SUFU Fellows Forum
Wednesday, March 1, 2017
Scottsdale, Arizona

Education Committee Chair: Michael E. Albo, MD
SUFU 2017 Fellows Forum
Wednesday, March 1, 2017
1:30 p.m. – 5:45 p.m.
*Not CME Accredited

Please Note: Sessions One & Two are held concurrently.
Location: Arroyos D & E, Arroyos C

1:30 p.m. – 1:35 p.m. Welcome and Introduction
Michael E. Albo, MD

1:35 p.m. – 1:45 p.m. Choosing a Practice Model/How to Get Started
Sandip P. Vasavada, MD

1:45 p.m. – 1:55 p.m. Academic Practice – Navigating Clinical and Research Expectations
Leslie M. Rickey, MD, MPH

1:55 p.m. – 2:05 p.m. Contract Negotiations – What to Ask For/ What to Look Out For
Timothy B. Boone, MD, PhD

2:05 p.m. – 2:15 p.m. SUFU – How, Why and When to Get Involved
Gary E. Lemack, MD

2:15 p.m. – 2:45 p.m. Quality Metrics/Registries/ACA – What does it Mean for Practice
J. Quentin Clemens, MD

2:45 p.m. – 3:05 p.m. Getting a Job - My Experience
Moderator: Michael E. Albo, MD
Panelists: Kimberly Ferrante, MAS, MD
Ryan M. Krlin, MD
Leah Y. Nakamura, MD
Anne M. Suskind, MS, MD

3:05 p.m. – 3:20 p.m. Q&A

3:20 p.m. – 3:30 p.m. Break

3:30 p.m. – 5:45 p.m. Fellow Abstract Presentations

Breakout Group One
Location: Arroyos D & E
Moderator: Christian O. Twiss, MD
Session Schedule located on page 3

Breakout Group Two
Location: Arroyos C
Moderator: Michael E. Albo, MD
Session Schedule located on page 31
SUFU 2017 Fellows Forum
Wednesday, March 1, 2017
1:30 p.m. – 5:45 p.m.
*Not CME Accredited

Please Note: Sessions One & Two are held concurrently.

Breakout Group One
Location: Arroyos D & E
Moderator: Christian O. Twiss, MD

3:35 p.m. – 3:44 p.m.  Paholo Barboglio Romo, MD, MPH
3:44 p.m. – 3:53 p.m.  Amanda S.J. Chung, MBBS, MS, FRACS
3:53 p.m. – 4:02 p.m.  Joshua A. Cohn, MD
4:02 p.m. – 4:11 p.m.  Elizabeth Van Huffel Dray, MD
4:11 p.m. – 4:20 p.m.  Juan A. Guzman-Negron, MD
4:20 p.m. – 4:29 p.m.  Casey Kowalik, MD
4:29 p.m. – 4:38 p.m.  Brain J. Linder, MD
4:38 p.m. – 4:47 p.m.  Rena D. Malik, MD
4:47 p.m. – 4:56 p.m.  Laura Nguyen, MD
4:56 p.m. – 5:05 p.m.  Henry T. Okafor, MD
5:05 p.m. – 5:14 p.m.  Lauren Rittenberg, DO
5:14 p.m. – 5:23 p.m.  Melissa T. Stanford, MD
5:23 p.m. – 5:32 p.m.  Nicole Szell, DO

5:32 p.m. – 5:45 p.m.  Wrap Up/Q & A
Invalidation of the Practice of Adding Fluid to the AMS 800 Artificial Urinary Sphincter Pressure Regulating Balloon

Paholo G. Barboglio Romo, MD, MPH; Zachary B. Koloff, MD; Yooni Yi, MD; Bahaa S. Malaeb, MD
Presented By: Paholo G. Barboglio Romo

Introduction: The artificial urinary sphincter (AUS) AMS 800 has proven to be very effective in treatment of stress urinary incontinence. Surgeon practice patterns vary when the device does not give the desired degree of dryness. A common approach utilized is to add additional fluid to the pressure regulating balloon (PRB). The goal of this study was to evaluate the increase in pressure with the addition of fluid to the PRB.

Methods: Ex vivo pressure studies were conducted on Boston Scientific AMS 800 PRBs rated 51-60, 61-70 and 71-80 cmH2O in a controlled lab setting using the Laborie Aquarius TT urodynamics system. After calibration of the equipment and appropriate cycling of the balloons in a standardized technique similar to that performed in the operating room setting, PRBs were initially filled to 10mL using normal saline 0.9% and opening pressures were obtained. We reported mean and standard deviation. Balloons were inflated up to 35ml and pressure-volume data sets were acquired for each device.

Results: The mean opening pressures at 10mL fill volumes of the 51-60cmH2O, 61-70cmH2O, and 71-80cmH2O PRBs were 51.0±4.8, 65.1±7.8, and 78.9±3.9 cmH2O, respectively. The pressure-volume curves appeared similar for all PRBs and rose to maximum pressures of 67.0±4.0, 87.3±5.1 and 105.7±2.4 cmH2O at fill volumes of 16, 17 and 16 mL, respectively for each type of PRB. The addition of any volume of fluid to the balloons did not result in any additional increase in pressure up to a fill volume of 35 mL (see Figure 1). Following data collection, we kept of filling the balloons to a volume of 500 ml. Even at these supra-physiologic volumes, pressures remained stable and only started slowly increasing to 100, 105 and 110 cmH2O respectively at 1 liter.

Conclusion: The AUS PRB is a very compliant device and adding more fluid to an in situ AUS PRB would not increase the pressure. Although our study does not account for in vivo behavior within a possible capsule formation, we discouraged this practice and recommend adopting a different corrective method for persistent urinary incontinence.
Paholo G. Barboglio Romo, MD, MPH

Birthplace: Hermosillo, Mexico

Medical School: Universidad Anahuac

Residency: Dartmouth College

Fellowship: University of Michigan

Plans after Fellowship: N/A
Introduction: In recent years, there has been increasing concern regarding use of synthetic mesh for pelvic organ prolapse (POP) surgery. An alternative technique of anterior prolapse repair is using autologous fascia lata (AFL) as reinforcement. Although several studies have evaluated this surgery for POP outcomes, there is a sparsity of data regarding donor site morbidity. This study examines AFL donor site morbidity and complications in the context of POP surgery.

Methods: A retrospective review of all patients who underwent AFL graft for POP surgery by a single surgeon, from January 1, 2013 to December 31, 2015, was performed. Outcomes assessed included intraoperative and postoperative complications, as well as pain and functional outcomes.

Results: Fourteen women (mean age 69, range 36-84 years) underwent AFL graft harvest for POP surgery; mean duration of follow up was 10.8 months. All surgeries involved transvaginal repair of anterior compartment prolapse (mean cystocele grade 3.6). Two patients had concurrent apical prolapse; one had concurrent posterior prolapse. There were no intraoperative complications during graft harvest. The early postoperative course was complicated by seroma in 14% (2/14) of patients, which resolved spontaneously. One patient developed a donor site hematoma, which required aspiration. There were no donor site infections. 36% (5/14) of patients had ongoing donor site pain at three weeks follow up; no pain was chronic beyond three months. There were no late complications identified beyond three months. No cases of muscle prolapse at the donor site, restricted range of motion or functional gait disturbance.

Conclusion: AFL graft harvest in POP surgery was completed in all cases without intraoperative complication. Early donor site complications were of low Clavien-Dindo grade (1-3), including pain controlled with oral analgesia, spontaneously-resolving seroma (14%) and hematoma requiring aspiration (7%). There were no late complications; no chronic pain, muscle prolapse, restricted range of motion or gait disturbance.
Amanda S.J. Chung, BSc, MBBS, MS, FRACS

**Birthplace:** St. Leonard’s, New South Wales, Australia

**Medical School:** University of New South Wales, Australia

**Residency:** Royal Australasian College of Surgeons

**Fellowship:** Eastern Virginia Medical School

**Plans after Fellowship:** Urological Surgeon, Sydney, Australia
HEALTH LITERACY, COGNITION AND URINARY INCONTINENCE AMONG GERIATRIC INPATIENTS DISCHARGED TO SKILLED NURSING FACILITIES

Joshua A. Cohn, MD; Avantika Saraf; Kathryn Goggins; Sandra Simmons; Sunil Kripalani; Roger R. Dmochowski, MD, MMHC, FACS; John Schnelle; W. Stuart Reynolds, MD, MPH
Vanderbilt University Medical Center, Nashville, TN, USA
Presented By: Joshua A. Cohn

Introduction: The etiology of and disease burden associated with incontinence in the elderly is multifactorial. We aimed to investigate the association between health literacy and cognition and urinary incontinence in a geriatric inpatient population transitioning to a skilled nursing facility (SNF).

Methods: Health literacy, depression and cognition were assessed via the Brief Health Literacy Screen (BHLS), Geriatric Depression Scale 5-item (GDS) and Brief Interview for Mental Status (BIMS), respectively. Multivariate logistic regression controlling for demographic and clinical factors was performed to determine the association between BHLS score and incontinence by: 1) nursing report of urinary incontinence during hospitalization and 2) patient self-reported “bladder accidents” in the post-enrollment study interview.

