in women with MS. Specifically; we identified various clinically relevant high risk parameters to determine which women were more likely to have pathological UDS findings.

Results: Of the 843 patients in our database, 136 MS patients had baseline UDS and UDI−6 scores. On univariate analysis, patients with age > 50 years, who had failed anticholinergics or who reported UDI−6 score of 2−3 on question 1 had significantly higher chance of having a small bladder capacity (< 200 ml) on UDS while on multivariate analysis age > 50 years was the only significant predictor of small bladder capacity (Odds ratio 1.36 CI: 0.57, 3.24, P= 0.0382). Similarly patients with PVR > 100 ml had significantly higher odds of having large bladder capacity (> 350 ml) (Odds ratio 5.04, CI= 2.02, 12.56, P=0.0002). Prior anticholinergic use, primary progressive MS (PPMS)/Secondary progressive MS (SSMS) status, being wheel chair bound, > 5 years of duration of MS and a response score of > 2 on UDI−6 question 1 were each associated with DO on univariate analysis. Only age > 50 years was a predictor of DO incontinence on both univariate and multivariate analysis (Odds ratio 4.81 CI: 1.47, 15.75, p=0.0095).

PVR > 100 ml was weakly associated with diminished compliance on both univariate and multivariate analysis (Odds ratio 3.43 CI: 1.02, 11.56, P 0.046). Patients with PPMS/SSMS were more likely to have higher PdetQmax during voiding (Odds ratio 3.11 CI: 1.04, 9.30, P 0.0425).

PVR > 100 ml and a response of > 2 on UDI−6 q number 5 were significantly associated with voiding dysfunction (DESD + Valsalva voiding) on univariate analysis while multivariate analysis revealed only PVR > 100 ml to be the significant predictor (Odds ratio 8.51 CI: 3.35, 21.62, P =0.0001).

Conclusion: Women under the age of 50 years with relapsing remitting MS and PVR < 100 ml do not require UDS as part of their initial assessment. Older patients with more advanced MS and prior anticholinergic are more likely to have urodynamic findings that may alter management.
Himanshu Aggarwal, MD, MS

Birthplace: India

Medical School: Kasturba Medical College

Residency: Albany Medical Center

Fellowship: University of Texas Southwestern Medical Center – Dallas, Texas

Plans after Fellowship: Unknown
OUTCOMES FOLLOWING TRANSOBTURATOR SLING PLACEMENT FOR MEN WITH SEVERE URINARY INCONTINENCE
Oscar A. Suarez, MD; Jack M. Zuckerman, MD; Kurt A. McCammon, MD
(Presented by: Oscar A. Suarez, MD)

Introduction: To review the outcomes following transobturator sling placement for men with severe urinary incontinence.

Methods: We performed a retrospective review of men who underwent AdVance sling placement for SUI at our institution from 2006 to 2013. Men with preoperative leakage equal or greater than 4 pads a day were studied. Those who had a history of pelvic radiation therapy were excluded. Patients were grouped as Cured (0 to 1 pad daily after surgery), improved (50 % or more reduction in daily pads) and failed (less than 50 % reduction in daily pads). Data was compared and statistically evaluated among all groups at 3-months follow up. Patients who were cured at 3 months were followed at 24 months and analyzed.

Results: Fifty-nine patients met our inclusion criteria. Eighty eight % had a history of radical prostatectomy. At 3-months follow up 42 (71 %) patients were cured, 11 (18.6 %) patients improved and 6 (10 %) patients failed. When comparing body mass index (BMI) in cured plus improved patients (28.2) vs failed patients (31.9) statistical significance was reached (T test p= 0.02). Of those 42 cured patients only 24 had a 24-months follow up, of which 19 (45%)remained cured. No statistical significance was proven when comparing data from patients who remained cured at 24 months vs those who were no longer cured at the same time frame. The percentage of men cured at 3-, 12- and 24- months were 71 %, 69 %, 61 % respectively.

Conclusion: The AdVance transobturator male sling is another reasonable option for patients with severe SUI with an acceptable cure rate at 24-months follow up. Patients with a BMI greater than 30 tend to have a higher risk for failure.

Table 1)

<table>
<thead>
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<th>Cured</th>
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<th>Failed</th>
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<td>65.7</td>
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<td>BMI</td>
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<td>31.9</td>
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</tr>
<tr>
<td>Pads</td>
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<td>0.57</td>
</tr>
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<td>1</td>
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<td>Previous procedure</td>
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<td>3</td>
<td>1</td>
<td>0.3</td>
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<td>DO</td>
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<td>3</td>
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Oscar A. Suarez, MD

**Birthplace:** Villahermosa, Tabasco, Mexico

**Medical School:** Universidad de Monterrey

**Residency:** Universidad Autónoma de Nuevo León

**Fellowship:** Eastern Virginia Medical School

**Plans after Fellowship:** Academic and Private Practice – Mexico
MAXIMAL DIVERSION: OUTCOMES FOR CONCOMITANT UROSTOMY AND ENTEROSTOMY PROCEDURES FOR BENIGN CONDITIONS

Paholo Barboglio Romo, MD, MPH; Yahir Santiago-Lastra, MD; Elizabeth Andraska, MD; Bahaa S. Malaeb, MD; Anne P. Cameron, MD; J. Quentin Clemens, MD; John T. Stoffel, MD
Ann Arbor, Michigan
(Present by: Paholo Barboglio Romo, MD, MPH)

Introduction: Some patients with end stage urinary symptoms from neurogenic bladder or radiation cystitis have concomitant refractory bowel symptoms. Our aim was to define outcomes and morbidity for patients undergoing concomitant genitourinary (GU) and a gastrointestinal (GI) surgical diversion for benign conditions.

Methods: We performed an IRB retrospective review of all urinary diversions performed from 2007-2014 at a tertiary referral center. Subjects with concomitant GU and GI diversions were identified. Those with a cancer diagnosis were excluded. The Services of Neuro/Reconstructive Urology and Colorectal collaborated peri-operatively and during surgery. Indications for double diversion, demographics, operative, and post op data were extracted. Complications were classified by Clavien-Dindo (CD) and tracked for 90 days after surgery. Follow up was determined by last visit and survival through query of the Federal Social Security Death Master file.

Results: Urinary diversion was performed in 141 subjects and 16 of these were identified with a dual urostomy/enterostomy diversion. There were 63% with refractory neurologic condition and 25% had pelvic radiation therapy (RT). The most common urinary symptoms were urinary incontinence (50%) and recto-urinary fistula (31%); GI symptoms were fecal incontinence (56%) and constipation in (44%). Urostomy was created utilizing sigmoid colon (11/16), transverse colon (2/16) and ileum (3/16). Return of bowel function was less than 7 days in 69%, median length of stay was nine (7-15, IQ[25-75%]) with 38% staying less than 7 days and 63% staying less than 10 days. High grade complications (CD III) occurred in 6/16 (38%) but no bowel complications occurred during follow up. Univariate analysis suggested an association trend (p=0.074) when assessing high grade complications and surgeries performed <2010, RT, and BMI <18.5 or >30. There were three deaths reported up to December 2014 which occurred within a mean of 364 (SD/+232) days from surgery.

Conclusion: Dual diversion can be a morbid procedure with up to 38% high grade complications during the first 90 days post-op. Our limited series suggest that quick return of bowel function, lack of bowel complications, one year survival of 94% (or overall survival 81%), in addition to resolution of urinary and bowel symptom are advantages form this combined procedure when addressing incontinence or fistula in selected patients with significant neurologic impairment or severe pelvic radiation disease.

