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ORAL PRESENTATION 01

Pelvic Organ Prolapse in a Cohort of Women Treated for Stress Urinary Incontinence

Norton P,[1] Brubaker L,[2] Nager C,[3] Stoddard A,[4] Sirls L,[5] Lemack G,[6] Zyczynski H,[7] Rickey L,[8] Varner RE.[9] [1]OB/GYN, University of Utah, Salt Lake City, Utah; [2]OB/GYN, Loyola, Chicago, Illinois; [3]OB/GYN, University of California San Diego, San Diego, California; [4]New England Research Institute, Boston, Massachusetts; [5]Urology, William Beaumont Medical School, Royal Oak, Michigan; [6]Urology, University of Texas Southwest, Dallas, Texas; [7]OB/GYN, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania; [8]Urology, Yale University School of Medicine, New Haven, Connecticut; [9]OB/GYN, University of Alabama at Birmingham Medical Center, Birmingham, Alabama

Objectives: The aim of our study was to observe pelvic organ prolapse (POP) over time, treated and untreated, in a group of highly characterized women being followed subjectively and objectively over 5-7 years following continence surgery.

Materials and methods: We measured baseline prolapse symptoms (pelvic floor distress inventory, any POP response of "somewhat," "moderately," or "quite a bit") and anatomic prolapse (POPQ performed by blinded observers) in subjects enrolled in a large multicenter trial of incontinence surgery, and measured these same parameters annually for 5 to 7 years after the index surgery. Additional information was collected annually about subsequent treatment for POP. This analysis focuses on stage 2 prolapse (within 1 cm of the hymenal ring), as there is more uncertainty as to whether these patients should undergo prolapse surgery. All participating sites obtained institutional review board approval for this randomized trial.

Results: Five hundred ninety-seven women were randomized to one of two mid-urethral sling procedures in the index trial; concomitant vaginal procedures for POP were allowed at the surgeon's discretion. Stage 2 POP was present at baseline in 291 of subjects (49%); of these, 246 (85%) involved the anterior wall and 174 (60%) were limited to the anterior wall. Symptoms of POP were reported in 67 (25%) while 223 (75%) were asymptomatic. Of the asymptomatic women, 34/223 (15%) underwent a concomitant POP repair at the time of index sling surgery; most (189/223 [85%]) did not. Prolapse progression in women with asymptomatic, unoperated stage 2 POP over the next 72 months was infrequent and occurred in only 3 of 189 subjects (2%); none underwent surgery for POP. Most symptomatic women (47/67 [70%]) underwent a concomitant repair for POP at the index sling surgery, and 20 (30%) did not. Three of the 47 women who had undergone concomitant repair for symptomatic stage 2 POP underwent repeat POP surgery (two at 36 months and one at 48 months).

Conclusion: In this cohort of well characterized women undergoing continence surgery, we found that unoperated stage 2 POP was unlikely to progress over the ensuing 5-7 years and very unlikely to go on to surgery. Similarly, treated stage 2 POP was unlikely to require additional surgery over time. This is in contrast to the advice often given to repair all prolapse defects at the time of surgery, and to studies using national databases (Anger et al 2008) to project that a significant number of women undergoing surgery for continence will require additional POP surgery within 12 months. We conclude that for patient populations similar to the populations in this multicenter trial, surgeons may counsel women with asymptomatic stage 2 POP that their prolapse is unlikely to require surgery in the next 5-7 years.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Peggy Norton: Nothing to disclose
Linda Brubaker: Nothing to disclose
Charles Nager: Nothing to disclose
Anne Stoddard: Nothing to disclose
Larry Sirls: Nothing to disclose
Gary Lemack: Nothing to disclose
Halina Zyczynski: Nothing to disclose
Leslie Rickey: Pfizer, investigator, research support
Robert E. Varner: Nothing to disclose

ORAL PRESENTATION 02

Obstetric Risk Factors and Pelvic Floor Symptoms Associated with Stage II Posterior Vaginal Prolapse

Wilbur MB,[1] McDermott K,[2] Blomquist J,[3] Handa V.[4] [1]Department of Gynecology & Obstetrics, Johns Hopkins Hospital, Baltimore, Maryland; [2]Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland; [3]Department of Gynecology, Greater Baltimore Medical Center, Towson, Maryland; [4]Department of Gynecology & Obstetrics, Johns Hopkins Bayview Medical Center, Baltimore, Maryland

Objectives: The goals of this study are (1) to investigate the association between posterior vaginal prolapse and obstetrical history and (2) to compare symptoms of pelvic floor disorders between women with posterior vaginal prolapse, anterior vaginal prolapse, and no prolapse.

Materials and methods: This is a secondary analysis from the Mothers' Outcomes after Delivery study. Women were enrolled 5 to 10 years after first delivery and followed annually. At each research visit, women were asked about symptoms associated with prolapse, anal incontinence, and defecation using the Epidemiology of Prolapse and Incontinence Questionnaire and the short form of the Colorectal-Anal Impact Questionnaire. Data regarding deliveries were assessed with review of hospital records. Pelvic examinations were performed annually using the Pelvic Organ Prolapse Quantification system. We defined posterior prolapse as stage II or greater posterior support (Ap $\geq$ -1). Women with posterior prolapse were compared with two groups: women with anterior prolapse but no posterior prolapse (Ap $<$ -1 and Aa $\geq$ -1) and women with no prolapse (Ap $<$ -1, Aa $<$ -1, C $<$ -1). The obstetric exposures were compared between groups. Bowel symptoms were compared at initial visit and subsequent visits. Using logistic regression and baseline data, the odds of having certain bowel symptoms were predicted for the posterior prolapse group and the group without prolapse using anterior prolapse as the reference group. Generalized estimating equations and longitudinal data were used to investigate bowel symptoms across all visits.

Results: A total of 1497 women completed 3840 person-visits. At the baseline visit, 85 women had stage II posterior prolapse and none had stage III or IV posterior prolapse. Compared to women with no prolapse,

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women with posterior or anterior prolapse were significantly more likely to have had at least one vaginal delivery ($p < 0.001$), to have delivered an infant weighing greater than 4000 g vaginally ($p < 0.001$), and to have experienced an anal sphincter laceration ($p = 0.030$). Women with posterior prolapse were also significantly more likely to have had an operative delivery ($p < 0.001$). At enrollment, women with posterior prolapse were more likely than the other two groups to report incontinence of gas ($p = 0.011$), sensation of a bulge ($p < 0.001$), and splinting for bowel movements ($p = 0.003$). There was no difference between women with anterior or posterior prolapse with respect to incontinence of stool or difficult bowel movements, although both groups were more likely than women with no prolapse to report these symptoms. Incorporating all person-visits in the generalized estimating models resulted similar trends.

Conclusion: Obstetric risk factors are similar for anterior and posterior vaginal prolapse. However, women with posterior prolapse are more likely to report incontinence of gas, bulge symptoms, and splinting to complete a bowel movement. Our results suggest that women with stage II posterior prolapse may be experiencing more symptoms than previously appreciated.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

MaryAnn B. Wilbur: Nothing to disclose
Kelly McDermott: Nothing to disclose
Joan Blomquist: Nothing to disclose
Victoria Handa: Nothing to disclose

ORAL PRESENTATION 03

Trend in Apical Prolapse Repairs in Commercially Insured Women in the United States over 15 Years

Dandolu V, Talukdar S, Sura S. Obstetrics and Gynecology, University of Nevada School of Medicine, Las Vegas, Nevada

Objectives: To identify the trends pertaining to surgery for apical prolapse repair among commercially insured population in the United States over 15 years.

Materials and methods: The data for this study was obtained from 1996-2010 US Medstat MarketScan Commercial Claims database which contains comprehensive de-identified medical and health-care claims records from Health Maintenance Organizations and preferred providers. Dataset of all patients that underwent surgery for apical prolapse was extracted using appropriate CPT codes. SAS statistical software was used for analysis.

Results: We identified women aged 18 to 65 years undergoing repair of apical prolapse from 1996 to 2010 in the United States. There were a total of 53,980 apical prolapse repair procedures reported in the dataset during this time. The abdominal route was used for 11,614 (21.5%) of these procedures while 34,721 procedures (64.3%) were performed vaginally and 7645 (14.1%) performed laparoscopically. Vaginal colpopexies utilized both extra-peritoneal (sacrospinous, ischicoccygeal repair; n = 23,080) and intraperitoneal approaches (uterosacral, levator myorrhaphy; n = 11,641). Mesh utilization rate was 28.74% for extraperitoneal procedures and 8.54% for intraperitoneal procedures during this study period. Overall rate of vaginal repair techniques that involved the use of a mesh (transvaginal mesh repair [TMR]) was 22% while 78% of the vaginal procedures were done without using mesh (transvaginal native tissue repair [TNR]). A comparison of different repair techniques during this period revealed the following trends: the annual number of total procedures reported for all three routes increased steadily from 1996 to 2010. There was a dramatic decrease in the proportion of the abdominal procedures performed over the study period; the abdominal procedures represented 49% in 1996, gradually decreasing to 12% in 2010. The proportion of laparoscopic sacrocolpopexies increased sharply, reaching 20.76% by 2010 from only 0.13% in 2003. Vaginal procedures have risen steadily over this period from 51% in 1996 to 67% in 2010. Transvaginal mesh repair rapidly increased from non-existent prior to 2005 to 26.5% of all procedures in 2010. The proportion of mesh procedures among all vaginal procedures steadily increased 39.49% in 2010.