Results: 1556 hospitalized patients aged 65 and older met inclusion criteria, of whom 922 (59.3%) were women and 1480 had available BHLS scores. 464 (29.8%) patients had urinary incontinence by nursing report and 515 (33.1%) by patient report. On average, incontinent patients by nursing report were older (p<0.001) and had higher GDS scores (p<0.001), fewer years of education (p=0.034) and lower BHLS (8.8 vs. 10.9, p<0.001) and BIMS scores (12.2 vs. 13.6, p<0.001) relative to continent patients. On multivariate analysis, nursing-reported incontinence was significantly associated with lower BHLS (i.e. poorer health literacy) (OR 0.93, 95% CI 0.89-0.99) and BIMS (i.e. poorer cognition) (OR 0.90, 95% CI 0.83-0.97) total scores and need for assistance with toileting (OR 7.08, 95% CI 2.16-23.21). Patient-reported incontinence was significantly associated with female sex (OR 1.62, 95% CI 1.19-2.21), increased GDS score (i.e. greater likelihood of depression) (OR 1.22, 95% CI 1.10-1.36) and need for assistance with toileting (OR 2.46, 95% CI 1.26-4.79). Nursing and patient-reported incontinence were discordant in 25.8% of patients.

Conclusion: Poorer health literacy and cognition are independently associated with an increased likelihood of nursing-reported urinary incontinence among geriatric inpatients transitioning to a SNF. Practitioners should be aware of the potential for urinary incontinence to be present or develop in hospitalized patients with poorer health literacy and cognition even if not patient-reported.

Funding Source: Department of Health and Human Services Centers for Medicare & Medicaid Services grant #1C1CMS331006
Joshua A. Cohn, MD

**Birthplace:** Philadelphia, PA

**Medical School:** University of Michigan Medical School

**Residency:** University of Chicago

**Fellowship:** Vanderbilt University Medical Center

**Plans after Fellowship:** Einstein Medical Center, Philadelphia, PA
SLING EXCISION FOR PAIN: CAN WE PREDICT WHO BENEFITS FROM SURGERY?

Elizabeth Van Huffel Dray, MD
Presented By: Elizabeth Van Huffel Dray

Introduction: De novo pain following mid-urethral synthetic sling for stress incontinence can have dire consequences for patient quality of life. In this study, we sought to better characterize the presentation of de novo sling pain, define rates of pain resolution after sling excision, and determine which, if any, patient or operative factors influence pain outcomes.

Methods: This is a retrospective review of mesh excision for a primary complaint of pelvic pain or dyspareunia. Patients with a history of vaginal mesh for pelvic organ prolapse, mesh erosion, and urinary retention were excluded. The outcomes assessed were patient reported improvement in pain along with abstracted demographic information, comorbidities, prior surgical history, number and type of mesh revisions performed, and exam findings.

Results: Between 2006 and 2016, 107 mesh excisions met our inclusion criteria. Average patient age was 51.2, parity was 2.3 and follow-up was 14.1 months. The majority of our patients had undergone prior TOT (59.4%), while 28.7% had a prior TVT and 11.9% had a mini-sling. At presentation, 92.4% of patients had de novo pelvic or vaginal pain and 81.1% reported new dyspareunia. On exam, tenderness along the sling was found in 55.3% of patients, levator muscle plus sling tenderness in 14.6% and isolated levator or non-focal tenderness in 17.5%. Following surgery, 48.5% of patients reported complete resolution of pain, 23.3% reported moderate relief, and 26.2% of patients reported minimal or no improvement in symptoms. On analysis of patient factors, current smoking status was associated with a higher rate of persistent pain when compared with former or non-smokers (40% v. 20.3%, p=0.036). Premenopausal status and concomitant chronic pain syndromes were both associated with a trend towards non-resolution of pain when compared with postmenopausal patients and patients without chronic pain, respectively (p=0.07 and 0.06). No effect on resolution of pain was seen when exam findings, obesity, prior sling type, prior attempts at mesh excision or extent of mesh excision were analyzed.

Conclusion: Moderate to complete resolution of pain occurred in 71.8% of the patients who underwent sling excision in our study. While some patient factors may portend worse outcomes, our study demonstrates that women with de novo pain following sling placement may benefit from excision even if focal sling tenderness is absent or prior attempts at mesh excision have been undertaken.
Elizabeth Van Huffel Dray, MD

Birthplace: Bridgeport

Medical School: University of Michigan

Residency: Loyola University Medical Center

Fellowship: University of Michigan

Plans after Fellowship: N/A
FEASIBILITY OF SAME DAY DISCHARGE AFTER ROBOTIC ASSISTED PELVIC FLOOR RECONSTRUCTION

Juan M. Guzman–Negron, MD; Jessica C. Lloyd, MD; Elodi Dielubanza, MD; Henry Okafor, MD; Howard B. Goldman, MD
Cleveland Clinic Lerner College of Medicine, Cleveland, OH
Presented By: Juan M. Guzman–Negron

Introduction: Robotic surgical procedures have increasingly become more common in the field of female pelvic reconstruction. Purported benefits of robotic assisted pelvic floor reconstruction (RAPFR) procedures include: shorter hospital stay, quicker recovery, minimal blood loss, and decreased postoperative pain. Following RAPFR procedures, the current accepted practice is discharge after a one–night hospitalization. We assessed whether same day discharge (SDD) affects the short–term safety of robotic–assisted pelvic floor reconstructive procedures, relative to those who remain hospitalized overnight.

Methods: We retrospectively reviewed the charts of 14 women who underwent RAPFR procedures between May 2016 and September 2016. A same day discharge protocol for RAPFR was initiated in July 2016. To date, seven patients have undergone SDD. These patients were compared to the prior seven consecutive patients who stayed overnight. To evaluate short term safety, we reviewed the medical record for any unscheduled Cleveland Clinic emergency department (ED) and/or office visits within seven days of the RAPFR procedure.

Results: In our series, 92.8% (13/14) of patients underwent robotic assisted sacrocolpopexy (RASC). Only one patient (7.1%) had a different RAPFR procedure, a robotic assisted vaginal mesh excision. Concomitant robotic assisted supracervical hysterectomy (SCH) was performed in 28.5% (2/7) of the patients in the overnight group, whereas none of the SDD patients underwent SCH. There were no significant differences between groups with regards to age, surgery start time or duration, estimated blood loss, concomitant sling surgery, early complications, NSAID use, or comorbidities. Patients in the SDD group were no more likely than the overnight group to require an unscheduled ED or office visit in the early postoperative period.

Conclusion: Same day discharge after RAPFR procedures appears to be safe and feasible with no increase in unscheduled ED and/or office visits in the early postoperative period. RAPFR procedures were well–tolerated regardless of length of stay.
Juan M. Guzman–Negron, MD

Birthplace: San Juan, PR

Medical School: Universidad Central del Caribe

Residency: University of Puerto Rico

Fellowship: Cleveland Clinic

Plans after Fellowship: N/A
URODYNAMICS PARAMETERS AND OUTCOMES IN WOMEN VOIDING BY VALSALVA UNDERGOING SLING PLACEMENT

Casey Kowalik, MD1; Joshua A. Cohn, MD1; W. Stuart Reynolds, MD, MPH1; Melissa R. Kaufman, MD, PhD1; Roger R. Dmochowski, MD, MMHC, FACS1; Alexander Gomelsky, MD2

1Vanderbilt University Medical Center, Nashville, TN; 2Louisiana State University, Shreveport, LA

Presented By: Casey Kowalik

Introduction: Valsalva voiding is reported to be present in up to 50% of women and may contribute to voiding dysfunction following sling placement. Our objective was to compare urodynamic parameters in women with and without Valsalva voiding who underwent sling placement for stress urinary incontinence (SUI).

Methods: Women presenting with mixed urinary incontinence (MUI) or SUI who underwent urodynamic studies during evaluation for sling placement were included in the analysis. Patients with ≥grade 2 anterior prolapse or prior incontinence surgery were excluded. Valsalva voiding pattern was defined as elevated abdominal pressures during the voiding phase with no perceptible detrusor contraction. Urodynamic parameters were compared between women voiding by Valsalva (VV) and those voiding by detrusor contraction with no increase in abdominal pressure (DC). Voiding efficiency (VE) was calculated as the percentage of pre-void bladder volume voided. Short term retention was defined as the need for a foley or intermittent catheterization between 7-30 days post-operatively.

Results: We identified 752 women eligible for analysis of whom 66 (8.8%) voided by VV and 532 (70.7%) by DC. Age, body mass index, or rate of MUI versus SUI did not differ between the VV and DC groups. Compared with the DC group, women in the VV group had lower voided volumes (260±133 mL vs. 341±154 mL, p-value <0.0001) and lower VE (86.3±22% vs. 94.2±14%, p-value 0.007). Additionally, the VV group was more likely to have post void residual (PVR) ≥100 ml (13.6 v. 6.2%, p-value 0.026) and maximum urinary flow rate (Qmax) ≤ 12 ml/sec (46.4% v. 17.7%, p-value <0.0001). At an average follow up of 23.5 months there was no difference in SUI cure rates (VV: 87.9% v. DC: 79.1%, p=0.093), nor in rates of short term post-operative retention (VV:1.5% v. DC: 4.5%, p=0.251) or sling incision/urethrolysis (VV:0% v. DC: 1.5%, p=0.608) between the VV and DC groups.