Funding: None

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Table. Clavien-Dindo (CD) Complications at 30 and 90 days

Clavien-Dindo Scale Adapted from the National Database of Neurosurgical Outcomes. C.D: Clavien-Dindo. D Comp: CD-30 D Comp: 30 day post-op complications; CD-90 D Comp: 90 day post-op complications.
Paholo Barboglio Romo, MD, MPH

Birthplace: Hermosillo, Mexico

Medical School: Anahuac University, Mexico City

Residency: Dartmouth College

Fellowship: University of Michigan

Plans after Fellowship: Academic Job
TEMPORAL SUMMATION AS AN OBJECTIVE MARKER FOR OVERACTIVE BLADDER IN WOMEN
Elizabeth T. Brown, MD, MPH; Stephen Mock, MD; Joshua A. Cohn, MD; Melissa Kaufman, MD, PhD; Roger Dmochowski, MD, MMHC, FACS; Stephen Bruehl, PhD; W. Stuart Reynolds, MD, MPH
Vanderbilt University Medical Center, Nashville, Tennessee
(Presented by: Elizabeth Brown, MD, MPH)

Introduction: Overactive bladder (OAB) pathophysiology may be related to increased afferent nerve activity and altered central nervous system processing of excitatory signals. Central sensitization, which is an induced state of spinal hypersensitivity and a well-recognized mechanism of centrally amplified pain perception underlying many chronic pain conditions, may play a role in the pathophysiology of OAB and can be indexed by measuring temporal summation (TS) or “wind-up” (i.e. an increased neuronal response to a given constant stimulus) during quantitative sensory testing (QST). The study aim was to compare TS of evoked thermal pain stimuli in women with and without OAB.

Methods: We recruited women with medication-refractory OAB who were electing either sacral neuromodulation or onabotulinumtoxin A to undergo QST to the forearm. A Medoc Thermal Sensory Analyzer was used to apply a controlled heat stimulus to the forearm using a Peltier thermistor probe. Wind-up trials were performed using TPS-CoVASv3.19, MedocInc. software that administered a standardized oscillating thermal stimulation at a frequency of 0.5Hz, a frequency known to elicit C-fiber mediated wind-up in the dorsal horn of the spinal cord. During TS trials, a sequence of 10 heat pulses (0.5s duration) was administered from 40-49 degrees Celsius. At the peak of each pulse, subjects rated their pain intensity on a 0–100 scale (0=No Pain, 100=Worst Possible Pain). A standardized slope was calculated for each subject to reflect the degree of TS. Analyses compared study subjects with healthy controls using t-test statistics.

Results: We included 32 subjects, 17 women with OAB [mean age 58.5 years (range 39-71)] and 15 controls [mean age 34 years (range 22-55)]. The calculated average slope in controls for the TS trials was 0.75 (standard deviation = 0.32) compared to 2.23 (standard deviation = 1.28) for women with OAB (p<0.001), suggesting that women with OAB have higher degrees of TS.

Conclusion: In this pilot study, women with OAB demonstrated heightened TS on thermal QST compared to controls, suggesting that central sensitization may contribute to OAB pathophysiology in some women. Further study will elucidate the use of TS as an objective marker for OAB treatment outcomes.
Elizabeth T. Brown, MD, MPH

Birthplace: Daytona Beach, Florida

Medical School: West Virginia University

Residency: LSU/Ochsner

Fellowship: Vanderbilt University Medical Center

Plans after Fellowship: Georgetown University
FEMALE URETHRAL DIVERTICULA: CORRELATION OF MRI FINDINGS WITH PRE-OPERATIVE SIGNS AND SYMPTOMS OR POST-OPERATIVE OUTCOMES?
Leah Chiles, MD; Nima Baradaran, MD; Drew Freilich, MD; Ross Rames, MD; Eric Rovner, MD
Department of Urology, Medical University of South Carolina, Charleston, South Carolina
(Presented by: Leah Chiles, MD)

Introduction: Pelvic MRI (pMRI) provides excellent anatomic delineation of urethral diverticula (UD) and is routinely utilized for preoperative planning and patient counselling. Whether preoperative MRI findings have any predictive or prognostic value in relation to the severity of the condition or postoperative success is the objective of this study.

Methods: After IRB approval, records of adult females who underwent transvaginal excision of UD (TVUD) at our institution between 2004 and 2014 were retrospectively reviewed. Clinical characteristics including lower urinary tract symptoms, incontinence status, dyspareunia, postvoid dribbling, and urinary tract infections were reviewed and correlated with pMRI findings before and after repair. MRI characteristics included UD configuration (simple, saddle, or circumferential), size, location (proximal, mid, or distal urethra), and number of UD. An autologous fascia pubovaginal sling was placed at the time of UD excision if stress urinary incontinence was present preoperatively.

Results: 58 patients underwent TVUD of which 49 patients had available data on preoperative pMRI. Three patients had a previous TVUD at other institutions. UD was located in the proximal urethra in 36%, midurethral in 43%, and distal urethra in 6%. Four (8%) patients had panurethral involvement. Median (range) size of the UD on largest dimension was 2.5cm (0.5-6.7cm). UD configuration was simple in 37%, saddle bag in 37%, and circumferential in 24% of cases. Presence of distal and pan-urethral UD on pMRI was significantly associated with presence of vaginal mass on physical examination (p=0.04). Larger UD size (>3 cm) was associated with a statistically significant higher intraoperative blood loss (450cc vs. 200cc, p<0.001) as was placement of a concomitant sling at the time of TVUD (275cc vs. 200cc, p=0.03). Neither configuration nor location of UD was statistically significantly predictive of symptom severity or blood loss. Complete radiographic resolution of UD was achieved postoperatively in 65% of patients however only 3 (5%) patients required subsequent surgical intervention for persistent UD. There was no correlation with preoperative pMRI and resolution of UD on postoperative imaging.

Conclusion: Although pMRI provides valuable anatomical information for surgical planning, preoperative pMRI findings are not predictive for patients’ presenting symptomatology, signs, or postoperative outcomes.
Leah Chiles, MD

**Birthplace:** Shreveport, Louisiana

**Medical School:** LSU School of Medicine Shreveport

**Residency:** Scott & White Memorial Hospital

**Fellowship:** Medical University of South Carolina

**Plans after Fellowship:** Private practice in Shreveport, LA
Introduction: The efficacy of percutaneous tibial nerve stimulation (PTNS) for overactive bladder (OAB) has been well-described. The American Urologic Association OAB guidelines offer PTNS as a third-line therapy for OAB. As PTNS is an effective OAB treatment, it may be reasonable to consider this therapy as first- or second-line therapy if the risk of adverse events is comparable or less than those of OAB medications. Therefore, we performed a systematic review and meta-analysis of the literature that compared PTNS to anticholinergics to determine the rate of adverse events between these two treatments.

Methods: A literature search was performed in PubMed, EMBASE and CENTRAL to identify randomized controlled trials (RCT), prospective studies, and retrospective reviews that evaluated PTNS compared to anticholinergics. Studies without description of adverse events were excluded. Statistical analysis was performed with RevMan 5.3.5. No funding was used.

Results: 5 RCTs comparing the efficacy of PTNS versus an anticholinergic medication treatment arm with description of adverse events were included. No serious adverse events were reported. Two RCTs compared PTNS to an anticholinergic alone – the PTNS arm had a 16.4%(11/67) rate of adverse events while the anticholinergic arm had a rate of 23.9%(16/67). One crossover RCT with a 3 month washout period showed no adverse events during PTNS treatment and an adverse event rate of 5%(2/40) during anticholinergic treatment. One RCT comparing PTNS to PTNS+oxybutynin found an adverse event rate of 9.5%(2/21) in the PTNS only arm and an adverse event rate of 36.4%(8/22) in the PTNS+oxybutynin arm. The last RCT compared PTNS+tolterodine to tolterodine and found an adverse event rate of 25%(5/20) in the PTNS+tolterodine group while the tolterodine alone group had a rate of 30%(6/20). When these studies were weighted, there was a trend toward PTNS having less adverse events compared to anticholinergics (OR 0.52;95%CI 0.27,1.02) as seen in Figure 1.

Conclusion: There is a trend toward fewer adverse events in OAB patients with PTNS therapy compared to anticholinergic treatment. Based on these results PTNS may be considered as first- or second-line therapy in patients with OAB.
Marisa M. Clifton, MD

Birthplace: Billings, Montana

Medical School: Johns Hopkins School of Medicine

Residency: Mayo Clinic, Rochester, Minnesota – Department of Urology

Fellowship: FPMRS/Cleveland Clinic

Plans after Fellowship: Geisinger Medical Center, Danville, Pennsylvania
Introduction: There is currently a national shortage of indigo carmine. In efforts to identify the most efficient aide for visualizing ureteral efflux intra-operatively, we wanted to investigate the time to excretion of two commonly used agents: 10% sodium fluorescein and phenazopyridine.