Conclusion: MarketScan database collects information on CPT procedure codes and thereby allows categorization of apical prolapse repairs to more precise categories such as vaginal and abdominal and laparoscopic unlike other national databases. This degree of precision is not available in other national datasets such as National Inpatient Sample. Overall number of reported procedures for apical prolapse repairs increased from 1996 to 2010 among women 18-65 years of age with commercial insurance. Up until 2003, abdominal and vaginal procedures for apical prolapse repair were about equally popular. Proportion of abdominal sacrocolpopexy procedures dramatically dropped from about 49% in 1996 to 12% in 2010. This corresponded to an increase in proportion of procedures performed via vaginal route particularly transvaginal mesh repair, and laparoscopic sacrocolpopexy.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Vani Dandolu: Nothing to disclose
Shobhana Talukdar: Nothing to disclose
Sneha Sura: Nothing to disclose

ORAL PRESENTATION 04

Effect of a Decision Aid on Decision Making for the Treatment of Pelvic Organ Prolapse

Brazell HD,[1] Greene J,[2] O'Sullivan DM.[3] [1]Obstetrics and Gynecology, Hartford Hospital, Hartford, Connecticut; [2]Administration, Mid State Medical Center, Meriden, Connecticut; [3]Research Administration, Hartford Hospital, Hartford, Connecticut

Objectives: To determine if the addition of a decision aid (DA) decreases decisional conflict in women presenting for the management of pelvic organ prolapse (POP).

Materials and methods: Women scheduled for the evaluation and management of POP were randomized into either of 2 groups: standard counseling alone (n = 50) or standard counseling plus a DA (n = 53). Upon completion of their initial visit, patients filled out a 16-item decisional conflict scale and short form general health survey (SF-12 v2). Values were assessed for normality and compared between groups. Normally distributed, continuous data were evaluated with a Student's t-test. A chi-square test was used to compare selected categorical characteristics between groups. Differences in distributions of low and high decisional conflict were assessed with a Mann-Whitney U test.

Results: One hundred three women were randomized for this analysis. Baseline characteristics, including pelvic prolapse examination measurements, did not significantly differ between groups (Table 1). The addition of a DA to standard counseling did not significantly lower the level of decisional conflict patients faced when deciding on a treatment plan ($p = 0.244$). There were no significant differences between groups in uncertainty, values clarity, support, effective decision, and informed subscores. Additionally, there were no between-group differences in choice of treatment plan (conservative management, pelvic floor physical therapy, pessary, and surgery; $p = 0.837$).

Conclusion: In this relatively small sample, the addition of a DA to standard counseling for women with POP does not significantly decrease the level of decisional conflict in making treatment-related decisions.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Hema D. Brazell: Healthwise provided decision aid at no cost
John Greene: Nothing to disclose
David M. O'Sullivan: Nothing to disclose

Table 1
Baseline Patient Characteristics

	Standard counseling	Standard counseling + decision aid
Participants (n)	50	53
Age (mean ± SD)	60.3 ± 11.1	61.0 ± 13.2
Mean body-mass-index	27.7 ± 5.8	27.7 ± 5.5
Median parity (range)	2 (2-3)	2 (2-3)
Prior prolapse surgery, no. (%)	9 (18%)	5 (9.4%)
Prior incontinence surgery, n (%)	8 (16%)	3 (5.7%)
Smoking status No Yes, current Yes, quit	30 0 20	34 2 17
Menopause	37 (75.5%)	42 (79.2%)
SF-12 PCS MCS	46.1 ± 12.4 45.0 ± 12.4	49.1 ± 11.9 46.6 ± 11.3
POP-Q stage, overall; median (range) 0 1 2 3 4	2 (2-3) 0 (0%) 5 (10%) 27 (54%) 18 (36%) 0 (0%)	3 (2-3) 0 (0%) 3 (5.8%) 22 (42.3%) 26 (50%) 1 (1.9%)

ORAL PRESENTATION 05

Extension and Validation of Significant Linkage Evidence for Pelvic Organ Prolapse on Chromosome 10Q

Allen-Brady K,[1] Cannon-Albright L,[1] Norton P.[2] [1]Division of Genetic Epidemiology, Internal Medicine, University of Utah School of Medicine, Salt Lake City, Utah; [2]OB/GYN, University of Utah, Salt Lake City, Utah

Objectives: We previously reported significant linkage evidence for pelvic organ prolapse (POP) on chromosome 10q in 164 women who reported at least bothersome symptoms of POP. We continue to expand our Utah POP Genetic Resource with recruitment of new high-risk POP families and new POP cases in previously identified high-risk POP pedigrees. The objective of this study is to extend and validate the prior chromosome 10q linkage result with our expanded resource.

Materials and methods: We assessed linkage evidence in 53 pedigrees with at least two women per pedigree who reported at least bothersome symptoms of POP. Bothersome symptoms were defined based on standardized symptom questions (Pelvic Floor Distress Inventory [PFDI]), (moderately or quite bothered), pelvic examination, and/or review of treatment records. The pedigrees ranged in size from 2 to 20 genotyped and affected individuals (n = 300 total genotyped subjects of whom 200 were affected); three of the pedigrees had 20 or more genotyped individuals. Genotype data were obtained from Illumina HumanHap550, 610Q, the Human1M-Duo, Human Omni1-Quad, or the Human Omni 2.5 platforms. We identified a set of single nucleotide polymorphism (SNP) markers common to all platforms and used this as our marker set. This set of markers was further pruned to derive a set of SNPs from which those in high linkage disequilibrium were eliminated. Parametric linkage analysis using a general dominant and recessive model was performed using the Markov Chain, Monte Carlo linkage analysis method (MCLINK). Results are reported as heterogeneity logarithm of odds scores (HLODs), where suggestive evidence is a score of 1.86 or higher and significant evidence is a score of 3.3 or higher.

Results: There were 45 affected individuals with only bothersome POP symptoms, 111 subjects who had been surgically treated, and 44 subjects who required repeat surgical intervention. Significant genome-wide linkage evidence was again found on chromosome 10q24-26 with a maximum HLOD score of 4.21 under a recessive model. There were 29 pedigrees (54.7%) that had at least nominal linkage evidence ($p < 0.05$) in this region, including two pedigrees with an HLOD score over 2.0 by themselves.

Conclusion: Further study of the two extended high-risk POP families with suggestive linkage evidence of POP by themselves (i.e., HLOD >1.86) may provide insight into genes contributing to POP. Continued expansion of the Utah POP Genetic Resource has resulted in validation of the chromosome 10q region as a region of interest for a genetic contribution to POP.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Kristina Allen-Brady: Nothing to disclose
Lisa Cannon-Albright: Nothing to disclose
Peggy Norton: Nothing to disclose

ORAL PRESENTATION 06

Outcomes of Risk-Reducing Bilateral Salpingectomy at Laparoscopic Hysterectomy for Benign Indications

Hou H, Pollard RR, Kane SM. Obstetrics and Gynecology, Metrohealth Medical Center, Case Western Reserve University, Cleveland, Ohio

Objectives: Prophylactic salpingectomies were first supported for BRCA mutation carriers. More recent evidence has shown that fallopian tubes also give rise to serious intraepithelial carcinomas in non-mutation carriers. Ovarian conservation has become the standard of care since evidence of premature menopause leading to serious health consequences and increased mortality has been documented. Salpingectomy alone may be an alternative choice to confer some protection against pelvic cancers without exposing patients to any increased morbidity or mortality. Our objective was to measure the outcomes of risk-reducing prophylactic salpingectomy at the time of laparoscopic hysterectomy for benign indications.

Materials and methods: A retrospective review of non-BRCA patients who have had bilateral salpingectomy at the time of hysterectomy was conducted. Laparoscopic hysterectomy cases between January 2010 and December 2012 were reviewed through a search of procedural codes utilizing the electronic medical record. Those who had laparoscopic hysterectomy with or without prophylactic salpingectomy were included. Demographics were collected as well as surgical indications, perioperative complications, operative times, blood loss, and postoperative pain scores. Menopausal symptoms and subsequent evaluations of ovarian failure were also recorded. These parameters were then compared for patients who underwent laparoscopic hysterectomy with or without bilateral salpingectomy.