Conclusion: In a population of women undergoing sling placement, VV had lower voided volumes and decreased voiding efficiency. PVR ≥100 ml and Qmax ≤ 12 ml/sec occurred more frequently in women voiding by Valsalva only. These observations may have clinical implications for pre-operative evaluation and counseling of patients prior to sling placement. However, in this cohort, there was no increased rate of short-term post-operative retention or subsequent sling incision/urethrolysis associated with Valsalva voiding.

Funding Source: None
Casey Kowalik, MD

**Birthplace:** Nashua, NH

**Medical School:** University of Virginia

**Residency:** Lahey Hospital & Medical Center

**Fellowship:** Vanderbilt University Medical Center

**Plans after Fellowship:** N/A
CAN URODYNAMIC PARAMETERS PREDICT SLING REVISION FOR VOIDING DYSFUNCTION IN WOMEN UNDERGOING SYNTHETIC MIDURETHRAL SLING PLACEMENT?

Brian J. Linder, MD; Emanuel C. Trabuco; John B. Gebhart, MD, MS; Christopher J. Klingele; John A. Occhino, MD, MS; Daniel S. Elliott, MD; Deborah J. Lightner, MD

Presented By: Brian J. Linder

Introduction: To evaluate the utility of urodynamic studies, performed before primary midurethral sling placement for stress urinary incontinence, in predicting the need for subsequent sling release for voiding dysfunction.

Methods: The health records of women managed with primary synthetic midurethral sling placement at Mayo Clinic (Rochester, Minnesota) from January 1, 2002, through December 31, 2012, were reviewed. The primary outcome was surgical sling release for postoperative voiding dysfunction (i.e. prolonged retention, elevated postvoid residual volumes with new voiding symptoms, or de novo onset or worsening of overactive bladder symptoms). Logistic regression models were used to evaluate associations between potential clinical risk factors and the primary outcome.

Results: Overall, 1629 women underwent primary synthetic midurethral sling placement during the study timeframe, including 1,081 patients (66%) who underwent a preoperative multichannel urodynamic evaluation. A sling release for voiding dysfunction was performed for 51 patients (3.1%) at a median of 1.9 months postoperatively (interquartile range, 1.3-9.3 months). Patients undergoing sling release were significantly more likely to have had retropubic sling placement ($P=.003$) and concomitant prolapse surgery ($P=.005$). On univariate analysis, no urodynamic parameters were associated with the risk of sling release; evaluated parameters included peak flow rate ($P=.20$), postvoid residual volume ($P=.37$), voiding without detrusor contraction ($P=.96$), and detrusor pressure at maximal flow ($P=.23$).

Conclusion: Sling release for voiding dysfunction was rare in our cohort. No urodynamic parameters were associated with the risk of sling release.
Brian J. Linder, MD

**Birthplace:** Montreal, Canada

**Medical School:** George Washington University

**Residency:** Mayo Clinic, Urology

**Fellowship:** Mayo Clinic (Rochester, MN)

**Plans after Fellowship:** Faculty, FPMRS, Mayo Clinic
POSTERIOR COMPARTMENT PROLAPSE OCCURRENCE AFTER ANTERIOR VAGINAL WALL SUSPENSION

Rena D. Malik, MD; Alana L. Christie, MS; Philippe E. Zimmern, MD, FACS, FPRMS
University of Texas Southwestern Medical Center, Dallas, TX
Presented By: Rena D. Malik

Introduction: To identify posterior compartment prolapse occurrence in women undergoing anterior vaginal wall suspension (AVWS).

Methods: A prospectively maintained, institutional review board approved surgical prolapse database was reviewed for women who underwent AVWS for any degree of anterior compartment prolapse with minimum of 6-month follow-up. Demographic data, smoking status, parity, and uterine status were collected. The primary outcome was need for delayed posterior compartment prolapse repair.

Results: A total of 481 women met inclusion criteria with a mean age of 64.7±10.7 years, mean BMI of 26.1±5.9 kg/m², and a mean parity of 2.5±1.4. Fifty-eight women (12.1%) had uterine-sparing AVWS, 132 (27.4%) had concomitant hysterectomy and 291 (60.5%) had hysterectomy prior to AVWS. Eighty-eight (18.3%) required delayed posterior compartment repair with mean follow-up of 6.6±4.3 years. Of those 88 patients, Sixty-one (69%) had abdominal reconstruction, whereas 27 (31%) were repaired vaginally. Seventy-five percent underwent repair within 3.5 years after AVWS. Women who had uterine-sparing AVWS were less likely than those who had concomitant or prior hysterectomy to require posterior compartment repair (8.6% vs. 20.5% & 19.2%, p=0.121) (Figure 1). Of those undergoing hysterectomy, vaginal or abdominal approach was not associated with delayed posterior compartment prolapse surgery (p=0.284).

Conclusion: At long-term follow up, less than 20% of women undergoing AVWS will require posterior compartment prolapse repair. Uterine-sparing AVWS may be associated with a reduced risk of delayed posterior compartment prolapse repair.

Funding Source: None

Figure 1: Post AVWS posterior compartment prolapse repair based on uterine status
Rena D. Malik, MD

Birthplace: Buffalo, NY

Medical School: New York University School of Medicine

Residency: University of Chicago Medicine

Fellowship: UT Southwestern Medical Center

Plans after Fellowship: N/A
SEXUAL FUNCTION IN PATIENTS UNDERGOING POSTERIOR COMPARTMENT REPAIR COMPARED TO THOSE UNDERGOING ANTERIOR OR APICAL REPAIRS

Laura Nguyen, MD1; Priyanka Gupta, MD1; Natalie Gaines, MD1; Kim A. Killinger, MSN1; Judith A. Boura, MS2; Larry T. Sirls, MD2
1Beaumont Health, Royal Oak, MI; 2Beaumont Health, Oakland University William Beaumont School of Medicine, Royal Oak, MI
Presented By: Laura Nguyen

Introduction: Studies have reported increased dyspareunia in patients that undergo transvaginal posterior compartment pelvic organ prolapse (POP) repair. We compare sexual function in patients with posterior repairs compared to other compartments at one year after transvaginal prolapse repair.

Methods: Women from our prospective, longitudinal prolapse database that had transvaginal repair of POP between 12/19/2008 through 6/4/2014 were reviewed. Patients were divided into two cohorts: those that had a posterior compartment repaired (either alone or concomitantly) and those who had anterior +/- apical compartment repair without posterior repair. Patients were assessed with the POP/Urinary Incontinence Sexual Questionnaire (PISQ−12) pre- and post-operatively at six months and one year.

Results: 130 women were identified. 50 women had a posterior repair (PR+). 28 were combined with anterior +/- apical repair, and 22 only had a posterior repair. 80 women had anterior +/- apical repair without posterior repair (PR−). There was no significant difference in mean age (PR+ 63, PR− 64 years, p=0.66) or placement of transvaginal mesh (PR+ 56%, PR− 73%). Being sexually active at baseline was similar (PR+ 48%, PR− 50%) and remained similar at six months (PR+ 52%, PR− 57%) and one year (PR+ 53%, PR− 47%). Answers to PISQ question #5 showed that dyspareunia was not different at baseline (PR+ 23%, PR− 10%, p = 0.26), six months (PR+ 12% PR− 13%, p = 1.0) or one year (PR+ 12%, PR− 17%, p = 1.0). Baseline PISQ scores were similar and remained so at six months and one year (Table 1). PISQ scores improved significantly in both groups over time (PR+ 0.0013, PR− 0.0014).

Conclusion: At six-month and one-year follow-up, women with posterior compartment repair have similar rates of sexual activity and dyspareunia, and similar improvement in PISQ scores as women with anterior or apical compartment repairs.

Funding Source: Ministrelli Program for Urology Research and Education (MPURE)
Laura Nguyen, MD

**Birthplace:** Steinbach, MB, Canada

**Medical School:** Queen's University

**Residency:** University of Chicago

**Fellowship:** Vanderbilt University Medical Center

**Plans after Fellowship:** Einstein Medical Center, Philadelphia, PA
Introduction: Abdominal sacrocolpopexy with synthetic mesh is the gold standard for apical pelvic prolapse. There is scarce data on managing patients who require removal of such mesh for vaginal pain. The approach to remove the mesh depends on the patient’s symptoms; however, for complete removal a laparotomy is often utilized. On review of the available literature, a few case reports describe a laparoscopic approach for mesh erosion. We describe a case of robot assisted laparoscopic excision of sacrocolpopexy mesh in a patient presenting with apical vaginal pain.