Methods: We retrospectively analyzed prospectively collected data from a cohort of women who underwent pelvic reconstructive surgery in 2015 and were given aides to visually identify ureteral excretion intraoperatively. Per provider preference patterns, a number of patients were administered 200 mg phenazopyridine orally with a sip of water, 1 hour prior to start of operative time. Other patients were given 0.5 mL of 10% sodium fluorescein intravenously in the operating room. In all cases, times were measured between the administration of the agent and the visualization of green urine (sodium fluorescein) or orange urine (phenazopyridine) in an indwelling catheter, placed at the start of the case. All women had normal serum creatinine and estimated glomerular filtration rates at time of surgery. Differences between the groups’ excretion times were compared with a Wilcoxon rank-sum test.

Results: 7 women received the phenazopyridine and 5 women received sodium fluorescein. The phenazopyridine group’s median age was 54 (range, 39-82), median BMI 27 (20-39), and median ASA class was 2 (1-3). The sodium fluorescein group’s median age was 55 (range, 40-75), median BMI 26 (21-32), and median ASA class 2 (2-3). Mean excretion times were significantly longer for the phenazopyridine group compared to the sodium fluorescein group (5.1 minutes versus 81.9 minutes, p=0.0057). See attached figure with a Dot Plot summarizing excretion times.

Conclusion: 10% sodium fluorescein is excreted significantly faster in the operating room, when compared to phenazopyridine. Depending upon cost of these agents at one’s institution, in addition to the desire to decrease operative times, this may impact practice patterns and selection of agent.
Seth A. Cohen, MD

**Birthplace:** Shreveport, Louisiana

**Medical School:** Feinberg School of Medicine, Northwestern University

**Residency:** UC San Diego

**Fellowship:** UCLA

**Plans after Fellowship:** Unknown
THE PREVALENCE OF UNDERACTIVE BLADDER AMONG U.S. FEMALE MEDICARE BENEFICIARIES
Joshua Cohn, MD; Stephen Mock, MD; Elizabeth Timbrook Brown, MD, MPH; Shenghua Ni, MD; Melissa Kaufman, MD, PhD; Roger Dmochowski, MD, MMHC, FACS; W. Stuart Reynolds, MD, MPH
(Presented by: Joshua Cohn, MD)

Introduction: Patients with underactive bladder (UAB) experience symptoms or clinical manifestations of incomplete bladder emptying not primarily attributable to bladder outlet obstruction. UAB is an evolving clinical concept with unknown prevalence. We aimed to determine the prevalence of UAB among female Medicare beneficiaries.

Methods: Using a 5% sample of U.S. Medicare utilization records, we identified women with a diagnosis or clinical manifestation of urinary retention. Three categories were established among women with retention: 1) no catheter placement, 2) 1 or more catheterizations within 30 days of retention diagnosis but none beyond 1 month, and 3) multiple catheterizations separated by greater than 30 days. A fourth category of age-matched controls was also established. Clinical and demographic data were collected for each patient.

Results: Mean age of the cohort was 79 ± 8 years. 15,360 patients had a diagnosis and/or manifestation of retention, which extrapolates to 1.5% of all U.S. female Medicare beneficiaries. 83%, 10% and 7% of these women were in categories 1, 2 and 3, respectively. Compared with controls, patients with retention were more likely to suffer from every measured comorbid condition. On multivariable analysis, age (OR 1.02, 95% CI 1.01-1.03), diabetes (OR 1.18, 95% CI 1.01-1.37), UTI (OR 1.89, 95% CI 1.64-2.19), neurologic condition (OR 2.85, 95% CI 2.43-3.34), and pelvic organ prolapse (POP) (OR 2.28, 95% CI 1.94-2.68) were associated with increased odds of catheterization. UTI (OR 1.93, 95% CI 1.94-2.31), neurologic condition (OR 4.01, 95% CI 3.12-5.16), and POP (OR 1.63, 95% CI 1.32-2.02) were associated with increased odds of chronic versus short-term catheterization (i.e. category 3 versus 2).

Conclusion: Urinary retention impacts approximately 1.5% of all women on Medicare, with 17% undergoing short-term or chronic catheterization. These data underscore the importance from a public health and financial perspective in improved identification and management of UAB.
Joshua Cohn, MD

Birthplace: Philadelphia, Pennsylvania

Medical School: University of Michigan Medical School

Residency: University of Chicago

Fellowship: Vanderbilt University Medical Center

Plans after Fellowship: Unknown
SACRAL NEUROMODULATION FOR THE TREATMENT OF RETENTION IN PARTIAL SACRECTOMY PATIENTS  
(Presented by: Katie Cunningham, MD)

**Introduction:** Sacral chordoma is a rare malignant tumor arising from remnants of the notochord. Due to its propensity for recurrence, the treatment of choice is surgical resection. Orthopedic and Neurosurgical literature describe bladder dysfunction as prevalent in these patients, specifically urinary incontinence and lack of sensory awareness of the bladder, however urologic literature is lacking in the exact nature of this dysfunction. Thus far, Sacral Nerve Stimulation (SNS) has not been described as a treatment option for these patients. SNS has been FDA approved for treatment of non-obstructive urinary retention since 1999. It has yet to be described as an effective treatment option in patients who have undergone sacral resection and suffer from prolonged post-operative non-obstructive urinary retention.

**Methods:** We describe a 36 year-old female who underwent mid sacral resection (S3 and below) for a sacrococcygeal chordoma. She suffered from post-operative urinary incontinence and incomplete emptying requiring intermittent catheterization. Urodynamic evaluation showed detrusor hyporeflexia with non-obstructive urinary retention.

**Results:** Operative reports may not contain sufficient detail to confirm whether one or both S3 nerve roots are intact. Thus, it is mandatory to perform a bilateral nerve evaluation to verify integrity of the S3 nerve roots in this cohort of patients. This can be technically difficult, as some of the usual landmarks are surgically absent. Our patient underwent Interstim® System placement resulting in return of spontaneous voiding and resolution of her urinary retention.

**Conclusion:** We are the first to report the successful use of SNS to treat non-obstructive urinary retention after partial sacral resection. Sacral neuromodulation is technically feasible and effective after partial sacral resection. Additional patients and long term follow-up will be required to support consistent usage of it in this patient population.
Katie Cunningham, MD

Birthplace: Oklahoma City, Oklahoma

Medical School: University of Oklahoma School of Medicine

Residency: University of Texas at Houston

Fellowship: MD Anderson Cancer Center

Plans after Fellowship: Academics, Oklahoma City, Oklahoma
OUTCOMES OF BILATERAL LEAD PLACEMENT FOR STAGE 1 SACRAL NEUROMODULATION TRIAL
(Presented by: Elodi Dielubanza, MD)

Introduction: Many patients considering sacral neuromodulation (SNM) for urinary symptoms have exhausted several treatment modalities. As such, maximizing efficacy during the Stage1 SNM trial is a high priority for providers. Our practice has been to utilize bilateral lead placement for select patients who have had limited or no improvement with prior therapies. However, it is unclear who should be considered for bilateral lead placement and who benefits most from this practice. Herein, we review our experience with bilateral lead placement for stage 1 SNM trial.

Methods: A retrospective review of demographic and clinical data was performed for all patients who underwent bilateral lead placement for Stage 1 SNM trial January 2010 to December 2014. Statistical analysis included T-test, Mann-Whitney U, Chi-Square or Fisher as appropriate and logistic regression analysis to determine factors predictive of 1) progression to Stage 2 implantation procedure and 2) removal after stage 2 for lack of efficacy.

Results: Bilateral leads were placed for 81 patients for stage 1 SNM trial. Patients were predominantly female (81%) with mean age 46.55 and mean BMI 28.7. Median follow up was 2.8 years.