Results: A total of 374 laparoscopic hysterectomies were performed by a single surgeon from 2010-2012 with 159 of those procedures including prophylactic bilateral salpingectomy. The mean age of the salpingectomy patients was younger, at 43.1 vs. 45.2 ($p = 0.003$). Other demographics of insurance status, race, and weight did not differ significantly. There was no difference in BMI at 31.1 vs. 31.9 in the salpingectomy vs. TLH alone groups. The data for TLH with salpingectomy vs. TLH alone for EBL (68.2 mL vs. 77.2 mL, $p = 0.47$), VAS pain scores (4.8 vs. 4.7, $p = 0.85$), menopausal symptoms (4.7% vs. 6.4%, $p = 0.49$), perioperative or postoperative complications (7.7% vs. 9.6%, $p = 0.51$), or overnight admissions (62.6% vs. 56.1%, $p = 0.21$) did not differ significantly. There was no difference in menopausal symptoms or hormone levels consistent with menopause between the two groups at the 6 week follow-up visits.

Conclusion: Prophylactic salpingectomy done at the time of laparoscopic hysterectomies does not add any operative morbidity. At 6 weeks following prophylactic salpingectomy, there is no increase in menopausal symptoms and no evidence of increased postoperative complications. In non-BRCA patients, prophylactic salpingectomy is a reasonable and safe measure to perform in hopes of decreased risk of cancer and future operative interventions. Further research on the long-term cancer risk reduction is needed.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Huiying Hou: Nothing to disclose
Robert R. Pollard: Nothing to disclose
Sarah M. Kane: Nothing to disclose

ORAL PRESENTATION 07

Impact of Robotic Technology on Hysterectomy Route and Associated Implications for Resident Education

Jeppson PC,[1] Rahimi S,[2] Gattoc L,[3] Westermann L,[4] Cichowski S,[5] Raker CA,[6] LeBrun E E Weber,[7] Sung V.[1] [1]Obstetrics and Gynecology, Brown University, Providence, Rhode Island; [2]Obstetrics and Gynecology, Mount Sinai, New York, New York; [3]Obstetrics and Gynecology, Emory University, Atlanta, Georgia; [4]Obstetrics and Gynecology, Good Samaritan Hospital, Cincinnati, Ohio; [5]Obstetrics and Gynecology, University of New Mexico, Albuquerque, New Mexico; [6]Division of Research, Women and Infants' Hospital of Rhode Island, Providence, Rhode Island; [7]Obstetrics and Gynecology, University of Florida, Gainesville, Florida

Objectives: To describe trends in hysterectomy routes before and after implementation of robotic technology. Our secondary objective was to describe trends in resident hysterectomy experience.

Materials and methods: We performed a multicenter, retrospective cohort study using historical controls through the Fellow's Pelvic Research Network. Four institutions representing the Northeast, South, Midwest, and West regions of the United States participated. We included hysterectomies performed for benign indications. Cases were collected from the year before the robot was introduced (pre-robot) and a year after (post-robot) at each institution. We performed a stratified random sampling to select a maximum of 20 cases per month per institution to obtain a representative annual case distribution for these years. Charts were reviewed to abstract data on patient demographics, hysterectomy approach, pre and postoperative diagnosis, and resident involvement. Categorical variables were compared using chi-square or Fisher's exact test, continuous parametric variables using T-test or ANOVA and nonparametric data using Wilcoxon rank-sum or Kruskal-Wallis test. We adjusted for institutional data using Mantel-Haenszel test for categorical variables and ANOVA for continuous variables.

Results: A total of 1459 hysterectomies were included; 736 in the pre-robot group and 721 in the post-robot group. Mean age was 47.5 (10.9) years and mean BMI was 29.5 (6.9). The first robotic hysterectomy was performed between 2006 and 2010 for the 4 institutions. The proportion of hysterectomies performed vaginally decreased from 42.3% pre-robot to 30.0% post-robot ($p < 0.0001$), abdominal hysterectomies decreased from 22.4% to 17.5%, laparoscopic hysterectomies increased from 1.6% to 11.7%. Robotic hysterectomies accounted for 22.9% of all hysterectomies in 2011. Mean uterine weight was similar in the pre-robot and post-robot groups but mean length of hospital stay decreased from 2.1 (1.3) days to 1.7 (1.2) days ($p < 0.0001$). Resident involvement in all hysterectomy routes other than robotic increased from 81.0% pre-robot to 88.8% post-robot, while only 58.5% of hysterectomies performed robotically had resident involvement.

Conclusion: The proportion of hysterectomies performed vaginally has significantly decreased since the adoption of robotic technology. The proportion of hysterectomies with resident involvement is lower with a robotic approach than with any other route.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Peter C. Jeppson: Nothing to disclose
Salma Rahimi: Nothing to disclose
Leda Gattoc: Nothing to disclose
Lauren Westermann: Nothing to disclose
Sara Cichowski: Nothing to disclose
Christina A. Raker: Nothing to disclose
Emily E. Weber LeBrun: Nothing to disclose
Vivian Sung: Nothing to disclose

ORAL PRESENTATION 08

Resident Participation in Laparoscopic Hysterectomy: Impact of Trainee Involvement on Operative Times and Surgical Outcomes

Igwe E,[1] Hernandez E,[1] Rose S,[2] Uppal S.[2] [1]Obstetrics and Gynecology, Temple University, Philadelphia, Pennsylvania; [2]Gynecologic Oncology, University of Wisconsin, Madison, Wisconsin

Objectives: Resident involvement in the era of enhanced emphasis on patient safety is of paramount importance when evaluating surgical outcomes. This has been well studied in general surgery where increased surgical times and minor morbidities are associated with resident involvement. Our objective was to evaluate the impact of residents on the outcomes of operative times, overall 30-day morbidity and mortality in benign laparoscopic hysterectomies.

Materials and methods: Patients included in the National Surgical Quality Improvement Program (NSQIP) dataset who underwent a benign laparoscopic hysterectomy between January 1, 2008, and December 31, 2011, were identified. Post-operative outcomes were compared for patients with and without resident participation.

Results: A total of 3441 patients were identified as having undergone a benign laparoscopic hysterectomy. A total of 1591 (46.2%) of cases had a resident participate (Resident) and 1850 (53.8%) of cases were done by attending alone (No-Resident). The two groups were comparable for baseline characteristics, except for the resident group had statistically significant greater mean age (48.70 years vs. 45.61 years, $p < 0.001$), percentage of inpatient surgeries (55.2% vs. 49.7%, $p = 0.01$), mean Charlson score (0.69 vs. 0.22, $p < 0.001$), and ASA classification ($p < 0.001$).

The mean operative time (179.29 vs. 135.46 min, $p < 0.0001$) and anesthesia duration (240.47 vs. 183.50 minutes, $p < 0.0001$) were significantly higher in the resident group. Thirty-day morbidity defined, as any one complication experienced in the 30-day post-operative period, was higher in resident group (6.8% vs. 5.4%, $p = 0.052$). There was no difference in the infectious, wound, neuro-renal, thromboembolic, septic, or cardio-pulmonary complications. Resident group had significantly increased rate of post-operative transfusion of greater than 4 units of pRBC (2% vs. 0.4%, $p < 0.0001$) and a higher 30-day readmission rate (2.1% vs. 1%; $p = 0.001$). Severe complications (Clavien classification IV) requiring intensive care admission were similar in the two groups (0.6% vs. 0.3%, $p = 0.14$). Majority of the difference in the variable severe morbidity was driven by the inclusion of the post-operative transfusion variable. On binary logistic regression modeling, controlling for ASA class, age, Charlson score, complexity of surgery and smoking status; post-operative transfusion of greater than 4 units and readmission rate was found to remain statistically significant with odds ratio of 4.98 (95% CI, 2.18-11.33, $p < 0.0001$) and 1.92 (95% CI, 1.09-3.42, $p = 0.25$) respectively.

Conclusion: Resident involvement resulted in clinically appreciable increase in surgical and anesthesia times and statistically significant increase in postoperative transfusions as well as readmission rates. However, severe complication rate and 30-day mortality remains comparable. In the era of patient safety, educators might need different parameters of accountability as compared to surgeons not operating in teaching environments. Resident utilization of simulation labs, video learning, or actual practice in the operating room should be regularly evaluated with skill assessment in order to provide optimal patient care.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Elena Igwe: Nothing to disclose
Enrique Hernandez: Nothing to disclose
Stephen Rose: Nothing to disclose
Shitanshu Uppal: Nothing to disclose

ORAL PRESENTATION 09

The Fellowship Effect: How Establishment of an FPMRS Fellowship Affected Resident Vaginal Hysterectomy Training

Danford J, White NC, Fletcher SA, Blume J, Ward RM. Vanderbilt University Medical Center, Nashville, Tennessee

Objectives: We report on trends in resident-performed vaginal hysterectomies before and after the establishment of a Female Pelvic Medicine and Reconstructive Surgery (FPMRS) fellowship at Vanderbilt University Medical Center. We examined medical records and resident self-reports concerning all hysterectomies performed by the Obstetrics and Gynecology department at our institution between July 1, 2004, and June 30, 2012. The FPMRS fellowship was established in 2008, providing a natural experiment in which to examine potential impact of the fellowship on resident training.