Methods: The patient is a 75-year-old female with primary complaint of vaginal and pelvic pain after a laparoscopic hysterectomy and sacrocolpopexy with polypropylene mesh. Soon after surgery she complained of significant vaginal and lower abdominal pain. Extensive evaluation for sources of pain was negative. Mesh removal was planned. After docking the robot, the adhesions were taken down and the sigmoid retracted medially. The posterior peritoneum is exposed and then incised along the path of the mesh. Permanent suture encountered was grasped and used as a landmark to aid in dissection. An assistant remained between the patient’s legs to mobilize the vagina and help delineate landmarks. First the proximal end of the mesh was separated from surrounding scar tissue and cut from its attachment to the sacrum. The freed proximal end was then grasped and retracted to aid in dissection. Adhesions posterior to the mesh and close to large bowel were taken down until the cul de sac is visualized. The bladder was then mobilized off the anterior vagina and anterior mesh arm. The anterior arm was then carefully dissected from the vagina, the posterior arm was also dissected in a similar manner. Once all sutures were cut, the mesh arms could be bluntly separated off the vagina and removed from the abdomen. The bladder was then filled to ensure there was no inadvertent cystotomy.

Results: The patient was discharged home same day and had no post-operative complications. At six weeks follow up, the patient’s pelvic and vaginal pain and hematuria had resolved. Pelvic exam revealed slight apical decent but C point at -5.

Conclusion: Robot assisted excision of sacrocolpopexy mesh is safe and feasible in the appropriately selected patient with minimal morbidity. This could be considered an option in patients presenting with vaginal pain or extrusion and avoids the need for laparotomy.
Henry T. Okafor, MD

Birthplace: Lagos, Nigeria

Medical School: Howard University

Residency: SUNY-Upstate Medical University

Fellowship: Cleveland Clinic

Plans after Fellowship: Academic, Chattanooga TN
OUTCOMES OF TREATMENT OF STRESS URINARY INCONTINENCE ASSOCIATED WITH FEMALE URETHRAL DIVERTICULA: A SELECTIVE APPROACH

Alyssa K. Greiman, MD; Lauren Rittenberg, MD; Drew A. Freilich, MD; Ross A. Rames, MD; Ahmed M. El-Zawahry, MD, MSC; Michelle A. Koski, MD; Eric S. Rovner, MD

1Department of Urology, Medical University of South Carolina, Charleston, SC; 2Urology Specialists of Atlanta, Atlanta, GA; 3Department of Urology, Southern Illinois University School of Medicine, Springfield, IL; 4Kaiser Permanente Urology, San Diego, CA

Presented By: Lauren Rittenberg

Introduction: Female urethral diverticula (UD) may present with a variety of different symptoms including stress urinary incontinence (SUI). Surgical repair of SUI may be done concomitantly with urethral diverticulectomy. However, some surgeons may be reluctant to repair SUI at the time of urethral diverticulectomy due to the additional surgical time and potential morbidity of anti-incontinence surgery. We assessed surgical outcomes of the concomitant treatment of SUI at the time of transvaginal urethral diverticulectomy (TVUD) based on a selective approach.

Methods: Following Institutional Review Board (IRB) approval, we identified patients with a UD and SUI who underwent TVUD between July 2004 and January 2016. SUI was documented before and after surgery using subjective and objective parameters. Autologous pubovaginal slings (APVS) were used selectively based on surgeon and patient preference. Postoperatively, the majority of patients were imaged prior to catheter removal with voiding-cystourethrogram.

Results: A total of 61 patients underwent surgical treatment of urethral diverticula. There were 39 patients with UD and concomitant SUI. Mean age was 53 years (range 34-77). There were 22 Caucasians, 17 African American patients. Mean follow-up was 16.2 months (range 1-72 months). There were 24 patients (62%) with SUI that underwent concomitant APVS. Of these 24 patients, 10 (42%) had prior SUI surgery. There was resolution of SUI in 20 of 24 patients (83%) who underwent a simultaneous APVS compared to 8 of 15 patients (53%) who underwent TVUD without APVS (two patients lost to follow-up). One patient out of 22 developed de-novo SUI following TVUD. Surgery resulted in the improvement or resolution of the majority of preoperative symptoms including recurrent urinary tract infection (UTI) (82% vs. 15%), dyspareunia (64% vs. 8%), and urgency (56% vs. 13%) (preoperative vs. postoperative). Complications included two patients with prolonged urinary retention following APVS requiring sling lysis. There were two patients with a recurrent UD, one of which required repair 18 months post-operatively.

Conclusion: Female UD is often associated with SUI. Concomitant surgical treatment of UD and SUI often results in satisfactory control of bothersome SUI as well as other urinary symptoms such as UTI, dyspareunia and urgency. Treatment of SUI with APVS when undergoing TVUD is feasible with satisfactory outcomes. The decision whether or not to perform concomitant APVS at time of TVUD should be made on an individual basis after appropriate counseling.
Lauren Rittenberg, MD

**Birthplace:** Bay Shore, NY

**Medical School:** Philadelphia College of Osteopathic Medicine

**Residency:** Albert Einstein Hospital

**Fellowship:** Female Urology/Urogynecology

**Plans after Fellowship:** Private Practice in Tucson, Arizona
Introduction: Robotic-assisted radical cystectomy (RARC) for women with localized bladder cancer is increasingly common with little data regarding late complications specific to pelvic floor reconstruction.

Methods: We present a new entity of pending evisceration from lack of vaginal wall and levator supporting structures after RARC.

Results: Four patients underwent RARC, urethrectomy, anterior vaginectomy, node dissection and ileal conduit by three surgeons. The extent of vaginal wall removal (2–6cm) varied by oncologic stage. Initial reconstruction included folding of the posterior cuff, side-to-side closure, and suspension to parietal peritoneum. Prolapse was noted 183 (22–390) days post-operatively. All patients had enteroceles protruding outside of the introitus, minimal remaining posterior wall, and absent anterior wall with a well epithelialized peritoneal sac as the only barrier to evisceration. All patients underwent enterocele repair and colpocleisis with follow-up of 435 (99–683) days. Additional procedures included perineorrhaphy in one patient, pelvic floor reconstruction using biologic graft and rotational labial flap in one patient, and uterosacral suspension, vicryl mesh closure and posterior vaginal wall flap in one patient. Two patients developed recurrence, both within 30 days of their repair. One initially underwent colpocleisis alone and was repaired with repeat colpocleisis that subsequently failed. The other underwent vicryl mesh closure initially and was repaired with biologic mesh, sacrospinous suspension and repeat colpocleisis. She subsequently recurred around the clitoris and underwent polypropylene mesh placement and repeat colpocleisis with no further recurrence 60 days post-operatively.

Conclusion: This newly described complication is uniquely related to RARC. Unlike typical prolapse seen after cystectomy, lack or vaginal tissues and supporting structures, make repair technically challenging. Successful surgical techniques include colpocleisis with polypropylene or biologic graft. Preventative maneuvers during RARC may include vaginal sparing, avoidance of vaginal devascularization, minimal removal of anterior vaginal wall, or rectus flap vaginal reconstruction.
Melissa T. Sanford, MD

**Birthplace:** San Antonio, TX

**Medical School:** UTHSCSA

**Residency:** UCSF

**Fellowship:** USC

**Plans after Fellowship:** N/A
LOW MORBIDITY ASSOCIATED WITH REPAIR OF CYSTOCELE USING CADAVERIC FASCIA AND VICRYL MESH

Nicole Szell, DO
Presented By: Nicole Szell

Introduction: To determine the efficacy and morbidity associated with cystocele repair using absorbable vicryl mesh and cadaveric fascia lata.

Methods: From 2008 – 2016, we identified 200 women who were evaluated for anterior compartment prolapse. Degree of cystocele was based on the Baden-Walker 4-point classification system. Cystoceles graded 3 or 4 underwent repair with absorbable vicryl mesh and cadaveric fascia. Cystoceles graded 1 or 2 underwent repair only with vicryl mesh. The most common symptoms of women presenting with a cystocele included; sensation of a vaginal bulge (56%), urinary frequency (4 or more episodes of an intense need to urinate during waking hours) (53%), and urinary urgency (45%). The transvaginal surgical technique consisted of a T-shaped anterior vaginal wall incision, dissection of the vaginal wall from the perivesical and pubocervical fascia, and reduction of the central defect with vicryl mesh buried over perivesical fascia. Lateral and central defect support was created using an appropriate size of cadaveric fascia lata secured in place with absorbable sutures.

Results: Complete data was available in 89 women who underwent repair by a single surgeon. Mean follow up is 3.5 years. Mean age for the patients examined is 70 years old. The following concurrent procedures were performed: synthetic mid-urethral sling (31%), posterior/apical repair (29%), or hysterectomy (4%). Of the 89 women who underwent surgical repair, 5 of 89 (5.6%) had recurrent cystocele within two years of their surgical correction. The recurrent cystoceles were all either Grade 1 or 2. De novo urge incontinence was noted in 20%.

Conclusion: Cystocele repair with absorbable vicryl mesh with or without cadaveric fascia is a highly successful technique. In the era of medico-legal concerns over synthetic mesh, the described technique is a viable option without associated morbidity. A larger series with prospectively captured data using validated instruments is ongoing.
Nicole Szell, DO

Birthplace: Cleveland, Ohio

Medical School: Michigan State University College of Osteopathic Medicine

Residency: St. John Providence Urological Surgery

Fellowship: Bladder Health and Reconstructive Urology Institute

Plans after Fellowship: N/A
SUFU 2017 Fellows Forum
Wednesday, March 1, 2017
1:30 p.m. – 5:45 p.m.
*Not CME Accredited

Please Note: Sessions One & Two are held concurrently.