The primary indications were urgency incontinence (45.7%), non-obstructive urinary retention (35.8%), urgency/frequency (14.8%), and lower urinary tract symptoms with pelvic pain (3.7%). Multiple indications were present in 42 patients (53.1%). Sixty-Three (77.7%) patients had >50% improvement in primary symptoms and proceeded to stage 2, but only 26 had bilateral leads implanted at stage 2. At last follow up 22 patients had ≥1 revision and 11 had explantation for lack of efficacy. On multivariate analysis female gender, primary indication of urgency incontinence and history of fecal incontinence were predictive of progression to stage 2, while primary indication of urgency/frequency was negatively predictive (p<0.02). Primary lower urinary tract symptoms pelvic pain, other chronic pain conditions, irritable bowel disease and male gender were predictive of removal after stage 2 on multivariate analysis (p>0.05)

Conclusion: Bilateral lead placement at stage 1 may be a useful tool for maximizing the likelihood of Stage 1SNM trial success in well-selected, complex patients. However, prospective study is needed to better assess the factors that would predict benefit with this approach.
Elodi Dielubanza, MD

Birthplace: Los Angeles, California

Medical School: David Geffen School of Medicine at UCLA

Residency: Northwestern University

Fellowship: Cleveland Clinic

Plans after Fellowship: Unknown
Introduction: Detrusor underactivity (DU) is gaining recognition as an important cause of urinary retention. Maximum isometric detrusor contraction pressure (Piso) obtained using the mechanical stop test during voiding urodynamics is a useful way to measure detrusor contractile reserve strength (Pres = Piso – Pdet@Qmax). We report our single surgeon experience in men with urodynamically proven bladder outlet obstruction that subsequently underwent transurethral resection of the prostate (TURP).

Methods: We identified 90 men who underwent TURP at our institution from September 2014 to August 2015 and retrospectively reviewed the records of 43 men with preoperative urodynamic evaluation. Patient demographics, free uroflow, urodynamic tracing and postoperative information were collected. Piso was obtained in all men during the voiding phase of urodynamics. Primary outcome was postoperative voiding function: spontaneous void versus indwelling or intermittent catheterization.

Results: All 43 men (mean age 68 years) had urodynamic tracing and follow-up data (mean 77 days) available for statistical analysis. DU was present in 13 men (30%) with a mean urodynamic: BCI 78 (IQR 70–95) and BOOI 61 (IQR 48–76). Preoperative spontaneous voiding was present in 27 men (63%) with a mean free uroflow: Qmax 8.8 mL/s (IQR 6.0–11.0), voided volume 149 mL (IQR 50–303), PVR 139 mL (IQR 0–175) and a mean urodynamic: Pdet@Qmax 102 cmH2O (IQR 75–107), Qmax 6.2 mL/s (IQR 4.0–7.5), Piso 124 cmH2O (IQR 86–140). In the remaining 16 men who were catheter dependent, all were able to void a small amount (mean 102 mL, IQR 19–162) at time of urodynamics with a mean: Pdet@Qmax 89 cmH2O (IQR 68–105), Qmax 3.6 mL/s (IQR 1.0–4.3), Piso 99 cmH2O (IQR 69–121). Following TURP 67% of men voided spontaneously at discharge and 95% at most recent follow-up. On receiver operator analysis (see Figure), detrusor contractile reserve (Pres) was a significant predictor of immediate spontaneous void after TURP (AUC=0.681, p=0.035).

Conclusion: In men considering TURP, an elevated isometric detrusor reserve (Pres = Piso – Pdet@Qmax) appears to be associated with immediate postoperative spontaneous voiding and should be incorporated into the operative decision algorithm.
Amy Dobberfuhl, MD

Birthplace: North Carolina

Medical School: University of North Carolina

Residency: Albany Medical College

Fellowship: Stanford University School of Medicine

Plans after Fellowship: Academic Appointment – Basic Science, Clinical and Translational Research
OUTCOMES OF HIGH UTEROSACRAL HYSTEROPEXY IN THE MANAGEMENT OF PELVIC ORGAN PROLAPSE
(Presented by: Solafa Elshatanoufy, MD, PharmD)

Introduction: Pelvic Organ Prolapse (POP) is a common medical condition. The U.S National Hospital Discharge Survey indicates that 200,000 women annually will have surgical correction for POP (1). Seven to fourteen percent of benign hysterectomies are performed for POP in the U.S. The benefit of hysterectomy in the treatment of POP is currently in doubt. Sacrospinous hysteropexy is a well-documented transvaginal technique for uterine preservation, however alteration in the vaginal axis may predispose to secondary prolapse of the anterior vaginal wall (2). Alternatively, high uterosacral suspension is described to restore the natural vaginal axis (3).

Objective: This study aims to compare the surgical outcomes of traditional vaginal hysterectomies with high uterosacral suspension (HHU) compared to high uterosacral hysteropexy (HUH).

Method: A retrospective chart review was performed after IRB approval. Primary Outcomes were Peri-operative POP Q Stage at 6 months followup, urinary incontinence measures via the Michigan Incontinence Symptom Index (M-ISI). Urinary Quality of Life Measures (QOL) were obtained from the American Urological Association Symptom Score (AUAss). Patient demographics including age, incontinence status, prior prolapse repair, BMI.

Results: Twenty patients were identified from 2013-2015 with prolapse stages ranging from II to IV. Eleven patients underwent HHU with a mean age of 59. Nine patients had HUH with a mean age of 68. Both cohorts underwent anterior and posterior colporrhaphy, perineorrhaphy and mid urethral slings as needed. The baseline AUAss were similar between groups. Sixty six percent and fifty five percent achieved post-operative POP Q stage of 0-1 in the HUH and HHU groups respectively. There was no difference in pre-operative symptoms score between groups. Each group had a significant reduction in symptom scores post-operatively. Post-operative symptom score reduction was similar between groups. The average blood loss in the HUH group was lower (p< 0.05).

Conclusion: HUH provides similar success for prolapse reduction and urinary symptom scores, while preserving the vaginal axis with a decrease in blood loss. HUH should be offered as a treatment option for POP. This study is limited by its retrospective design, small sample size and short term follow-up.
Solafa Elshatanoufy, MD

**Birthplace:** Cairo, Egypt

**Medical School:** Ross University, School of Medicine

**Residency:** Wayne State University/Detroit Medical Center

**Fellowship:** Henry Ford Health Systems

**Plans after Fellowship:** Unknown
RADIOGRAPHIC MISDIAGNOSES AFTER PERIURETHRAL BULKING AGENTS
Natalie Gaines, MD; Priyanka Gupta, MD; Iyad S. Khourdaji, MD; Keval Parikh; Kim A. Killinger, RN, MSN; Michael Ehler, MD; Larry T. Sirls, MD
1Beaumont Health, Royal Oak, Michigan; 2Oakland University William Beaumont School of Medicine, Rochester, Michigan; 3Metro Urology, Minneapolis, Minnesota
(Presented by: Natalie Gaines, MD)

Introduction: Injectable urethral bulking agents are utilized in managing stress urinary incontinence (SUI). Urological or other symptoms may prompt pelvic imaging at a later date. Radiographic findings pertaining to these injectables may be incorrectly interpreted leading to unnecessary follow-up imaging, urologic consultation or even procedures.

Methods: We identified patients that underwent periurethral injection for SUI at our institution between the years 2005 to 2015. Patient charts were reviewed for any pelvic imaging with plain X-ray (XR), computed tomography (CT), magnetic resonance imaging (MRI) or ultrasound (US) performed after their injection therapy. Radiologic reports were reviewed for any description that either alluded to the injection therapy or misdiagnosed the injections.

Results: 541 patients were identified that underwent a total of 766 injection sessions. Injections were performed with either calcium hydroxyapatite (Coaptite) or pyrolytic carbon-coated beads (Durasphere). 28 were excluded due to incorrect coding or incomplete information. 223/513 (43%) patients had no additional imaging after their injections. 214/513 (42%) patients had additional imaging but injectables were not mentioned in the reports. 76/513 (15%) patients had 109 abdominal or pelvic imaging studies, which commented on findings associated with injection therapy: 83 CT images, 7 MRI images, 14 X-ray images, and 5 ultrasound images were reviewed. In 43/109 (39%) images radiology correctly interpreted findings as associated with periurethral injection therapy. 66/109 (61%) incorrect diagnoses based on imaging included: bladder calculus (18), calcifications near urethra (23), urethral diverticulum (8), hypodense areas suspicious for abscess or soft tissue density (7), unknown nodular densities in pelvis (3), mass near bladder concerning for tumor (3), cystic structure near the urethra that may be a dilated periurethral gland (1), calcification in urethra that may be chronic inflammation (1), hypodense cystic area (1), bladder diverticulum (1).