Materials and methods: While the number of residents remained approximately constant during this time period, faculty in the department of OB/GYN and the division of Urogynecology doubled in size. Cases were identified by CPT codes and route of hysterectomy (vaginal, abdominal, or laparoscopic; with or without robotic assistance), resident and fellow involvement, division of attending surgeon (general obstetrics and gynecology generalist, gynecology generalist, gynecology oncology, urogynecology, minimally invasive) were recorded from the electronic medical record. Resident American College of Graduate Medical Education (ACGME) case log data was used to estimate the number of hysterectomies where residents reported themselves as the primary surgeon. These logs are de-identified with respect to cases, so these data could not be combined with case record data.

Results: During the 8-year period of this study, 3317 hysterectomies were performed at our institution, 41% (1371) in the 4 years before and 59% (1946) in the 4 years after fellowship. Prior to fellowship, 27% (393) were vaginal, 56% (766) were abdominal, and 15% (212) were laparoscopic/robotic. After addition of fellowship, 23% (449) were vaginal, 31% (597) were abdominal, and 46% (900) were laparoscopic/robotic. Of the TVHs, there was resident involvement in 98.0% (385) of the cases before fellowship and 98.2% (441) of the cases after fellowship. From the ACGME case log data, the resident identified himself/herself as the primary surgeon in 388 cases before and 393 cases after fellowship. The higher number of vaginal hysterectomies from ACGME case log data than recorded in medical records suggests some misclassification in either case log or CPT obtained data logs. During this time period, medical records indicate a fellow was involved in 42% (189) of TVHs, with resident involvement in all but 5 of these procedures. Of the vaginal hysterectomies with resident involvement, 58.7% (226) were performed by surgeons in the division of urogynecology before initiation of a fellowship. After the fellowship, 70.7% (312) of vaginal hysterectomies were performed by this group of surgeons.

Conclusion: Nationally, there has been a decline in TVHs, prompting concern regarding resident training. At our institution, the decline in TVHs performed by non-urogynecology faculty was offset by an increase in TVHs by urogynecology. Frequency of resident involvement in TVH cases, either as primary surgeon or team member, remained constant after the addition of the FPMRS fellowship. Thus, prospective residents need not be concerned about a fellowship diminishing their surgical experience.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Jill Danford: Nothing to disclose
Nicola C. White: Nothing to disclose
Sarah A. Fletcher: Nothing to disclose
Jeffrey Blume: Nothing to disclose
Renee M. Ward: Nothing to disclose

ORAL PRESENTATION 10

Increasing Transparency at National Meetings: An Insight into Current Practices

Pickett SD,[1] Barenberg B,[1] Kantartzis KL,[2] Turner LC,[2] Miranne JM,[3] Dune TJ,[4] Akl A,[4] Vesely SK,[5] Nihira MA.[1] [1]Obstetrics and Gynecology, Female Pelvic Medicine and Reconstructive Surgery, University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma; [2]Obstetrics and Gynecology, Female Pelvic Medicine and Reconstructive Surgery, UPMC Magee Women's Hospital, Pittsburgh, Pennsylvania; [3]Obstetrics and Gynecology, Female Pelvic Medicine and Reconstructive Surgery, Medstar Washington Hospital Center/Georgetown University School of Medicine, Washington, DC; [4]Obstetrics and Gynecology, Female Pelvic Medicine and Reconstructive Surgery, Loyola University Chicago, Maywood, Illinois; [5]Biostatistics and Epidemiology, University of Oklahoma Health Science Center, Oklahoma City, Oklahoma

Objectives: Documenting author conflict of interest has become a critical aspect of scientific presentations. While the disclosures between physicians and industry have become standardized, there are still gaps in transparency when it relates to promoting one's institution or agenda at national meetings. The aim of this study is to identify the number of abstracts submitted to the Society of Gynecologic Surgery (SGS) and American Urogynecologic Society (AUGS) annual meetings where the author lists or alludes to the institution or the author's names within the body of the abstract. The secondary aim is to see if listing the institution or the author's name in the abstract lead to an increase rate of acceptance to present at the annual meetings.

Materials and methods: All abstracts submitted to SGS from 2010 to 2013 and to AUGS from 2009 to 2012 were reviewed independently by two reviewers to observe if any institution, physician, or research group was specifically mentioned in the body of the abstract. Any discrepancies were evaluated by a third reviewer. Chi-square analysis was used to assess association between institution and meeting. Logistic regression was used to predict institutional reporting with the variables of meeting year, meeting type, and abstract type.

Results: A total of 1912 abstracts from 10 different meetings were reviewed. Two hundred two abstracts were found to reveal some aspect of identifying information in the body of the abstract with 96% (193/202) revealed the name of the institution in the abstract. There was an association between abstract presentation and whether or not an institution was reported. Institute was reported in 9% (32/355) of abstracts accepted for oral presentation, 10% (30/305) in abstracts accepted for oral posters, 12% (121/1002) in abstracts accepted for posters, and 4% (10/250) in rejected abstracts ($p = 0.0018$). When comparing oral presentations versus all other categories, there is not a statistically significant difference ($p = 0.4541$) in the acceptance rate. Additionally, listing one's institution in the abstract became more prevalent over time, with a low of 6% in 2009 and a high of 13% in 2013. For each increase in year, the odds of an institution being reported was 1.19 times greater after controlling for meeting and abstract acceptance type. Whether or not the author was reported was not associated with abstract acceptance type.

Conclusion: Increasing transparency with abstract submission is an often overlooked component of conflict of interest. When reviewing the significance of listing one's institution in the body of the abstract, abstract acceptance type, meeting, and meeting year are all independently associated with acceptance of the abstract to that meeting. Whether or not the author was reported was not associated with abstract acceptance type. This gives information for the further development of guidelines to abstract submission on a national level.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Stephanie D. Pickett: Nothing to disclose
Benjamin Barenberg: Nothing to disclose
Kelly L. Kantartzis: Nothing to disclose

Lindsay C. Turner: Nothing to disclose
Jeannine M. Miranne: Nothing to disclose
Tanaka J. Dune: Nothing to disclose
Ahmed Akl: Nothing to disclose
Sara K. Vesely: Nothing to disclose
Mikio A. Nihira: Coloplast, Investigator in clinical trial, Sponsored Research; AMS, Investigator in clinical trial, Sponsored Research; Salix, Investigator in clinical trial, Sponsored Research; Cook Myosite, Investigator in clinical trial, Sponsored Research; POP Medical, Consultant, Honorarium; Ethicon Women's Health, Investigator in clinical trial, Education Grant

ORAL PRESENTATION 11

Sham Incisions Effects on Treatment Masking and Outcome Perception

Brubaker L, PFDN Loyola University Stritch School of Medicine, Maywood, Illinois

Objectives: Sham incisions in surgical trials are intended to limit treatment knowledge and minimize influence on perceived success, although their effects on outcome perception are not known. The Outcomes Following Vaginal Prolapse Repairs and Midurethral Sling (OPUS) trial randomized women to TVT vs. no TVT at vaginal prolapse surgery; the randomization included sham suprapubic TVT incisions to mask TVT assignment. In this planned secondary analysis, we assessed whether knowledge of treatment arm differed between randomized groups at 12 months and whether treatment success was affected by the perception of receiving active treatment (TVT).
Materials and methods: The OPUS design and primary outcome have been reported. Briefly, at the time of vaginal prolapse surgery, subjects randomized to sham TVT underwent suprapubic incisions mimicking the TVT trocar exit sites. Subjects or evaluators could complete a report detailing the unmasking circumstances at any point after study surgery and prior to 12-month assessment. Surgical outcomes were assessed at 12 months, when we also assessed treatment knowledge in OPUS participants (both randomized and patient preference cohorts) who reported knowledge of treatment by responding to the query: "Have you found out or been told (by clinical personnel) whether you had the additional study procedure at the time of your prolapse surgery?" We compared treatment unmasking and treatment knowledge, and assessed this relationship with treatment success rates.
Results: Prior to 12 months, only 4% (13/336) of treated subjects had completed unmasking reports. At 12 months, most subjects provided treatment knowledge forms: 94% (315/336) randomized subjects. In the RCT, 16 (10%) in the TVT group reported knowing their treatment; of which 15 (94%) were correct; 17 (11%) in the sham group reported knowing their treatment, but only 8 (47%) were correct ($p = 0.004$). These groups had a similar proportion of subjects who reported no treatment knowledge and had no unmasking report that correctly guessed/perceived treatment assignment (46 [33%] of sham vs. 44 [33%] of TVT). We did not detect significant differences in treatment success rates based on perception within and across received treatment groups (perceived sham vs. TVT overall; $p = 0.76$). Of those receiving TVT, more subjects that perceived TVT had treatment success compared to those that perceived sham (84% vs. 74%; $p = 0.29$). Among sham subjects, more subjects that perceived sham had success compared to those that perceived TVT (65% vs. 56%; $p = 0.42$). The actual treatment effect of TVT (regardless of each subject's perception) was greater than the perception effect for subjects that perceived TVT but actually received sham (76% vs. 56%, $p = 0.026$).
Conclusion: Sham surgical incisions are an effective masking technique for the TVT. Perception of treatment knowledge is not completely captured in formal unmasking reports. While treatment knowledge was not strongly related to treatment success, within treatment groups, differences were noted that may inform future randomized sham surgical trial designs.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Linda Brubaker: Nothing to disclose
PFDN: Nothing to disclose