Breakout Group Two
Location: Arroyos C
Moderator: Michael E. Albo, MD

3:35 p.m. – 3:44 p.m. Marian Acevedo Alvarez, MD
3:44 p.m. – 3:53 p.m. Sarah A. Adelstein, MD
3:53 p.m. – 4:02 p.m. Megan Brady, MD
4:02 p.m. – 4:11 p.m. Elodi Dielubanza, MD
4:11 p.m. – 4:20 p.m. Amy D. Dobberfuhl, MD
4:20 p.m. – 4:29 p.m. Bilal Farhan, MD
4:29 p.m. – 4:38 p.m. Dianne Glass, MD, PhD
4:38 p.m. – 4:47 p.m. Catherine Harris, MD
4:47 p.m. – 4:56 p.m. Dana Kivlin, DO
4:56 p.m. – 5:05 p.m. Jessica Lloyd, MD
5:05 p.m. – 5:14 p.m. Laura M. Martinez
5:14 p.m. – 5:23 p.m. Dena Moskowitz
5:23 p.m. – 5:32 p.m. Daniel Hoffman, MD

5:32 p.m. – 5:45 p.m. Wrap Up/Q & A
OVARIECTOMIZED MICE PERSIST WITH OVERACTIVE VOIDING BEHAVIOR AFTER REPEATED INTRAVESICAL LIPOPOLYSACCHARIDE (LPS) EXPOSURE

Marian Acevedo Alvarez, MD; Lery Alvarez-Lugo, MS; Ming Lu, MD; Toby C. Chai, MD
Yale, New Haven, CT
Presented By: Marian Acevedo Alvarez

Introduction: A "true" urinary tract infection (UTI) is when pathologic host responses occur, whether biochemical, immunologic or behavioral, in response to uropathogenic bacteria such as E. coli (UPEC). Bladder behavioral responses include urgency, frequency, and dysuria/pain. Intravesical LPS has been used as an UPEC surrogate to study host responses. However, measurement of awake animal voiding behavior after LPS has not been previously reported to our knowledge. We used voiding spot assays (VSA) on filter paper to quantitate voiding behavior. Estrogen has been shown to modify host responses in UTI; therefore, we hypothesized that ovariectomized (OVX) mice would have altered bladder behavior compared to sham, non-OVX mice.

Methods: Female C57BL6/J mice were randomized to sham (n=10) or OVX (n=10) surgery. VSA were performed at pre-surgery, four weeks post-surgery (just prior to LPS) and after each of three consecutive days of intravesical inoculation of 150 μl of LPS (1 mg/mL). LPS was left to dwell for increasing time each day, 30 min on first day, 45 min on second day and 60 min on third day. Animals were euthanized at the end and bladders were processed with Gomori trichrome staining.

Results: Fig 1 shows change in total number of urine spots (compared to baseline) at the 4 different time points. OVX itself did not change voiding behavior. However, OVX animals exhibited persistent overactive voiding behavior at days 2 and 3 (Fig 1) of LPS, despite similar total voided volumes (data not shown). Gomori trichrome staining showed that OVX mice had flattened rugae (Fig 2A) which is not seen in sham mice (Fig 2B).

Conclusion: After LPS, OVX mice persisted with an overactive voiding behavior whereas the sham mice almost normalized their voiding behavior. Estrogen appears to protect against LPS induced bladder changes, both functionally and anatomically (based on the trichome staining images). Further investigations using this model will shed light on how estrogen protects the host against UPEC.

Clinical relevance: LUTS / Voiding Dysfunction
Marian Acevedo Alvarez, MD

**Birthplace:** Bayamon, Puerto Rico

**Medical School:** N/A

**Residency:** OB/GYN Program at New York University School of Medicine

**Fellowship:** Yale

**Plans after Fellowship:** N/A
OPTIMIZING LEAD PLACEMENT DURING STAGED SACRAL NEUROMODULATION (SNM): FACTORS ASSOCIATED WITH PROGRESSION TO STAGE 2

Sarah A. Adelstein, MD; Dena Moskowitz, MD; Kevin T. Gioia, MD; Alvaro Lucioni, MD; Kathleen C. Kobashi, MD, FACS; Una J. Lee, MD, FPRMS
Presented By: Sarah A. Adelstein

Introduction: Current practice at our high-volume tertiary referral hospital aims to optimize lead placement at the superior medial aspect of the S3 foramen and achieve lead thresholds under 2mA for all electrodes sites. This analysis will summarize our experience, and evaluate the impact of baseline factors on progression to stage 2 SNM implant.

Methods: This is a cross sectional analysis of all stage 1 lead placement SNM cases from August 2014-October 2016. After a trial period, patients received a stage 2 SNM pulse generator if voiding diaries reflected ≥50% symptom improvement. Otherwise, the lead was removed. We performed univariate analysis on demographic, clinical and intraoperative factors comparing patients who progressed to stage 2 with those whose leads were removed after the trial. Multivariate analysis with logistic regression was performed.

Results: 89% of the total 108 stage 1 lead placements progressed to stage 2. 91% of subjects were female. Cumulative indications for SNM were 95% refractory urgency/incontinence, 16% urinary retention, and 29% fecal incontinence. Several factors were associated with progression to stage 2 implant (Table 1). Multivariate analysis revealed that prior failed 3rd line therapy was independently associated with lead removal (OR 17, CI 2.9-132, p=0.003), and there was a trend toward significance for pelvic pain (OR 4.8, CI 0.9-27, p=0.06).

Conclusion: Optimized lead placement technique can achieve motor and sensory thresholds <2mA in all electrodes and 89% conversion rate to stage 2 SNM. Our analysis was limited by small lead removal group size, but history of pelvic pain and prior SNM implant appear to be associated with lead removal after the 2 week trial.
Sarah A. Adelstein, MD

Birthplace: Fairfax, VA

Medical School: NYU

Residency: NYU

Fellowship: Virginia Mason

Plans after Fellowship: N/A
FEASIBILITY OF MEASURING BLADDER URINE OXYGEN TENSION

Megan Brady, MD
Presented By: Megan Brady

Introduction: Bacteria and their hosts are highly dependent on environmental conditions. The objective of this study was to determine the feasibility of measuring women’s bladder urine oxygen tension (BUOT) in a clinical setting.

Methods: Female patients who were willing to undergo transurethral catheterization at their urogynecology clinic visit were eligible for enrollment. A non-invasive flow-through oxygen sensor with a compact fiber optic oxygen transmitter (Precision Sensing, Germany) was attached by stop-cock to a standard 14F straight catheter. The catheter was inserted into the urethra and as the urine flowed by the sensor, the oxygen tension readings were recorded.

Results: Thirty women with a mean age of 60 years (range 27-91) were enrolled in the study. The changes that we made in the procedure were 1.) Measuring BUOT as mm Hg instead of % oxygen, 2.) Using the subject’s oral temperature as a surrogate for urine temperature, by which oxygen tension readings are compensated 3.) Measuring BUOT at 3 to 5 second intervals. We observed that the BUOT decreased steadily as the “oxygen contamination” in the measuring system was washed away by the subject’s urine. We observed that BUOT plateaued over time (Figure 1). By Patient 20, we determined that a bladder urine volume of at least 50 mL was required to obtain BUOT values that consistently plateaued. Seventeen women with a mean age of 60 had BUOT values that were deemed accurate. The mean BUOT was 28.14 mmHg and ranged from 9.18 to 42.9 mm Hg. These results are consistent with historical values for BUOT using more invasive oxygen sensing devices that cannot be used in a clinical setting.

Conclusion: This study demonstrates that BUOT can be measured in a clinical setting and that the values obtained are consistent with historical values.
Megan Brady, MD

Birthplace: Napa, CA

Medical School: Wake Forest University

Residency: Virginia Commonwealth University

Fellowship: Loyola

Plans after Fellowship: N/A
THE VALUE OF URODYNAMICS PRIOR TO SACRAL NEUROMODULATION IN MEN

Elodi Dielubanza, MD
Presented By: Elodi Dielubanza

Introduction: Sacral neuromodulation (SNM) is an effective therapy for non-obstructive urinary retention, refractory urgency/frequency and urgency incontinence, however it may be underutilized in men. There is a dearth of literature on SNM in men, as most male lower urinary tract symptoms (LUTS) research focuses on medical therapy and bladder outlet procedures, offering little guidance about SNM in men. To what extent UDS can yield diagnostic clarity in male LUTS and its role in predicting SNM success in men is unknown. Herein, we analyze how UDS findings relate to SNS utilization in men.

Methods: A retrospective review of men undergoing SNM procedures from 2011-2015 at our institution was performed. Demographics, comorbidities, prior urologic treatments, SNM indication, and SNM utilization were collected. Patients were stratified according to UDS (+UDS) ≤12 months before SNM and no UDS testing (-UDS). Descriptive statistics characterized the groups, T-test or chi-square tests were used where appropriate, and logistic regression was used to identify clinical and UDS parameters related to SNM outcomes.