Conclusion: Periurethral bulking agent injections are commonly misdiagnosed by radiologists as bladder calculi, urethral diverticula with or without stones, or other pelvic pathology. This occurred across different imaging modalities and reflects the lack of familiarization by radiologists with the radiologic characteristics of periurethral bulking agents.

Funding: None
Natalie Gaines, MD

**Birthplace:** Beaumont, Texas

**Medical School:** Texas Tech University Health Sciences Center School of Medicine

**Residency:** Texas Tech University Health Sciences Center Department of Urology

**Fellowship:** Beaumont Health System

**Plans after Fellowship:** Texas
Breakout Group Two
Location: Chamber III, Mayor’s Suite Level
Moderator: Christopher S. Elliott, MD PhD

3:35 p.m. – 3:44 p.m.  Diane Glass, MD, PhD
3:44 p.m. – 3:53 p.m.  Kevin Gioia, MD
3:53 p.m. – 4:02 p.m.  Priyanka Gupta, MD
4:02 p.m. – 4:11 p.m.  Meghan Griffin, DO
4:11 p.m. – 4:20 p.m.  Catherine Harris, MD
4:20 p.m. – 4:29 p.m.  Evgeniy Kreydin, MD
4:29 p.m. – 4:38 p.m.  Kelly McAlvany, DO
4:38 p.m. – 4:47 p.m.  Henry Okafor, MD
4:47 p.m. – 4:56 p.m.  Javier Pizarro-Berdichevsky, MD
4:56 p.m. – 5:05 p.m.  Yahir Santiago-Lastra, MD
5:05 p.m. – 5:14 p.m.  Kirin Syed, DO
5:14 p.m. – 5:23 p.m.  Maria Voznesensky, MD
5:23 p.m. – 5:32 p.m.  Steven Weissbart, MD
5:32 p.m. – 5:45 p.m.  Wrap Up/Q & A

The schedule for Group One is located on page 3.
Introduction: Preoperative urodynamic studies (UDS) are frequently performed before pelvic organ prolapse (POP) surgery to assess urethral and bladder function. The primary goal of this study was to look at how preoperative UDS are utilized in the preoperative evaluation of POP regardless of indication for preforming them.

Methods: A retrospective chart review of patients that underwent POP surgery (stage 2-4) by 1 of 4 board-certified specialists in Female Pelvic Medicine and Reconstructive Surgery between 6/2010 and 2/2015, was performed. Subjects were identified by review of the electronic medical record CPT 4 codes for POP surgery. Charts were reviewed to identify the indication(s) for ordering UDS. Video UDS were performed in all cases. The indications were classified into four general categories for assessment: 1) determination of occult SUI only, 2) overactive bladder symptoms (subdivided into wet and dry), 3) voiding dysfunction (obstructive symptoms and/or elevated post void residual), and 4) mixed or insensible incontinence. Further chart review was performed to identify if any change in management was directly attributable the UDS results prior to surgery. In order for placement of a sling to be considered an action based on UDS, subjects needed to have a negative supine stress test with/without POP reduction and UDS SUI with POP reduction.

Results: 391 charts were reviewed. 348 met criteria for inclusion in our study. Of the patients, 7.2% were evaluated solely for occult SUI: 90.5% had OAB symptoms (56% wet, 34.5% dry): 16.1% had emptying/obstructive symptoms: 36.8% had mixed incontinence. Of the 348 subjects meeting inclusion criteria 95 subjects (27.3%) had alteration in their management based on the results of the UDS. The most common intervention was the placement of a mid-urethral sling.

Conclusion: Though UDS is a valuable tool to assess for occult stress urinary incontinence, its utility outside of this indication in the preoperative prolapse patient appears to be limited.
Dianne Glass, MD, PhD

**Birthplace:** Columbus, Ohio

**Medical School:** The Ohio State University College of Medicine

**Residency:** Baylor College of Medicine OBGYN

**Fellowship:** New York University Langone Medical Center

**Plans after Fellowship:** Unknown
LONG-TERM DURABILITY OF MIDURETHRAL SLINGS: A TIME TO EVENT ANALYSIS IN A TERTIARY REFERRAL SETTING

Kevin T. Gioia¹, MD; Katherine Odem-Davis², PhD; Erika M. Wolff¹, PhD; Alvaro Lucioni¹, MD; Una J. Lee¹, MD; Blair B. Washington¹, MD; Kathleen C. Kobashi¹, MD, FACS
¹Virginia Mason, Seattle, Washington; ²Center for Biomedical Statistics, Seattle, Washington
(Presented by: Kevin Gioia, MD)

Introduction: The limited data in the literature regarding the durability of both retropubic (RP) and transobturator (TO) midurethral slings (MUS) makes it challenging to counsel patients regarding their long term success. A universal metric for defining success has not been widely established, lending to variable interpretations of the outcomes. Surgeons would likely agree, however, that a patient describing “completely dry” (<1 incontinent episode per week) is a successful outcome. We implemented a time to event (failure) analysis of all our MUS patients who responded “completely dry” at their initial post-operative questionnaire. One can then counsel patients on the durability of their sling given a successful initial outcome.

Methods: Retrospective review of our prospective database identified 113 patients that underwent RP MUS (n=83) or TO MUS (n=30) surgery and responded “completely dry” (by UDI-6) at first response within 1.5 years of surgery (initial post-op) and completed at least one additional questionnaire assessing patient-reported outcomes at least 2 years post-surgery. Durability was defined as probability of remaining completely dry over time. Follow-up data were censored at the time of any subsequent SUI procedure or at loss to follow-up. We implemented a time to event (failure) analysis of all MUS patients who responded “completely dry” at their initial post-operative questionnaire. Durability and confidence intervals (CI) were estimated by Kaplan-Meier, censored for at least 10 subjects at risk.

Results: Among this cohort of RP MUS and TO MUS patients, 42% (35/83) and 43% (13/30) never reported any stress leaks (by UDI-6) during follow-up after initial success respectively. The durability estimates for RP MUS patients at 3, 5, 7, and 10 years were 82% (95% CI: 74-91%), 67% (95% CI: 58-78%), 61% (95% CI: 51-73%), and 34% (95% CI: 24-49%). The durability estimates for TO MUS patients at 3 and 5 years were 83% (95% CI: 71-98%) and 56% (95% CI: 39-81%).

Conclusion: We limited our analysis to only those that were “completely dry” at initial follow-up and observed robust success following both RP and TO MUS. Our time to failure analysis provides the surgeon with another tool for discussion with the patient in the preoperative setting and at follow-up. Specifically, patients that are completely dry within the first year and a half following MUS surgery can be counseled that they have at least a 50% chance of remaining dry for 5 years or more.
Kevin Gioia, MD

Birthplace: Bronx, New York

Medical School: Chicago Medical School

Residency: Stony Brook University

Fellowship: Virginia Mason

Plans after Fellowship: Coastal Urology – Brick, New Jersey
**Introduction:** Advanced pelvic organ prolapse (POP) repair is associated with development of de novo stress urinary incontinence (SUI). Significant controversy exists regarding which patients to treat preoperatively and how best to counsel patients regarding outcomes. In this study we review our experience with robotic assisted prolapse repair (RAPS) and SUI outcomes. **Methods:** Review of our retrospective longitudinal RAPS database with patients that have undergone RAPS procedures between 2006-2014 by five fellowship trained surgeons. Patients were separated into two cohorts; those that underwent MUS at the time of RAPS and those that did not. Demographics, history, operative, and peri-operative outcomes were compared. Descriptive statistics, Pearson’s Chi-square test, and Fisher’s Exact tests were performed. **Results:** We identified 196 patients that underwent RAPS procedures between 2006-2014. Mean follow-up was 13.6 months. 91 patients had SUI at baseline and underwent a SUI procedure concomitantly (SUITX+). 105 patients did not have SUI at baseline and did not have a concomitant SUI procedure (SUITX-). In the SUITX+ cohort, 79 had a transobturator sling, 3 retropubic sling, 7 retropubic bladder neck suspension, and 2 miniarc slings. Persistent SUI was reported by 4/89 (4.5%) of the SUITX+ cohort and de novo SUI by 22/101 (22%) of the SUITX- cohort, p=0.0005. 1/89 SUI+ and 2/100 SUI- patients developed worse SUI. 2/91 (2.2%) women in the SUITX+ cohort had a subsequent SUI procedure, one periurethral injection and 1 midurethral sling. 9/105 (8.6%) women in the SUITX- cohort had subsequent SUI procedure, 2 periurethral injection and 7 midurethral sling. In the SUITX+ cohort sling specific complications included 1/91 (1%) woman that required sling revision for obstructed voiding and 1/91 (1%) woman that had sling mesh exposure treated with estrogen. **Conclusion:** We observed a 22% de novo SUI rate after RAPS procedures, yet less than half of these chose to have another SUI procedure. Women who had a concurrent sling had a very low rate of SUI persistence or of sling specific complications. **Funding:** None
Priyanka Gupta, MD