ORAL PRESENTATION 12

Patient Perceptions of Removal of the Cervix at Time of Hysterectomy

King CR,[1] Donnellan NM,[1] Arden D,[2] Hur H,[4] Moawad NS,[3] Lowder J.[1]
[1]OB/GYN, Magee-Women's Hospital of UPMC, Pittsburgh, Pennsylvania; [2]OB/GYN, Kaiser Permanente Medical Center, Los Angeles, California; [3]OB/GYN, University of Florida Health Women's Center, Gainesville, Florida; [4]OB/GYN, Beth Israel Deaconess Medical Center, Boston, Massachusetts

Objectives: The objective of the study was to explore patient perceptions regarding retention or removal of the cervix at time of hysterectomy in order to identify knowledge deficits that may lead to improvements in practitioners' informed consent process.
Materials and methods: This was a cross-sectional, multi-center study of women presenting to their gynecologist or urogynecologist. Patients completed an anonymous survey querying women's knowledge and beliefs regarding types of hysterectomy and impact of such procedures on sexual, bowel, and bladder function. Women were asked 5 hysterectomy-related knowledge questions regarding types of hysterectomy with a passing score defined as $\geq$ 80%. The data were analyzed using descriptive statistics and multiple linear regression.
Results: A total of 448 women completed the questionnaire with 22.0% comprising the Northeast, 44.4% Midwest, 21.6% Southeast, and 11.6% West Coast. Among all women, 69.6% of respondents were white, 52.2% were younger than 46 years of age, and 75.1% of participants had at least a college education. Of the respondents, 102 (22.7%) did not know that a hysterectomy could be performed without removing the cervix. Of the women presenting to discuss hysterectomy, 48 (60.7%) were unsure if they were interested in keeping their cervix. Overall, 69.6% received a passing score of $\geq$ 80% on the 5 hysterectomy-related knowledge questions. The Southeast had the highest pass rate at 80.4%, while the Northeast had the lowest at 66.7%. Women who received <80% on the knowledge-based questions placed more importance on their uterus (64.9% vs. 56.2%), cervix (56.1% vs. 47.5%), and ovaries (64.9% vs. 56.2%) for female identity. A lower pass rate was associated with women who agreed that cervical removal at the time of hysterectomy would make her feel like less of a woman ($p = 0.002$, Beta = -1.027). A bimodal relationship was found with increased cervical, uterine, and ovarian importance in regard to female identity in women <25 years old and >56 years old. Women in the Southeast placed less importance on their uterus and ovaries in regard to sexual wellbeing and female identity. In addition, 51% of women in the Southeast disagreed that removing the cervix makes you less of a woman, while 33% to 39% of the remaining regions disagreed.
Conclusion: Many women remain misinformed regarding options available for hysterectomy. Attitudes regarding the importance of the uterus, cervix, and ovaries on female identity and sexual wellbeing vary greatly based on region. The Southeast was found to place the least emphasis on these organs, while the Northeast and West Coast placed the most emphasis. Increased education does not equate with more hysterectomy-based knowledge; furthermore, decreased hysterectomy-based knowledge may lead to stronger emotional attachment to female organs. Last, women who are <25 years of age and >56 years of age place increased importance on their uterus, cervix, and ovaries in regard to sexual wellbeing and female identity. Preoperative counseling should address these trends to better counsel patients regarding preservation and removal of the cervix.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Cara R. King: Nothing to disclose
Nicole M. Donnellan: Nothing to disclose
Deborah Arden: Nothing to disclose

Table 1
Hysterectomy costs

Transformation Used	Open Cost Units (Mean ± SD)	Open N	Laparoscopic Cost Units (Mean ± SD)	Laparoscopic N	Robotic Cost Units (Mean ± SD)	Robotic Cost Units Without RMD (Mean ± SD)	Robotic N	ANOVA p value
Natural log	1.381 ± 0.723	1666	1.034 ± 0.397	2471	1.657 ± 0.600		734	< 0.001*
Outlier Elimination	1.303 ± 0.450	1500	1.000 ± 0.274	2225	1.607 ± 0.375		662	< 0.001*
Natural log	1.381 ± 0.723	1666	1.034 ± 0.397	2471		1.178 ± 0.600	734	< 0.001*
Outlier Elimination	1.303 ± 0.450	1500	1.000 ± 0.274	2225		1.128 ± 0.375	662	< 0.001*

RMD = Robotic Maintenance/Depreciation.
*All post-hoc tests p < 0.001.

Hye-Chun Hur: Nothing to disclose
Nash S. Moawad: Nothing to disclose
Jerry Lowder: Nothing to disclose

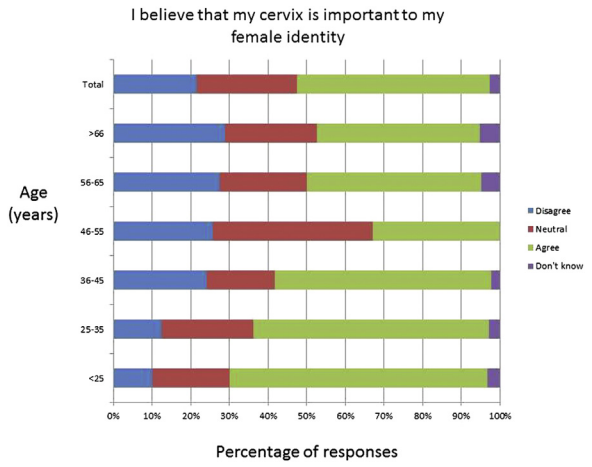

Figure. Percentage of women by age who agree, disagree, do not know, or are neutral in regard to cervical importance on female identity.

ORAL PRESENTATION 13

Minimizing Hysterectomy Costs Transitioning from Open to Minimally Invasive Techniques

Shepherd JP,[1] *Ahn K,*[2] *Kantartzis KL,*[1] *Bonidie MJ,*[1] *Lee T.*[1] [1]*University of Pittsburgh Medical Center, Pittsburgh, Pennsylvania;* [2]*Korea University Medical Center, Seoul, Republic of Korea*

Objectives: To determine differences by surgery route in hysterectomy costs. To determine if surgeons who primarily perform open hysterectomies would lower costs by transitioning to laparoscopy or robotics.

Materials and methods: Cost data was collected from all hysterectomies in fiscal years 2011-2013 excluding cancer and concomitant procedures other than oophorectomy. Vaginal cases were excluded. Costs were subdivided into 17 functional groups (laboratory, PACU, etc.) Due to their proprietary nature, costs were expressed as cost units (cu) with 1 cu representing the least expensive route. Cost distributions were skewed, so two transformations with separate analyses were performed including natural log (ln) and outlier elimination (excluding the top and bottom 5th percentile). Surgeons were classified as open, laparoscopic, or robotic by route >50% of cases were performed. Costs were compared by surgeon type for each route. Analysis was completed for total costs and with subtracting per case robot maintenance/depreciation (RMD) of 0.479 cu. ANOVA, T-tests, and Mann-Whitney U were performed where appropriate.

Results: A total of 4871 hysterectomies were analyzed from 237 surgeons including 1666 open (34.2%), 2471 laparoscopic (50.7%), and 734 robotic (15.1%). Laparoscopic hysterectomy (LH) had the lowest total costs and was designated 1 cu (Table 1, p < 0.001). Mean total costs were 1.247 ± 0.606 cu (1.174 ± 0.581 cu without RMD). On functional group analysis of LH vs. robotic hysterectomy (RH) only, RH costs were higher for anesthesia, laboratory, blood bank, OR equipment, OR time, and pharmacy. LH costs were higher for non-invasive cardiology and medicine/surgery. There were no differences in the remaining 9 functional groups. There was no difference in length of stay (p = 0.286). Open surgeons also performed RH and LH. On analysis of only RH, there was no difference in total costs between open and robotic surgeons (Table 2). For LH and outlier elimination, open surgeons had higher total costs than laparoscopic surgeons (1.065 cu vs. 0.928 cu, p = 0.007). This difference was not seen with ln transformation (p = 0.483).

Conclusion: Total costs were lowest with LH. However, when surgeons transition from primarily open to LH or RH, there may be an advantage to robotics as there was no difference in costs comparing open to robotic surgeons for RH. Open surgeons may have increased costs compared to laparoscopists if attempting LH, but only 1 of 2 analyses supported this.