Results: 56 men underwent SNM therapy and 28 had UDS within the prior year. UDS+ and UDS- men were similar in age and co-morbid conditions. On average, +UDS men had a greater BMI (30.4±6.5 v 27.3±4.6, p 0.045). Rates of prior transurethral prostate procedures were not significantly different (17.9% v 25%) between the groups. Most (N=53) men underwent staged implant, though 3(+UDS N=2, -UDS N=1) had peripheral nerve evaluation (PNE). All PNE trials were successful, while rates of Stage 1 success (80.8% v 63.0%, p 0.22) and Stage 2 completion (95.2% v 94.1%, p 1.00) did not differ between +UDS or -UDS. Device revision (21.4% vs. 25%, p 0.75) and explant (17.9% v 14.5%, p 1.00) rates also did not differ by +UDS or -UDS. No stress urinary incontinence (N=0) was noted on UDS in any patient, but detrusor overactivity was present in 50% (N=14) with urgency urinary incontinence in 25% (N=7). UDS findings of obstruction (N=1), poor compliance (N=1), and hypocontractility (N=1) were rare. Rates of Stage 1 success, Stage 2 completion, device revision, and device explantation did not differ in the presence or absence of UDS-proven pathology.

Conclusion: Sacral nerve stimulation is a feasible treatment for men with refractory lower urinary tract symptoms. Neither the performance of urodynamics nor the presence of urodynamically-proven pathology was associated with greater likelihood of progression to stage 2, device revision or explant. Our findings suggest that SNM may be safely and effectively utilized in men without preoperative urodynamics.
Elodi Dielubanza, MD

**Birthplace:** Los Angeles, California

**Medical School:** UCLA

**Residency:** Northwestern University

**Fellowship:** Cleveland Clinic

**Plans after Fellowship:** Brigham and Women’s Hospital, Department of Urology
SACRAL NEUROMODULATION IN CALIFORNIA FROM 2005 TO 2011: WHAT ARE THE REAL-WORLD SUCCESS RATES?

Amy D. Dobberfuhl, MD¹; Amandeep Mahal, MD²; Craig V. Comiter, MD¹; Christopher S. Elliott, MD, PhD¹
¹Stanford University, Dept. of Urology, Stanford, CA; ²Stanford University, Dept. of Obstetrics and Gynecology, Stanford, CA
Presented By: Amy D. Dobberfuhl

Introduction: Sacral neuromodulation (SNS) is approved by the Food and Drug Administration for the treatment of refractory urge urinary incontinence, frequency/urgency, idiopathic urinary retention and fecal incontinence. Prior to placement of an implantable pulse generator, all patients must undergo a trial stimulation to ensure improvement in their condition. The success rate for staged SNS implantation of a pulse generator (defined as > 50% improvement) varies greatly in the literature (ranging from 40 to 90%). We sought to determine success rates in California using a statewide registry.

Methods: We accessed non–public records from the California Office of Statewide Health Planning and Development (OSHPD) Ambulatory Surgery Database for the years 2005 to 2011. This dataset captures all non–federal ambulatory surgical visits within the state. Appropriate Current Procedural Terminology, 4th edition (CPT) procedure codes and International Classification of Disease, 9th edition (ICD–9) diagnosis codes were used to analyze all SNS procedures and their indication. Patients were followed longitudinally using unique patient record linkage numbers. Staged success was defined as the proportion of patients who received a stage 2 SNS generator implantation after their stage 1 tined lead trial.

Results: We identified 4,098 patients with SNS procedure codes. After excluding patients who only underwent generator exchange, lead revision or lead explantation, our final cohort included 2,765 patients. The majority of patients were female (77%), over 60 years of age (68%), Caucasian (74%) and had Medicare (60%). A total of 1,396 patients underwent a stage 1 trial of tined–lead implantation, of which 962 subsequently underwent stage 2 pulse generator placement (staged success rate of 69%). Staged success rates were 72% for urge urinary incontinence, 69% for urgency/frequency, 57% for urinary retention, 68% for interstitial cystitis and 67% for neurogenic bladder. Success rates were similar after stratification by race/ethnicity and insurance coverage.

Conclusion: While the success rates for staged SNS implantation in the state of California were less than that observed in many single center academic series; they are better than previously reported for Medicare patients, and suggestiv e of a success rate of greater than two thirds.

Funding Source: Valley Medical Care Foundation
Amy D. Dobberfuhl, MD

Birthplace: North Carolina

Medical School: University of North Carolina at Chapel Hill

Residency: Albany Medical College

Fellowship: Stanford University

Plans after Fellowship: Stanford University
Introduction: This study aims to express urinary MCP-1 level in OAB patients before and after treatments, and to correlate the level of MCP-1 with severity of symptoms.

Methods: This was a prospective, single-blind study including 26 OAB patients (either newly diagnosed or off medications for two weeks). Each patient received the first visit different OAB treatments (anticholinergic, B3 agonist and or neuromodulations). Two midstream urine samples were collected and tested for MCP-1 using ELISA; one before and the second after 12 weeks of treatments. Symptomatic responses to therapy were evaluated using different validated OAB questionnaires [Patient Perception Bladder Condition (PPBC) & Overactive Bladder Quality (OAB-q)]. MCP-1 level were normalized to the levels of creatinine. Descriptive statistics were performed to examine MCP-1 level before and after different using Wilconxon test. Post-treatment MCP1- levels compared to 12 healthy subjects as control using Mann-Whitney U test.

Results: The mean age of enrolled 26 patients was 69.3yrs. Females accounted for 62.5% of patients. In simple correlation, the degrees of symptoms was significantly associated with the pre-treatment level of MCP-1 (coefficient=.844, p<.000 in PPBC and coefficient=.869, p<.000 in OABq, Figure 1). Multivariate analysis using linear regression model including age, gender and MCP-1 demonstrated that MCP-1 was significantly associated with OABq (p=.02) and PPBC (p=.03). Twelve weeks after treatment, MCP-1 level was dropped significantly (p<.000), and it was similar with control group (p=0.376, Table). After treatment, the symptom improved significantly both in OAB-q and PPBC (Figure 2).

Conclusion: Based on a strong association with the degree of symptom, urinary MCP-1 can be used to identify patients and monitor the progression of OAB.

Tab 1: Comparative table between pre-treatment, post-treatment and control.
a: Wilconxon test (comparison between pre and post-treatment groups)
b: Mann-Whitney U test((comparison between post-treatment and control groups)

<table>
<thead>
<tr>
<th></th>
<th>MCP1</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>Median IQR (IQR) P value</td>
</tr>
<tr>
<td>Pre-treatment 26 154.8 97.9 280.4 &lt;.000 a</td>
<td></td>
</tr>
<tr>
<td>Post-treatment 26 29.3 12.0 114.7</td>
<td></td>
</tr>
<tr>
<td>Control 12 60.0 30.0 85.5 0.376 b</td>
<td></td>
</tr>
</tbody>
</table>
Bilal Farhan, MD

Birthplace: Iraq

Medical School: AL Qadisiyiah Medical School

Residency: King Abdullah University Hospital

Fellowship: University Of California, Irvine

Plans after Fellowship: N/A
THE EFFECT OF MIXED URINARY INCONTINENCE ON CATHETERIZATION RATE AFTER INTRADETRUSOR ONABOTULINUMTOXINA, IS STRESS INCONTINENCE PROTECTIVE?

Dianne Glass MD, PhD,* Daniel Hoffman, MD,* Ekene Enemchukwu MD, MPH,† Nirit Rosenblum, MD,* Benjamin Brucker, MD,* Victor Nitti, MD*
*Division of Female Pelvic Medicine and Reconstructive Surgery, New York University Langone Medical Center, New York, New York; † Department of Urology, Stanford University, Palo Alto, California

Introduction: Intradetrusor OnabotulinumtoxinA (ONA) is frequently used to treat urgency urinary incontinence. One possible side effect is incomplete bladder emptying requiring the temporary use of clean intermittent catheterization (CIC). The goal of this study is to examine if patient reported stress urinary incontinence (SUI) had an effect on the rate of CIC.

Methods: A retrospective chart review of patients receiving ONA in the New York University Urology faculty practice between 5/2010 and 9/2016 were reviewed. Unique subjects were identified by CPT and/or J codes for intradetrusor injection of ONA. Charts were reviewed for demographic information, past medical and surgical history, symptoms of SUI (patients with SUI had urgency predominate mixed incontinence), post void residual (PVR) before and after first ONA injection and if catheterization was required after their first ONA injection. Subjects with a diagnosis of neurogenic bladder or a history Multiple Sclerosis, Parkinson’s disease, Cerebral Vascular Accident with residual deficits, Spinal Cord injury, spinal surgery, urethral stricture, baseline catheterization requirement, or prior anti-incontinence surgery were excluded from the analysis. In general, CIC was recommended for patients with a PVR 200-349 ml with symptoms or for a PVR ≥ 350 ml with or without symptoms. The association between SUI and the need CIC after ONA was examined using a Fischer’s Exact Test.