**Birthplace:** Toledo, Ohio

**Medical School:** Mayo Medical School

**Residency:** University of Minnesota

**Fellowship:** Beaumont Health

**Plans after Fellowship:** Job - Michigan
IMPROVEMENT IN STRESS URINARY INCONTINENCE WITH PESSARY USE VS. SLING PROCEDURE
Meghan Griffin, DO; Solafa Elshatanoufy, MD, PharmD; Humphrey Atiemo, MD; D. Richardson, L. Luck
(Presented by: Meghan Griffin, DO)

Introduction: Quantification of improvement in stress urinary incontinence gained by wearing a pessary compared with undergoing a sling procedure using validated questionnaires.

Methods: After IBR approval, patients presenting with stress or mixed urinary incontinence and prolapse no greater than stage 2 were offered the opportunity to participate in the study. Patients were asked to complete the Pelvic Floor Distress Inventory short form (PFDI-20) and Pelvic Floor Impact Questionnaire short form (PFIQ-7) at baseline, after wearing the pessary at least two weeks and 2-6 weeks after sling surgery. All patients also demonstrated urodynamic stress incontinence on multichannel urodynamic testing. The baseline questionnaire responses were compared to the responses with pessary and to those 2-6 weeks after the sling procedure using the paired t-test. The entire PFDI-20 and entire PFIQ-7 as well as the Urinary Distress Inventory short form (UDI-6) and the Urinary Impact Questionnaire short form (UIQ-7) responses were analyzed.

Results: Eleven patients were included in our analysis with a mean age of 57.91±12.96 years, mean BMI of 33.47±4.88kg/m2, mean gravity 2.73±1.62 and mean parity of 2.00±1.48. All of the patients were Caucasian with the exception of one African American patient. Seven patients presented with mixed incontinence and 4 with pure stress incontinence. The mean number of years incontinent was 12.94±15.25. Three patients had previously undergone one incontinence procedure while two patients had undergone two and only one had a prior prolapse repair. Seven patients underwent a retropubic midurethral sling, one underwent a transobturator midurethral sling and three underwent an autologous fascia pubovaginal sling. When the mean change in scores from baseline to pessary and from baseline to sling were compared, there was no statistically significant difference.

Conclusion: When comparing the change in questionnaire responses from baseline to pessary use and baseline to post sling procedure, there is no statistically significant difference. Though this is a very small sample and a much larger study is needed, this indicates that it is possible for patients to achieve the same level of improvement in stress urinary incontinence with pessary use as can be achieved with a sling procedure.

Table 1) Mean change in scores

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>PFDI-20</th>
<th>UDI-6</th>
<th>PFIQ-7</th>
<th>UIQ-7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change Baseline to Pessary</td>
<td>-32.20±43.82</td>
<td>-17.42±28.61</td>
<td>2.16±60.06</td>
<td>-11.69±44.08</td>
</tr>
</tbody>
</table>
Meghan Griffin, DO

Birthplace: Detroit, Michigan

Medical School: Michigan State University College of Osteopathic Medicine

Residency: St. John Providence Hospital

Fellowship: Henry Ford Hospital

Plans after Fellowship: Unknown
CHARACTERIZING LUT DYSFUNCTION IN MEN WITH MS: RESULTS FROM A PROSPECTIVELY MAINTAINED DATABASE FROM 2000–2015
(Presented by: Catherine Harris, MD)

Introduction: Men represent the minority of patients with multiple sclerosis (MS) but have traditionally been considered to be at high risk for progressive lower urinary tract symptoms (LUTS) and upper tract deterioration. Overall, male MS patients are underrepresented in the literature. We sought to better characterize LUTS and urodynamic findings in men with MS at a large tertiary academic practice.

Methods: All patients with neurological conditions that presented for urologic evaluation at a tertiary referral center have been prospectively entered into a database since 2000. Patient data from men with MS including disease type and duration, bladder management, LUTS questionnaire response, surgical interventions, upper tract imaging and urodynamics (UDS) was analyzed.

Results: Of the 1069 patients in the database, 82 men with MS were identified with follow-up greater than 6 months, average 5.5 (0.6–32) years. Patient characteristics are in table 1. The percentage of men voiding decreased from 70% to 54.4% over time with an increasing number (10% to 17.8%) relying on indwelling catheter. Quality of life (QOL) was stable to improved over time (4.8 decreasing to 4.3). Compliance was impaired in 7 (13%) and Detrusor Sphincter Dyssynergia (DSD) was present in 21 (38.9%) of the 54 patients undergoing UDS. Twenty-five patients required surgical intervention (30.4%), including (SPT) 10 (13.4%), Botox 5 (6.1%), transurethral resection of the prostate 7 (8.5%), augmentation cystoplasty 1 (1.2%), or urinary diversion 2 (2.4%). On multivariate analysis, age, disease duration, disease type and UDS findings were not predictive of the need for surgical intervention.

Conclusion: In this large cohort of male patients with MS followed for over 5 years, many eventually required intervention beyond medical therapy. Though the percentage of patients relying on either clean intermittent catheterization (CIC) or a form of indwelling catheterization at last visit was substantially higher than baseline, upper tract deterioration was rare. Men should be counseled to maintain close urological surveillance, though traditional concerns regarding upper tract decompenstation appear to be mitigated when patients are closely monitored.
Catherine Harris, MD

Birthplace: Iowa City, Iowa

Medical School: University of Texas School of Medicine in San Antonio

Residency: Vanderbilt University Medical Center

Fellowship: University of Texas Southwestern Medical Center

Plans after Fellowship: Unknown
Introduction: Exposure to environmental and industrial pollutants and toxins has been associated with a number of adverse health outcomes. We wished to determine whether toxins levels were associated with increased likelihood of incontinence and nocturia.

Methods: We used data from the 2012 National Health and Nutrition Examination Survey cycle to examine the association between urinary levels of 13 heavy metals, 3 perchlorates, 2 pesticides, 14 phthalates, 10 polyaromatic hydrocarbons (PAH), 12 polyfluoroalkyl (PFC) chemicals, and 26 volatile organic compounds (VOCs) with self-reported stress incontinence, urge incontinence and nocturia. Urinary concentration of each pollutant was normalized to urine creatinine and log-transformed. Each pollutant was examined in a weighted, variance-corrected multivariate logistic regression for association with each outcome of interest. Models examining male subjects were adjusted for age, body mass index, race, diabetes, and self-reported health status. Models examining female subjects were also adjusted for parity.

Results: Cohorts of 602 women and 565 men were included in the study. Urinary levels of pollutants were consistently higher in men. Prevalence of incontinence and nocturia was significantly higher among women. Among women, no association was noted between pollutant levels and the outcomes of interest. Among men, increased concentrations of 3 VOCs, 2 heavy metals and 1 perchlorate were associated with increased stress incontinence; increased concentrations of 2 VOCs, 1 heavy metal and 3 PAHs were associated with increased urge incontinence; and increased levels of 8 VOCs, 2 heavy metals, 6 PAHs, 1 pesticide, and 1 perchlorate were associated with increased nocturia.

Conclusion: This study demonstrates that increased urinary levels of certain environmental and industrial pollutants are associated with increased lower urinary tract (LUT) dysfunction in men. Exposure to these pollutants has been associated with neurotoxicity and other adverse health outcomes. We hypothesize that pollutant exposure may be a marker for neurological injury leading to LUT dysfunction. Distinct etiology of incontinence between genders likely accounts for lack of association between pollutants and LUT dysfunction in women.