Table 2
Hysterectomy Costs by Surgeon Type

Hysterectomy Route	Transformation Used	Open Surgeon Cost Units (Mean ± SD)	Open N	Laparoscopic Surgeon Cost Units (Mean ± SD)	Laparoscopic N	Robotic Surgeon Cost Units (Mean ± SD)	Robotic N	ANOVA p value
Robotic	Ln	1.736 ± 0.671	41	1.652 ± 0.415	67	1.669 ± 0.607	466	0.753
Robotic	Outlier Elimination	1.511 ± 0.340	35	1.588 ± 0.290	62	1.640 ± 0.400	414	0.119
Laparoscopic	Ln	1.084 ± 0.451	145	1.013 ± 0.378	2162	1.278 ± 0.517	100	< 0.001*
Laparoscopic	Outlier Elimination	1.065 ± 0.294	126	0.982 ± 0.263	1968	1.197 ± 0.321	76	< 0.001†

*Post-hoc tests: open vs. L/S p = 0.483, open vs. robot p = 0.032, L/S vs. robot p < 0.001.
†Post-hoc tests: open vs. L/S p = 0.007, open vs. robot p = 0.012, L/S vs. robot p < 0.001.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Jonathan P. Shepherd: Nothing to disclose
Ki Hoon Ahn: Nothing to disclose
Kelly L. Kantartzis: Nothing to disclose
Michael J. Bonidie: Nothing to disclose
Ted Teh MIn Lee: Ethicon Endosurgical, Consultant, Consulting Fees

ORAL PRESENTATION 14

Variability in Ureteral Distance to Uterosacral Ligament and Uterine Vessels with and without Cervical Traction

Chin K, Smith BC, Maldonado PA, Corton M. OB/GYN, UT Southwestern, Dallas, Texas

Objectives: To describe the relationship of the ureter to the uterosacral ligament and uterine vessels, and the changes that occur with traction on the cervix.

Materials and methods: Five unembalmed female cadavers with uteri were examined. A string was placed along the uterosacral ligament (USL) and the total length of the ligament, from its attachment points at the cervix and the sacrum was measured. Three points along the ligament were marked: at its insertion on the cervix and the sacrum, and at its midpoint (Figure). Ureteral catheters were placed above the level of the pelvic brim and the horizontal distances from the three marked USL points to the medial border of the ureter were recorded. Downward traction on the cervix was applied vaginally and distances between the midpoint of the USL to the ureter were again recorded. Distances from the lateral aspect of the cervix at the level of the isthmus to the medial aspect of the ureter at the level of its crossover point with the uterine artery were measured (Figure). All measurements were obtained twice and median distances used for analyses.

Results: All cadavers were white, with a median age of 78 years (range, 61-90 years) and median body mass index of 21.5 (range, 19.5-26.1). At the cervix insertion point, the median distance from USL to ureter was 29.5 mm (range, 27.5-32.5 mm) on the left and 33.5 mm (range, 27.5-48 mm) on right. At this point, the ureter was noted to be at a deeper or more posterior level than the ligament. At the midpoint of the ligament, the median distance from USL to ureter was 18.5 mm (range, 15.5-25.5 mm) on the left and 21 mm (range, 15.5-23.5 mm) on the right. At the sacrum, the median distance from USL to ureter was 39.5 mm (range, 30-48.5 mm) on the left and 40.5 mm (range, 17.5-61.5 mm) on the right. With gentle downward traction on the cervix, the distance between the midpoint of the USL to the ureter was 15 mm (range, 9.5-20 mm) on the left and 16 mm (range, 14.5-18.5 mm) on the right. At the level of the uterine isthmus, the distance between the lateral cervix to medial ureter at its crossover point with the uterine artery was 40.5 mm (range, 27-62.5 mm) on the left and 44.5 mm (range, 26-56.5 mm) on the right.

Conclusion: The closest distance between the uterosacral ligament and the ureter was at its midpoint in the pelvis. At the midpoint of the ligament, the ureter may be further drawn closer to the uterosacral ligament with downward traction on the cervix. Understanding these subtle anatomic changes that occur with vaginal manipulation of the cervix may help prevent iatrogenic ureteral injury during USL suspension or vaginal hysterectomy. During abdominal hysterectomy, with gentle upper traction of the body of the uterus, wide variability from the uterine artery to the ureter exists.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Kathleen Chin: Nothing to disclose
Benjamin C. Smith: Nothing to disclose
Pedro A. Maldonado: Nothing to disclose
Marlene Corton: Nothing to disclose

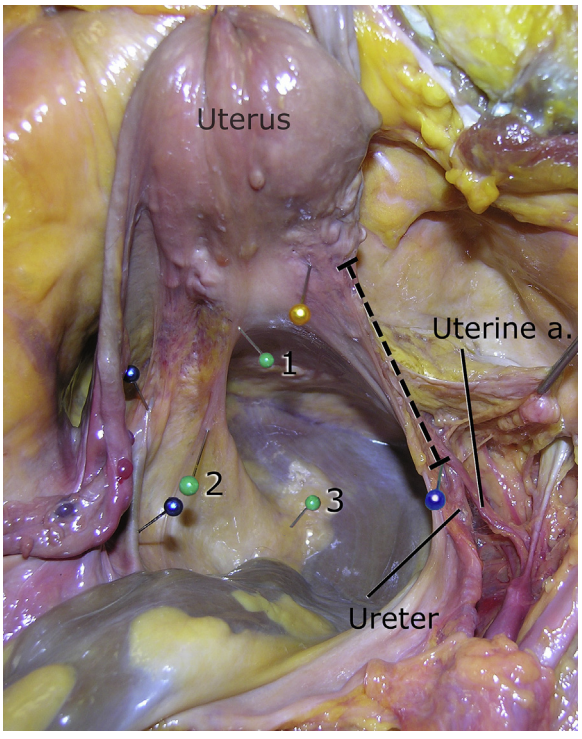

Figure. Superior view of the posterior cul-de-sac with green pins on the points examined on uterosacral ligament (USL). 1 = insertion point at the cervix; 2 = midpoint; 3 = sacral insertion point. Blue pins illustrate the medial border of ureter. Dashed line illustrates the distance between lateral border of the uterine isthmus and medial aspect of ureter at its crossover point with the uterine artery.

ORAL PRESENTATION 15

A Cost Effectiveness Analysis of Conservative versus Surgical Management for the Initial Treatment of Stress Urinary Incontinence

Richardson ML, Sokol ER. Department of OB/GYN, Division of FPM & RS, Stanford University School of Medicine, Palo Alto, California

Objectives: The Ambulatory Treatments for Leakage Associated with Stress Incontinence (ATLAS) trial suggests that conservative treatment with a pessary or pelvic floor muscle therapy (PFMT) improved patient symptoms by one-third at 12 months. Surgical treatment of SUI with mid-urethral slings, however, has been reported to offer high rates of cure. Given the increased morbidity associated with MUS it is unclear which treatment should be initially offered to patients from a cost effective perspective. Our objective was to examine which initial therapy should be offered to patients for the treatment of SUI.

Materials and methods: We compared medical costs and cost effectiveness over a 1-year time period with a decision tree model (TreeAge 2013 software). Three arms were included for the initial treatment of SUI (1) use of an incontinence pessary, (2) behavioral treatment with pelvic floor muscle therapy, or (3) surgical therapy with mid-urethral sling (Figure 1). Using data from the ATLAS trial and a randomized controlled trial of MUS, we identified probabilities of SUI after 12 months of use of a pessary, PFMT, or MUS. Parameter estimates included Health Utility Indices of no incontinence (0.93) and persistent incontinence (0.7) after treatment. Morbidities associated with MUS included mesh erosion, urinary retention, de novo urge incontinence, and recurrent SUI. Cost data was derived from Medicare in 2013 US dollars. In addition to base case analysis, one and two-way sensitivity analysis

was used to examine the effect of varying rates of the decision to pursue surgical treatment if conservative management failed (base case = 0.33) as well as varying rates of SUI cure with pessaries and PFMT (base case = 0.35 and 0.40, respectively). The primary outcome was an incremental cost effectiveness ratio (ICER) threshold of less than $50,000 USD, a commonly used threshold to determine cost effectiveness.

Results: Compared to an incontinence pessary, initial treatment of SUI with PFMT was the most cost effective strategy with an ICER of 22,450.00 per quality adjusted life year (QALY). Initial treatment of MUS was not cost effective with an ICER above the acceptable threshold ($60,971 USD/QALY) in our base case scenario. In two-way sensitivity analysis MUS becomes the most cost effective strategy if cure of SUI is less than 36% with PFMT or 32% for incontinence pessary.