Results: 265 charts were identified as having undergone intradetrusor ONA injection. A total of 115 subjects were are included in the analysis. Subject age at the time of injection ranged from 20-95 years with a mean age of 67.0 +/- 17.2 years. Subjects with SUI had a mean age of 72.6 +/- 10.1 years. 61.7% of subjects were female. Subjects with and without SUI had similar pre injection PVRs, 28.3 ml +/- 47.2 ml and 37.7 ml +/- 46.4 ml, respectively. The overall total rate of CIC was 14.7%. There were 85 patients without SUI and the CIC rate was 18.8% compared to a CIC rate of 3.3% for the 30 subjects reporting symptoms of SUI (P=0.041).

Conclusion: In this retrospective chart review, subjects with SUI demonstrated a significantly lower rate of incomplete bladder emptying requiring CIC. This may be due to a decrease in outlet resistance associated with SUI. As we gain more experience with the use of ONA in varied clinical settings and patient populations we can look for populations with extremely low rates of CIC.
Dianne Glass, MD, PhD

**Birthplace:** Columbus, Ohio

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

**Residency:** Baylor College of Medicine OB/GYN

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

**Plans after Fellowship:** N/A
ASSESSING THE RELATIONSHIP BETWEEN CNS DISEASE BURDEN, URINARY SYMPTOMS AND URODYNAMIC FINDINGS IN PATIENTS WITH MULTIPLE SCLEROSIS UTILIZING MRI SEGMENTATION POST-PROCESSING

Jessica Eastman, BA, BS; Catherine Harris, MD; Alana Christie, MS; Ryan Hutchinson, MD; Ben Wagner; Joseph A. Maldjian, Marco Pinho, Gary E. Lemack, MD
Dallas, TX
Presented By: Catherine Harris

Introduction: Recent advances in MRI techniques allow more accurate determination of disease load in Multiple Sclerosis (MS) patients. This study was undertaken to assess the relationship between disease burden, lower urinary tract symptoms (LUTS) and urodynamic (UD) findings.

Methods: An initial cohort of 30 patients was selected from a database of 613 MS patients prospectively enrolled in our institutional NGB database. Patients with complete data sets (UD testing, Urogenital Distress Inventory (UDI-6) scores, and complete demographic information) were selected for initial analysis. Routine brain MRI images (T2-weighted fluid attenuated inversion recovery - FLAIR) were segmented by a neuroradiologist utilizing a level tracing supervised semi-automated tool with generation of masks containing an overall count (OC) of abnormal appearing voxels (Figure 1). Volume of disease burden (VDB in cm^3) was obtained by multiplying OC by voxel dimensions.

Results: The mean age was 57, 80% were female. Mean time since diagnosis was 17 years, 66.7% had relapsing remitting MS. Mean MCC was 395.4 ml (45-776 ml). Overall, 43.3 % had a PVR > 100 ml, 53.5% had DO, 30% had DOI 53.5% had detrusor sphincter dyssynergia (DSD), and 10% had altered compliance. Mean UDI-6 score was 9. The MRI mean disease burden was 24 cm^3 (range 0.82 - 119.01). Patients with low disease burden (<10cc) had DO 85.7% of the time (6/7 patients) versus those with high disease volume (>10cc) who had DO 43.5% of the time (10/23 patients), p=0.050. Those with low disease burden had lower DO amplitude (29.5 vs. 51.1 cm H2O, p=0.61). Altered compliance was not found in patients with low disease burden. No significant differences in PVR, DSD, or questionnaire scores were noted based on total disease burden. After review of 176 discrete CNS areas, there were 12 with multiple UDS and QOL parameters that approached significance involving regions such as the pons, midbrain, and brainstem.

Conclusion: Volume and location of CNS burden in MS may be useful in predicting some aspects of LUT dysfunction. Current efforts are under way to expand the patient cohort and focus on the areas of interest identified in this study to refine the relationship between CNS lesions and voiding abnormalities in MS patients.
Catherine Harris, MD

Birthplace: Iowa City, Iowa

Medical School: UT San Antonio

Residency: Vanderbilt

Fellowship: UT Southwestern

Plans after Fellowship: Colorado Springs, CO
Introduction: Peripheral nerve evaluation (PNE) is a minimally invasive procedure, performed in the clinic under local anesthesia, to determine eligibility for permanent InterStim implantation in patients experiencing significant urinary urgency, frequency, urge incontinence, or non-obstructive urinary retention. We sought to determine whether there is a difference in conversion rates to full implantation between patients undergoing PNE with and without the use of fluoroscopy.

Methods: A retrospective review was performed in two consecutive series of patients undergoing PNE with and without fluoroscopy use. Temporary leads were placed along the S3 nerves bilaterally. Physical landmarks were used to determine the location of needle insertion. When used, fluoroscopy confirmed temporary lead location in the S3 foramina bilaterally. For all patients, both verbal feedback (vibration or tapping sensation in the scrotum, vagina, or rectum) and motor responses (plantar flexion of the great toe and bellows contraction) confirmed stimulation of the S3 nerves. When the patient documented a 50% or greater reduction in symptoms, they proceeded with permanent device implantation. For those with less than 50% improvement, a staged InterStim trial was performed. N-1 Two Proportion test compared significance between groups.

Results: 53 patients underwent PNE: 28 with and 23 without fluoroscopy use. There were no differences in patient age or BMI between the groups. Overall, 14 (50%) patients had InterStim implantation after PNE where fluoroscopy was used and 9 (36%) had InterStim implantation after PNE where fluoroscopy was not used (p = .44). Five patients in the fluoroscopy PNE arm underwent a staged trial of InterStim of which 3 went onto to full implantation. Similarly, 1 patient in the non-fluoro PNE arm underwent a staged InterStim trial and then went on to full implantation (p = 0.33).

Conclusion: Fluoroscopy may not be available in all settings and this limitation might hinder clinic peripheral nerve evaluations. Our preliminary data suggests that fluoroscopy use does not affect conversion rates to full InterStim implantation. As we expand our data, we hope to continue seeing results that support the technique without X-ray which completely removes radiation exposure to patients and staff and expedites the procedure.
Dana Kivlin, DO

**Birthplace:** Hartford, CT

**Medical School:** University of New England College of Osteopathic Medicine

**Residency:** Einstein Medical Center

**Fellowship:** Tower Urology/Cedars Sinai Medical Center

**Plans after Fellowship:** Middlesex Urology in Middletown, CT
REMOVAL OF SACRAL NERVE STIMULATION DEVICES FOR MAGNETIC RESONANCE IMAGING: WHAT HAPPENS NEXT?

Jessica C. Lloyd, MD; Bradley C. Gill, MD, MS; Javier Pizarro-Berdichevsky, MD; Howard B. Goldman, MD

1Glickman Urologic Institute, Cleveland Clinic Foundation, Cleveland, OH; 2Urogynecology Unit, Sotero del Rio Hospital, Santiago, Chile; 3Division Obstetricia y Ginecologia, Pontificia Universidad Catolica de Chile

Presented By: Jessica C. Lloyd

Introduction: Sacral neuromodulation (SNS) is an effective therapy; however, these devices are not approved to undergo magnetic resonance imaging (MRI) of sites other than the brain. Therefore, when non-brain MRIs are required, devices are often removed prior to imaging. We assessed the frequency of device removal for MRI and the subsequent clinical course of these patients.

Methods: A retrospective review of all SNS procedures in the urology department at a tertiary care center from 2010-2015 was performed and explants identified. Cases explanted for MRI were analyzed to collect demographics, clinical characteristics, and post-removal management. Descriptive statistics were calculated and presented as mean (standard deviation) or median [interquartile range] as appropriate.

Results: A total of 90 patients underwent SNS device removal, with 21 (23%) occurring for MRI, of which all devices were implanted in 2012 or before. At explant, patients were 95% (N=20) female, 66 [52-72] years of age, and had a 29.6 [23.8-34.6] kg/m2 body mass index. Suboptimal symptom control from SNS was noted in 7 (33%) patients preoperatively and four patients in the cohort (19%) had Multiple Sclerosis. Of those explanted, 24% required MRI for neurologic and 57% for orthopedic concerns. The remaining MRI indications included abdominal masses (10%), genitourinary disease (5%), surveillance for prior spinal cord malignancy (5%), and cardiac disease (5%). Only 16 (76%) patients explanted ultimately underwent MRI, a median of 13 [3-16] days after device removal. MRI results actively impacted clinical management in half of the imaged patients, with no pharmacologic interventions, but instead surgical evaluation (5), physical therapy/rehabilitation (1), an outpatient procedure (1), and a headache diary (1) being recommended. Only 10% (N=2) of explanted patients underwent device replacement, while seven patients resumed medical therapy, three utilized intermittent self-catheterization or an indwelling catheter, two patients pursued Botulinum toxin, one sought care with a local urologist, and one underwent cystectomy and ileal conduit urinary diversion. Of the remainder, one is deceased and four were lost to follow-up.