Funding: None
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Plans after Fellowship: TBD
INTRODUCTION: Annually, over 200,000 women undergo surgical correction of pelvic organ prolapse in the United States. Several materials are used including allograft tissue and synthetic grafts. In 2011, the FDA issued a statement that serious complications are not rare with the use of surgical mesh in transvaginal repair of pelvic organ prolapse (POP). Dermal allografts represent an alternative to mesh and consist of solvent-dehydrated, gamma-irradiated, preserved human collagen.

METHODS: A retrospective review was performed using medical records of patients at our center who have undergone placement of dermal allografts for POP from August 2013 to October 2015. The grafts are soaked in a solution of neomycin sulfate and polymyxin B sulfate. The grafts are secured to the sacrospinous ligaments bilaterally using a suture passing device and then trimmed to fit the patient’s anatomy.

RESULTS: Forty-six female pelvic floor repairs were performed in 42 patients using allograft dermis of which 7/42 (17%) patients had undergone previous prolapse repair. Mean age was 66 years with 30/46 (65%) Grade 3 prolapse and 15/46 (33%) with Grade 4 prolapse using the Baden-Walker system. Simultaneous pubovaginal sling placement for concomitant stress urinary incontinence was performed in 29/42 (67%) patients. Complications related to graft placement including wound dehiscence in 1/46 (2.2%) and hematoma requiring evacuation in 1/46 (2.2%). No patient complained of or demonstrated on exam clinically significant recurrence at follow up.

CONCLUSION: Allograft dermis for female pelvic floor repair is an effective and safe procedure in the era of FDA warnings regarding the use of surgical mesh in transvaginal repair of pelvic organ prolapse.

DISCLOSURES: Charles Secrest, MD is a consultant for Coloplast.
Kelly McAlvany, DO

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SACRAL NEUROMODULATION THERAPY IN PATIENTS WITH NEUROLOGIC LOWER URINARY TRACT DYSFUNCTION – SHOULD IT REMAIN AN OFF LABEL INDICATION? ANALYSIS OF 80 CONSECUTIVE CASES

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(Presented by: Henry Okafor, MD)

Introduction: Although early Sacral Neuromodulation (SNM) trials excluded patients with neurologic lower urinary tract dysfunction (NLUTD), an increasing number of small studies show outcomes in these patients are similar to those without NLUTD. The use of SNM in NLUTD remains off label. The aim of this study was to compare SNM in patients with NLUTD to those without NLUTD and determine clinical factors associated with successful utilization of SNM.

Methods: A retrospective review of patients who underwent SNM between 2011 and 2015 was completed. Patients with a neurologic diagnosis in the electronic chart were identified and placed in the NLUTD cohort. Demographic and clinical characteristics of the NLUTD and non-NLUTD cohort were identified. Rates of progression to stage 2, revision and explant were analyzed. The data were examined using Pearson's chi-square and Fisher exact tests as appropriate.

Results: Out of 412 patients, 80 (19.4%) had NLUTD at time of SNM with a mean age was 54 ±17 years. 75% of the NLUTD group was female (N=60). The neurogenic diagnoses were: spinal cord injury 28.8% (N=23), multiple sclerosis 23.8% (N=19), Stroke 15% (N=12), cerebral palsy 12.5% (N=10), peripheral nervous system disorders 12.5% (N=10) and Parkinson's disease 7.5% (N=6). The primary indication for SNM was urgency incontinence in 62.5% of the NLUTD group (N=50) and 59.5% in the non-NLUTD group (N=197). Progression to stage 2 SNM was similar in both groups, 90% in NLUTD versus 87% in non-NLUTD. Revision rates were higher in the NLUTD cohort compared to non-NLUTD, 46% versus 35%, but this trend did not reach statistical significance (p=0.09). There was a statistically significant higher explant rate in the NLUTD group, 33% vs 20% (p=0.0194) and the most common reason for explant in both groups was loss of efficacy. Progression to stage 2, revision rates, and explant rates for each type of neurologic diagnosis did not have any statistically significant difference.

Conclusions: The primary indication for SNM in both NLUTD and non-NLUTD was urgency incontinence. The specific neurologic diagnosis is not predictive of SNM success, revision, or explants rates. However, patients with NLUTD appear more likely to need the device explanted when compared to patients with non-NLUTD.

Funding: None
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LOWER RISK OF LEAD REVISION BASED ON “OPTIMAL” LEAD PLACEMENT DURING STAGE 1 SACRAL NEUROMODULATION

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(Presented by: Javier Pizarro-Berdichevsky, MD)

Introduction: During Stage I, InterStim procedures responses at all 4 electrodes of the lead are evaluated. For each electrode, a pelvic bellows and plantar flexion of the great toe response are recorded. Therefore, motor response can be graded on a scale of 0 (no response at any electrode) through 8 (positive bellows and toe responses at all 4 electrodes). Currently, there is a paucity of literature defining optimal/suboptimal responses during stage I. Our aim was to describe the correlation of electrode response and lead revision.

Methods: A retrospective review of all Stage 1 from 2002-15 was performed. Motor responses were analyzed as a sum of positive bellows and toe responses at all 4 electrodes (of a possible total 8) or either the sum of bellows responses or great toe contractions at all 4 electrodes (both, a possible total of 4). Univariate and multivariate analyses were performed for lead revision risk factors. Inclusion criteria were unilateral staged procedures with operative reports noting motor responses. Descriptive statistics are presented as percentages, mean±SD or median (interquartile range). Spearman’s Rho, Student’s t, Mann-Whitney U, Chi-Square, and Fisher’s Exact tests were used, as appropriate.

Results: 177 Stage 1 procedures qualified for analysis. The mean age in years was 58.4±15.9, 86.4% were females, 93.2% of the patients had overactive bladder diagnose, the mean BMI was 30±7.1, 19.9% were diabetic and 19.4% were smokers. The median follow up in months was 10.5(2-36). 34/177(19%) patients had revisions, which were negatively associated with total (toe +bellows) responses (p=0.023) or toe responses (p=0.018) regardless of bellows. Predictors of revision on logistic regression included age at implant (>59 years) and less than 4 (of a possible 8) responses (OR 5.5 CI 95% 2-14.7 and OR 4.2 CI 95% 1.4-12.9 respectively).

Conclusion: Of an overall 19% revision rate, most occurred in patients with fewer total electrode responses and specifically, less toe responses. Older patients (5.5 fold) and those with less than 4 of 8 responses (4.2 fold) were most likely to experience revision.
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INCONSISTENCY IN THE DEFINITION OF URINARY TRACT INFECTION IN THE SPINAL CORD INJURY POPULATION: A SYSTEMATIC REVIEW
Yahir Santiago-Lastra, MD; Laura L. Giusto, MD; Michael Hughes, Mark MacEachern, BA, MLIS; Anne P. Cameron, MD
(Presented by: Yahir Santiago-Lastra, MD)

Introduction: Urinary tract infection (UTI) is a commonly reported outcome in Spinal Cord Injury (SCI) literature. In the early 1990s, the National Institute on Disability and Rehabilitation Research (NIDRR) consensus conference recommended a standard definition of UTI in the SCI patient utilizing urine culture data, urinalysis and clinical symptoms including fever. Despite this proposed definition, there is considerable variability in the way UTIs are defined in SCI literature. Our aim is to report the inconsistency in UTI definitions in the existing SCI literature.

Methods: We performed a systematic review using the Preferred Reporting Items for Systematic Reviews (PRISMA) guidelines. We conducted a query of Embase and Medline, using the medical subject heading terms “spinal cord injury” and “urinary tract infections.” We included studies that reported on SCI patients as study subjects and had a UTI outcome reported.