Conclusion: At 1 year, PFMT is the most cost effective initial treatment for SUI unless "cure" rates with PFMT fall below 36%.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Monica L. Richardson: Nothing to disclose
Eric R. Sokol: Nothing to disclose

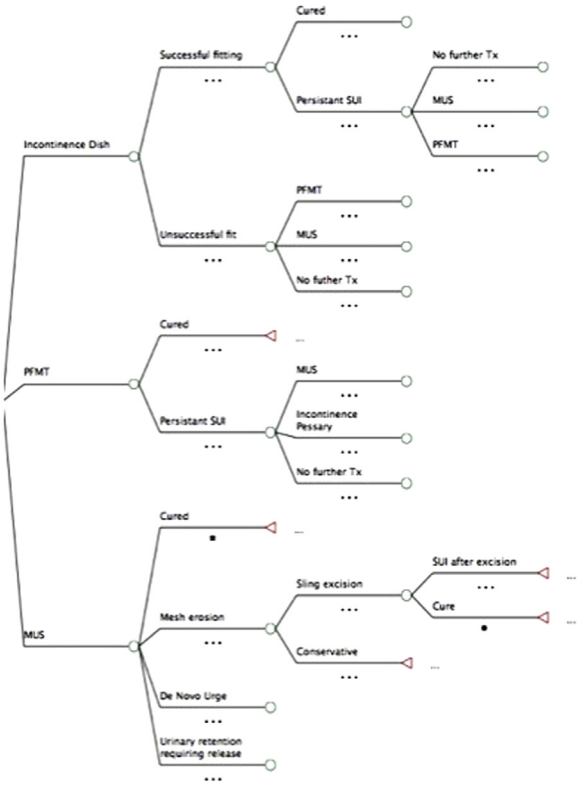

Figure.

ORAL PRESENTATION 16

Surgical Consent Factors That Influence Risk Recall for Midurethral Sling Surgery

McFadden BL,[1] Constantine M,[3] Rogers R,[1] Dunivan GC,[1] Hammil S,[1] Sussman A,[6] Romero A,[1] Abed H,[4] Kenton K,[2] Sung V.[5] [1]Obstetrics and Gynecology, University of New Mexico, Albuquerque, New Mexico; [2]Obstetrics & Gynecology and Urology, Northwestern University Feinberg School of Medicine, Chicago, Illinois; [3]Center for Bioethics and Social Sciences in Medicine, University of Michigan Medical School, Ann Arbor, Michigan; [4]Division of Urogynecology, Henry Ford Health System, Detroit, Michigan; [5]Division of Urogynecology & Reconstructive Pelvic Surgery, Warren Alpert Medical School, Brown University, Providence, Rhode Island; [6]Family and Community Medicine, University of New Mexico, Albuquerque, New Mexico

Objectives: Surgical risk recall associated with midurethral (MUS) surgery deteriorates over time, including recall that permanent mesh was placed or might erode. We aimed to identify factors in the surgical consent process that influenced risk recall 6 weeks after MUS surgery.

Materials and methods: This is a secondary analysis that explored patient understanding of surgical consent for MUS surgery. At four sites in the United States, women who consented for MUS surgery had consent sessions audiotaped and transcribed. Immediately after consent and again 6 weeks postoperatively, women recalled risks reviewed during consent and were given a risk recall score based on their percent recall of risks discussed. We compared the frequency that physicians discussed immediate and long-term risks specific to MUS surgery. We also analyzed transcripts looking for words referring to mesh (graft, mesh, tape, netting, etc.) and their frequency of use and whether it influenced the percent risk recall. Using the Fleish-Kincaid scale to measure physicians' oral literacy, we compared the grade level that the physician used when speaking to the patient's reported education level.

Results: Eighty-two women with a mean age of 52.5 $\pm$ 10.9 years were consented for MUS and audio-recorded. Seventy-one of 82 patients (87%) underwent MUS and of those, 63 of 71 (89%) completed 6-week postoperative questionnaires. The sample was predominantly white (87%) and highly educated (68% $\geq$ Associate's degree). Mean time spent in surgical consent counseling was 15 $\pm$ 7 minutes; in regression analysis, time spent did not predict improved recall at 6 weeks post-surgery. With the exception of mesh erosion, physicians less frequently discussed long-term compared to immediate surgical risks (58 vs. 95%, $p < 0.01$); risk recall varied from 33% to 95% (Table). Frequent use of mesh-related words did not correlate with improved recall of mesh placement or erosion. Physician oral Fleish-Kincaid grade level was 6.7 $\pm$ 1.4 vs. 14.7 $\pm$ 3.1 mean grade level of patients; physicians speaking at a lower grade level correlated with greater risk recall at 6 weeks ($r = -0.26$, $p < 0.05$).

Conclusion: With the exception of mesh erosion, physicians are less likely to mention long-term risks during surgical consent. Frequency of mesh-related word use by physicians did not improve risk recall. Physicians speaking at a lower grade level correlates with greater risk recall over time.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Brook L. McFadden: Nothing to disclose
Melissa Constantine: Nothing to disclose
Rebecca Rogers: AMS, DSMB chair for TRANSFORM trial, Consulting fees
Gena C. Dunivan: Nothing to disclose
Sarah Hammil: Nothing to disclose
Andrew Sussman: Nothing to disclose
Angelica Romero: Nothing to disclose
Husam Abed: Nothing to disclose
Kimberly Kenton: Nothing to disclose
Vivian Sung: Nothing to disclose

Table
Immediate vs. long-term risk counseling rates and recall

Timing	Risk	MD mentioned (%)	Recall score (%)*
Immediate	Organ damage	96.8	72.1
	Catheter	95.2	90.0
	Infection	95.2	86.7
	Bleeding	93.7	71.2
	Mean	**95.2**	**80.0**
Long-term	Mesh erosion	92.1	63.8
	OAB	76.2	62.5
	Chronic UTI	61.9	33.3
	Sling removal	58.7	78.4
	Continue leakage	30.2	94.7
	Groin pain	30.2	73.7
	Mean	**58.2**	**67.7**
Immediate vs. long-term		$p < .01$	$p = .15$

*Recall score calculation includes only women counseled about the specified risk.

ORAL PRESENTATION 17

Factors Associated with Risk of Failure of Endometrial Ablation

Smithling KR, Raker CA, Savella G, Matteson KA. Department of Obstetrics and Gynecology, Women and Infants Hospital / Brown University, Providence, Rhode Island

Objectives: The primary objectives of this study were to compare, among women who underwent endometrial ablation for heavy menstrual bleeding, risks of treatment failure and subsequent gynecologic interventions between women who had irregular bleeding and women who had regular bleeding pre-operatively. The secondary objective was to determine other patient characteristics associated with risk of treatment failure.

Materials and methods: We performed a retrospective cohort study of women who underwent endometrial ablation at Women and Infants Hospital between January 2007 and July 2009. Our independent variable, pre-operative bleeding pattern was defined as "irregular" or "regular" based on history recorded in the medical record. For our dependent variables, treatment failure was defined as repeat ablation or hysterectomy and "subsequent gynecological intervention" was defined as having an endometrial biopsy, dilation and curettage, hysteroscopy, re-ablation, or hysterectomy. Prevalence and odds of treatment failure and subsequent gynecologic intervention were calculated using chi-square or Fisher's exact test and multiple logistic regression, respectively.

Results: Nine hundred sixty-eight women had endometrial ablations during the study period. Two hundred eighty-six women were classified as having regular bleeding (30%), 284 had irregular bleeding (29%), and the pattern could not be specified for 350 women (36%). Comparing women with regular and women with irregular bleeding, we found no differences in prevalence of treatment failure (14.7% vs. 14.8%, p = 1.0) or gynecologic re-intervention (20.3% vs. 21.5%, p = 0.7). When we controlled for confounding variables, women with irregular bleeding were not at increased odds of treatment failure compared to women with regular bleeding (aOR 1.09, [0.67-1.78]). Looking at other clinical factors, women with dysmenorrhea preoperatively had increased odds of treatment failure and re-intervention when compared to women without dysmenorrhea (aOR 3.10 [1.94-4.94] and aOR 2.28 [1.47-3.54], respectively). Similarly, women with previous tubal ligation and women with a higher BMI were at increased odds for treatment failure (aOR 2.11 [1.46-3.04] and aOR 1.05 [1.02-1.07], respectively) and re-intervention (aOR 1.86 [1.36-2.57] and aOR 1.05 [1.03-1.07], respectively).

Conclusion: We did not find a difference in failure or intervention rate after endometrial ablation between women with regular and irregular bleeding, however, data collection are ongoing to try to better categorize preoperative bleeding pattern. Preoperative dysmenorrhea, tubal ligation, and increased BMI were associated with both treatment failure and gynecologic intervention after endometrial ablation. Determining factors associated with success and failure after endometrial ablation could inform clinical decision-making and patient counseling regarding ablation.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Katelyn R. Smithling: Nothing to disclose
Christina A. Raker: Nothing to disclose
Gina Savella: Nothing to disclose
Kristen A. Matteson: Nothing to disclose

ORAL PRESENTATION 18

Do Measurements of External Genitalia Correlate with Body Image among Women with Pelvic Floor Dysfunction?