Conclusion: In patients receiving SNS therapy, device removal for MRI is a rare event, most commonly due to orthopedic and neurologic pathologies. About half of the MRIs performed impacted clinical management. As SNS replacement was rare in this cohort, research is needed on the safety of various MRI types with SNS devices in vivo.
Jessica C. Lloyd, MD

Birthplace: Morgan City, LA

Medical School: Duke

Residency: Duke

Fellowship: Cleveland Clinic

Plans after Fellowship: FPMRS Practice (full time)
INTRA-DETRUSOR AND INTRA-AUGMENT INJECTION OF BOTOX IMPROVES REFRACTORY STORAGE SYMPTOMS AFTER AUGMENTATION CYSTOPLASTY

Robyn Roberts, MD1; Julie Stewart, MD2; Timothy Boone, MD, PhD2; Laura M. Martinez, MD2; Aaron Kaviani2, MD; Rose Khavari, MD2
1Department of Surgery, University of Texas Medical Branch, Galveston, TX; 2Department of Urology, Houston Methodist Hospital, Houston, TX
Presented By: Laura M. Martinez

Introduction: Augmentation cystoplasty has been used in the treatment of refractory overactive or neurogenic bladder. In a very small number of patients symptoms persist or recur after the surgery. There is little guidance on the management of these patients. In this study, we reviewed the efficacy of intra-detrusor and intra-augment Onabotulinum Toxin A (BTX-A) injections in this setting.

Methods: Billing codes were used to identify 135 patients who had undergone BTX-A injections in the clinic or the operating room between 2013–2015 by three neurourologists. Charts were reviewed to determine which of those patients had undergone prior augmentation cystoplasty. Chart of these patients were retrospectively reviewed for findings before and after BTX-A injections.

Results: A total of 13 (9 females, 4 males) patients with the mean age of 31.61 (±16.71 years) and history of prior augmentation cystoplasty were identified. Before BTX-A injections, 12 patients had some degree of urinary incontinence (92.3%). 2 of them just had nocturnal incontinence (15.3%). The other patient had a combination of other storage (irritative) symptoms. All patients had completed urodynamic studies (UDS) prior to BTX-A injections. Average bladder capacity was 304.46 cc (± 127.93). 7 patients had bladder capacity of less than 300 cc (215.28 ± 59.58). Decreased compliance was noted in 6 patients (46%). 7 patients had detrusor overactivity (54%). All patients had received 200 units of BTX-A. Intradetrusor and intra-augment injections were done in 10 patients. 3 patients had only intradetrusor injections. Follow up is available in 10 patients. 9 patients (90%) reported improvement in all subjective parameters (frequency, urgency, incontinence). One patient with history of ileocystoplasty and Mitrofanoff appendicovesicostomy continued to have incontinence per urethra. UDS following BTX-A configuration. She underwent a repeat augmentation cystoplasty.

Conclusion: Intra-detrusor and intra-augment injection of BTX-A can improve refractory storage symptoms and continence after augmentation cystoplasty in the majority of patients. Prospective studies are needed to better evaluate the efficacy and ideal sites of injection of BTX-A in the setting of augmentation cystoplasty.
Laura M. Martinez, MD

Birthplace: Houston, TX

Medical School: Baylor College of Medicine

Residency: University of Oklahoma

Fellowship: Houston Methodist Hospital

Plans after Fellowship: Houston Methodist Sugar Land
USE OF THIRD LINE THERAPY FOR OVERACTIVE BLADDER IN A PRACTICE WITH MULTIPLE SUBSPECIALTY PROVIDERS: ARE WE DOING ENOUGH?

Dena Moskowitz, MD; Sarah A. Adelstein, MD; Alvaro Lucioni, MD; Una J. Lee, MD, FPMRS; Kathleen C. Kobashi, MD, FACS
Presented By: Dena Moskowitz

Introduction: Overactive bladder (OAB) impacts over 15% of the population over the age of 40. Compliance with anticholinergic medications is low, due either to minimal success or intolerable side effects. Third line therapies including sacral neuromodulation, posterior tibial nerve stimulation, and intradetrusor injection of onabotulinumtoxinA, have improved the treatment of OAB; however, many patients do not receive optimal treatment. We examine the practice patterns and utilization of third line treatment in a tertiary referral center with expertise in female pelvic medicine and reconstructive surgery (FPMRS).

Methods: The electronic medical record was queried for patients seen for OAB over one year. The number of visits associated with an OAB prescription and the number of patients who received third line therapy were determined and subcategorized by department, with FPMRS providers considered separately.

Results: 4,435 patients were seen for 7,015 visits for OAB. 37% were seen in the urology department and 27% by FPMRS providers. 30% of patients seen by urologists had an OAB prescription, compared with 16.6% of those seen in the institution. Of all patients seen for OAB, 4.5% received third line therapy, compared with 11.7% and 15.8% of those seen in urology and by FPMRS providers, respectively.

Conclusion: Use of third line therapy for OAB has been reported to be less than 5%. It is higher at our institution, likely due to access to multiple FPMRS providers and use of a care pathway that emphasizes early patient education on available options should they fail first and second line treatments. Even in a tertiary referral center it is likely that third line therapy is not being offered to many patients who would benefit from it. Our data demonstrate an opportunity for urologists to improve the quality of care and treatment success rates for OAB patients.

<table>
<thead>
<tr>
<th></th>
<th>Seen for OAB N</th>
<th>Prescribed Medication N (%)</th>
<th>Third Line Therapy N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institution</td>
<td>4,435</td>
<td>736 (16.6)</td>
<td>199 (4.5)</td>
</tr>
<tr>
<td>Urology</td>
<td>1,630</td>
<td>489 (30.0)</td>
<td>190 (11.7)</td>
</tr>
<tr>
<td>FPMRS Urology</td>
<td>1,098</td>
<td>322 (29.3)</td>
<td>173 (15.8)</td>
</tr>
</tbody>
</table>
Dena Moskowitz, MD

Birthplace: Toronto, Canada

Medical School: Medical College of Wisconsin

Residency: University of California Irvine

Fellowship: Virginia Mason Medical Center

Plans after Fellowship: N/A
Introduction: Intradetrusor onabotulinumtoxinA (BTX–A) BTX–A injections are an established third–line therapy for the treatment of overactive bladder (OAB). However, incomplete bladder emptying requiring clean intermittent catheterization (CIC) is a side effect that limits patient acceptability of BTX-A. There are studies that have evaluated risk factors that may predispose to need for CIC, but few have looked at parameters that may confer protection against catheterization. Herein we present an initial report of a cohort of men who have undergone prostatectomy and subsequent BTX–A for OAB.

Methods: A retrospective chart review of patients receiving 100 units of BTX–A for OAB refractory to antimuscarinics and/or beta 3agonists from 2010 to 2016 was performed. We sought to identify predictors of elevated post–void residual (PVR) leading to CIC in patients not expected to perform CIC post treatment. From that database a subset of men who had undergone prostatectomy for benign or malignant disease (open or robotic radical prostatectomy (RP), or transurethral procedure (TUR) for BPH) were identified. All men received 100 units of onabotulinumtoxinA under local anesthesia by flexible cystoscope. PVR was measured 2 weeks after the procedure. We generally recommend CIC for PVR 200 – 349 ml with symptoms or greater than 350mL with or without symptoms. Clinical variables were correlated with PVR/CIC at their subsequent evaluations. Patients with neurogenic DO and those performing CIC prior to BTX-A injection were excluded.

Results: 71 men were identified. Of these, 45 (63.4%) had surgical interventions on their prostate; 23 (32.4 %) had open or robotic RP and 22 (31 %) had a TUR for BPH. The overall rate of CIC was 12.7%. Three (13.6%) men in the TUR group required CIC vs. 6 (23%) who had an intact prostate No men in the RP group required CIC. The median post BTX-A PVR in the RP group was 44 ml when compared to 104 in the TUR group and 197ml in the group with intact prostates. (Table shows p values)

Conclusion: The overall rate of CIC in men receiving intravesical BTX–A for OAB in our cohort was 12.7%, somewhat higher than is seen in women. Prior RP appears to have a protective effect against CIC (p=0.02) and elevation of PVR (p=0.001). No man required CIC after RP. Prior TUR does not confer protection against CIC (p=0.5) but may protect against elevation of PVR (p=.03). A proposed mechanism for better emptying after surgery may be the ability to Valsalva void.

<table>
<thead>
<tr>
<th>N</th>
<th>Pretreatment PVR (ml)</th>
<th>Post PVR (ml)</th>
<th>PVR&gt;200(ml)</th>
<th>CIC (ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All men</td>
<td>71</td>
<td>19.8</td>
<td>115</td>
<td>14</td>
</tr>
<tr>
<td>Men no surgery</td>
<td>26</td>
<td>13</td>
<td>197</td>
<td>9</td>
</tr>
<tr>
<td>Men TUR</td>
<td>22</td>
<td>32</td>
<td>104 (p=0.03)</td>
<td>3</td>
</tr>
<tr>
<td>Men RP</td>
<td>23</td>
<td>14.5</td>
<td>44 (p=0.001)</td>
<td>2</td>
</tr>
</tbody>
</table>
Daniel Hoffman, MD

**Birthplace:** San Juan, Puerto Rico

**Medical School:** Ponce School of Medicine

**Residency:** University of Puerto Rico School of Medicine

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

**Plans after Fellowship:** N/A