Results: We identified 1425 publications of which 317 met inclusion criteria. UTI was reported as a primary outcome in 254 (80.13%) of included articles, however only 139 (43.85%) of included studies provided an explicit definition of UTI (Table 1). We encountered eleven different definitions of UTI. Positive urine culture, urinalysis, fever and clinical symptoms defined a UTI in 52 (37.41%) of 139 studies. Despite using these four criteria, most of these studies did not specifically describe using the NIDRR definition of UTI. RCTs were more likely to define a UTI than other study types (X²= 12.77, n=39, p < 0.05). Sixty-four (20.32%) of the included articles were published in urology journals versus non-urology journals. Articles published in urology journals did not have an increased likelihood that UTI would be defined (X²= 0.213, p = 0.65). Articles published after the 1992 NIDDR consensus conference were no more likely to report a definition of UTI (X²= 1.39, p = 0.24).

Conclusion: Definitions for UTI are variable and used inconsistently in studies of SCI patients, limiting the reliability of its diagnosis in this population. Despite various proposed definitions over time, there has not been a consistently established definition of UTI in SCI literature.
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VERY LOW REAL TIME RATE OF URINARY RETENTION AFTER INTRADETRUSOR BOTOX FOR NON-NEUROGENIC OVERACTIVE BLADDER

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(Presented by: Kirin K. Syed, DO)

Introduction: According to the most recent AUA/SUFU guidelines, intradetrusor onabotulinumtoxinA (BTN/A) is a standard, evidence strength grade B, third line treatment for refractory non-neurogenic overactive bladder (OAB). Urinary retention is the most common clinically significant reported side effect ranging from 5.4% to 43% in previous studies. The aim of this study was to investigate the real time rate of urinary retention in patients treated with BTN/A for refractory non-neurogenic OAB in a multi-institutional study.

Methods: Retrospective chart review identified 71 patients who were treated with 100U BTN/A for refractory non-neurogenic OAB from August 2011 to July 2015 at two institutions. Using a flexible cystoscope, 100U Botox® reconstituted with 10 ml normal saline was administered. Injections of 1ml (10units/mL) were administered in 10 evenly distributed sites sparing the trigone. Pre and post BTN/A post void residuals (PVR) were reviewed. Urinary retention was defined as PVR >200mL requiring clean intermittent catheterization (CIC).

Results: After exclusion, the study group consisted of 66 patients with a mean age of 67 years and 30% were men. Mean pre and post-procedural PVR was 14.06mL and 69.21mL. Eight patients (12.12%) were noted to have elevated PVR >200mL post injection however only one patient (female) required initiation of CIC. The rate of urinary retention was 1.5% (N=1). There was no correlation with age, history of previous radiation, diabetes or prior use of a neuromodulator device.

Conclusion: Contrary to prior studies, our patient cohort demonstrates a very low risk of real time urinary retention rates in appropriately selected patients treated with BTN/A for refractory non-neurogenic OAB.
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Plans after Fellowship: Job – Location TBD
HARVEST OF TENSOR FASCIA LATA GRAFT FOR ABDOMINAL SACRAL COLPOPEXY

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(Presented by: Maria Voznesensky, MD)

Introduction: Extrusion is a known risk of abdominal sacral colpopexy performed with synthetic mesh. Long-term follow-up in the CARE trial revealed an estimated 9.9% risk of mesh extrusion. Spondylodiscitis is also a risk when using synthetic mesh. There are few reports on use of autologous tensor fascia lata (TFL) graft for abdominal sacral colpopexy. The objective of our presentation is to demonstrate the technique for harvesting the TFL, and its use in abdominal sacrocolpopexy.

Methods: A retrospective review was performed using medical records of patients at our tertiary care center who had undergone abdominal sacrocolpopexy with TFL for pelvic organ prolapse from Oct 2005 to Oct 2015. We provide detailed photographic and videographic description of the steps of the procedure, including harvest of TFL. With the patient supine on the OR table she was positioned with a slight bump under her right hip for the fascia lata harvesting. The lateral femoral condyle was identified as well as the anterior superior iliac spine. A line demarcating connecting the two was made using a marker. A 3 cm incision was made ~ 4 cm superior to the lateral femoral epicondyle. The incision was carried down to the level of the fascia lata. Using electrocautery, the overlying tissue was dissected off. Next, it was cleared using a ray-tec. A medium malleable blade was then advanced over the fascia to clear it further cephalad. Next, 2 horizontal lines 1 cm in width apart were marked and incised with a 15 blade. A right angle clamp was used to elevate the fascia caudally. Metzenbaum scissors were then used to free the fascia from the muscle. The incisions in the fascia were extended until a length of roughly 20 cm was obtained. The TFL was extracted through the proximal incision. Hemostasis was ensured and subcutaneous sutures of 2-0 Vicryl were placed. The skin was then closed in a subcuticular fashion using a running 4-0 Monocryl. Steri-Strips and a 4 x 4 were then placed over the incision and covered with Tegaderm. An Ace bandage compression dressing was then wrapped around the thigh. The patient was then repositioned into the dorsal lithotomy position. A midline laparotomy incision was made. The abdomen was free from adhesions and the vagina was visible in the pelvis, the uterus was surgically removed at a prior surgery. The peritoneum overlying the sacral promontory was divided thus exposing the anterior longitudinal ligament. An EEA sizer was placed in the vagina, and Foley was placed. The bladder was tagged with suture, and retracted anteriorly exposing the area of the vaginal cuff. The bladder was carefully dissected off the vaginal cuff. Appropriate length of the graft was estimated. Vaginal exam confirmed adequate reduction of the prolapse. The TFL graft is secured to the vaginal cuff caudally and to the anterior longitudinal ligament cranially. The fascia was secured to the promontory. Repeat exam demonstrated correction of the prolapse. The peritoneum over the sacral promontory was closed.

Results: ASC with TFL was performed in 7 patients. Mean age was 62.8 y.o (+/- 9.3 SD), and mean BMI was 31.4 kg/m² (+/- 3.9 SD). 100% of patients had undergone previous abdominal surgery, and for 4/7 (57%) had prior prolapse repair procedures. 71% (5/7) had ≥Grade 3 prolapse using the Baden-Walker system. Mean EBL was 175 ml (+/- 116 SD), mean ASA score was 2.5, mean OR time was 309 min (+/- 71 SD). Mean hospital stay was 2.8 days (+/- 1.21 SD). 3/7 (42%) of patients developed complications following the procedure, including nausea, incomplete bladder emptying and c.difficile. None complained of leg pain or difficulties ambulating throughout post op follow-up. All reported improvement in symptoms, and none showed clinically significant prolapse recurrence at follow up. Average follow up was 11.5 mo (+/- 7.7 SD).

Conclusion: Abdominal sacral colpopexy using autologous TFL graft is a feasible option. It is especially advantageous in cases where infection and synthetic mesh extrusion risks are high. This is a viable repair option in the ear of mesh complications and failures.

Disclosures: None
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Introduction: While sacral neuromodulation (SNS) is a valuable treatment for patients with refractory overactive bladder (OAB), its exact mechanism of action is unknown. The objective of our study is to investigate if SNS can modulate areas of brain activity in women with refractory overactive bladder. Our initial aim is to first identify areas of the brain that are activated in response to bladder filling in women prior to SNS treatment.

Methods: Women planning Stage 1 Interstim® trial for the treatment of refractory OAB were invited to participate in the study, which consisted of a functional magnetic resonance imaging (fMRI) exam before and 6 weeks after (if successful) SNS implantation. Women underwent BOLD fMRI during active bladder filling and were asked to press a signal button when they experienced a strong urgency to void. At that point, the infusion was stopped and imaging was continued for one minute before the bladder was emptied. The fill/empty cycle was repeated up to 4 times. SPM8 was used for group analysis and an uncorrected level threshold of p<0.01 was used to identify significant activations.

Results: Preliminary analysis of the first five women who underwent fMRI prior to Interstim® trial was performed. Mean OAB-q score was 27.2 (SD 7.3) and health related quality of life was greatly impaired. Brain areas where significant activations for the group were observed included: right and left insula, right and left cerebellum, left thalamus, and left somatosensory cortex. All 5 patients underwent standard stage 1 Interstim® lead implantation in the operating room. Four of the 5 patients had successful Stage 1 SNS trials and will undergo repeat fMRI in upcoming weeks.

Conclusion: In women with refractory overactive bladder prior to Interstim®, areas of increased brain activity were observed during strong urgency to void. Research is underway to determine whether SNS therapy modulates these areas.

Funding: SUFU Neuromodulation Grant
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