McFadden BL,[1] Rogers R,[1] Dunivan G,[1] Qualls C,[2] Cichowski S,[1] Fairchild P,[1] Komesu Y.[1] [1]Obstetrics and Gynecology, University of New Mexico, Albuquerque, New Mexico; [2]Biostatistics, University of New Mexico, Albuquerque, New Mexico

Objectives: Reports of external genitalia measurements are limited to a young cohort of healthy premenopausal women. We aimed to describe the appearance and measurements of the external genitalia among women with pelvic organ prolapse (POP), urinary incontinence (UI), and/or fecal incontinence (FI) and the relationship these measurements have to body and genital self-image.

Materials and methods: Women with $\geq$ stage 2 POP, UI, and/or FI were recruited. Women with pelvic pain were excluded. Health history and physical examination, including POP-Q data were collected. Measurements of the clitoris, labia minora, and majora were measured using a method previously described by Lloyd et al (BJOG 2005). Examiners underwent training to ensure uniformity in measurements; 10% of subjects underwent repeat measurement by a second blinded examiner to test inter-rater reliability. Subjects completed the Modified Body Image (MBIS) and Female Genital Self Image (FGSIS) scales, Pelvic Floor Distress Inventory (PFDI-20), and Pelvic Organ Prolapse/Urinary Incontinence Sexual Function Questionnaire (PISQ-12). Vulvar measurements were correlated with MBIS and FGSIS scores using Pearson's correlations.

Results: One hundred sixty-eight women underwent physical examination. The mean age was 56.8 $\pm$ 13 years, 67% were menopausal, 44% had a BMI $\geq$ 30, 51% were Hispanic, and the majority of women were parous (95%). Nearly half of the women (53%) reported sexual activity and 21% used hormone replacement therapy (HRT). Women reported a variety of pelvic floor dysfunction: 85% reported UI, 27% reported AI, and 81% had $\geq$ stage 2 POP; nearly all women had more than one pelvic floor disorder. The majority of women (78%) did not shave their vulva. Mean external genitalia measurements and ranges are represented in the Figure. Left and right labia minora width and length measurements revealed significant asymmetry (paired t test, $p < 0.001$ and $p = 0.03$, respectively). Mean MBIS scores (possible range, 0-100, higher indicates worse score) were 39.6 $\pm$ 27.9 and FGSIS scores (possible range, 7-28, lower indicates worse score) were 19.1 $\pm$ 4.3. External genitalia measurements did not correlate with MBIS or FGSIS scores (all p = NS). Younger age, higher BMI, worse scores for the PFDI and PISQ, and a history of sexual abuse correlated with poorer body image, while HRT correlated with better body image. Older age correlated with smaller labia minora and majora measurements (all $p \leq 0.02$). While clitoral measurements did not correlate with age (all p = NS), clitoral glans width correlated with sexual function. A positive response to the PISQ question: "Do you have an orgasm when having sexual intercourse?" correlated with larger clitoral glans width measurements (Spearman's correlation = 0.29, $p < 0.01$). This correlation remained significant ($p < 0.01$) when controlling for baseline characteristics such as age, BMI, and education.

Conclusion: Measurements of the external genitalia among women with pelvic floor disorders reveal a wide range of values. While these measurements vary, they do not correlate with body or genital self-image. Increasing age is associated with decreased labial measurements. Increased clitoral width was associated with likelihood of orgasm with intercourse.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Brook L. McFadden: Nothing to disclose
Rebecca Rogers: AMS, DMSB chair for the TRANSFORM Trials, Consulting fees
Gena Dunivan: Nothing to disclose

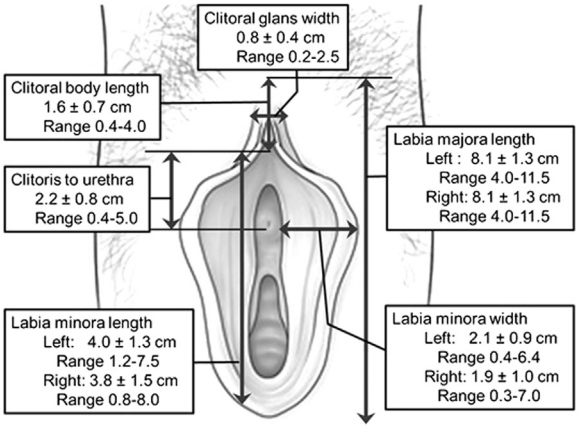

Figure.

Clifford Qualls: Nothing to disclose
Sara Cichowski: Nothing to disclose
Pamela Fairchild: Nothing to disclose
Yuko Komesu: Nothing to disclose

ORAL PRESENTATION 19

Sacral Nerve Stimulation Reduces Elevated Urinary Nerve Growth Factor (UNGF) Levels in Women with Detrusor Overactivity

Shalom D,[1] Pillalamarri N,[1] Winkler H,[1] Lind L,[1] Metz C.[2] [1]Obstetrics and Gynecology, North Shore-Long Island Jewish Health System, Great Neck, New York; [2]Center for Immunology and Inflammation, Feinstein Institute for Medical Research, Manhasset, New York

Objectives: To investigate changes in urinary nerve growth factor (uNGF) in women with detrusor overactivity (DO) before and after peripheral nerve evaluation for sacral neuromodulation vs. control subjects.

Materials and methods: This is a prospective analysis of women who presented to the North Shore-LIJ Health System between August 11, 2011 and March 13, 2013. Subjects were enrolled in the study if they had symptoms of DO including urinary frequency, urgency, or urge incontinence for greater than 3 months, a urodynamic diagnosis of DO, and experienced no improvement following treatment with anticholinergics and behavioral modifications. Age-matched controls (+/- 5 years) reported no symptoms of urinary frequency, urgency, or incontinence and provided a clean-catch urine specimen. At baseline, all subjects completed a 3-day voiding diary, Incontinence Quality of Life Questionnaire (I-QOL), and the Urinary Distress Inventory Questionnaire (UDI-6). A clean-catch mid-stream urine specimen was collected for uNGF and creatinine (Cr). DO subjects then underwent a 5-day peripheral nerve evaluation (PNE) trial for sacral neuromodulation. A voiding diary was completed each day of the PNE trial. After 5 days, subjects returned for follow-up and lead removal. The follow-up visit included collection of a clean-catch urine specimen and completion of I-QOL and UDI-6 questionnaires. The uNGF levels were measured by ELISA and expressed as uNGF pg/Cr mg. Group differences (comparing subjects vs. controls) for uNGF/Cr levels were tested using the non-parametric Mann-Whitney test. Changes in DO subject uNGF/Cr levels (from baseline to post-PNE) and quality of life measures before and after PNE were compared using the Wilcoxon signed-rank test. P values < 0.05 were considered significant.

Results: Twenty-three patients with DO and 22 age-matched controls met inclusion criteria and were enrolled in the study. Subjects with DO had significantly higher baseline uNGF levels compared to controls (19.82 pg/mg vs. 7.88 pg/mg, $p < 0.002$). Seventeen DO subjects underwent PNE and were evaluated at the end of the testing period. There was a significant improvement in quality of life scores for subjects after PNE compared to baseline (UDI-6: 7.0 vs. 13.7, $p < 0.001$; I-QOL: 87.3 vs. 52.8, $p < 0.0001$), as well as a decrease in median number of leaks (-2.5) and voids (-7.0). Concordantly, uNGF levels significantly decreased from 17.23 pg/mg to 9.24 pg/mg ($p < 0.02$) after PNE.

Conclusion: The uNGF levels were shown to correlate with therapeutic responses in DO subjects undergoing PNE. Subjects with DO had significantly higher uNGF at baseline versus controls, and uNGF levels significantly decreased after only 5 days of sacral nerve stimulation. These findings support a larger study to validate the use of uNGF as an objective tool to assess therapeutic outcome in patients undergoing PNE for sacral neuromodulation.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Dara Shalom: Medtronics, Principal Investigator, Research grant
Nirmala Pillalamarri: Nothing to disclose
Harvey Winkler: Nothing to disclose
Lawrence Lind: Nothing to disclose
Christine Metz: Nothing to disclose

ORAL PRESENTATION 20

Randomized Placebo-Controlled Clinical Trial of the use of Paracervical Block of Bupivacaine with Epinephrine in Laparoscopic Supracervical Hysterectomy

Barr R,[1] Treszezamsky AD,[2] Fenske SS,[1] Rascoff LG,[1] Ascher-Walsh C.[1] [1]Obstetrics, Gynecology, and Reproductive Science, Mount Sinai School of Medicine, New York, New York; [2]Consultants in Women's Health, San Antonio, Texas

Objectives: To determine if patients who receive a paracervical block of bupivacaine with epinephrine prior to skin incision during laparoscopic supracervical hysterectomy have lower admission rates, less post-surgical pain, and require less pain medication than patients who receive a normal saline (NS) paracervical injection.

Materials and methods: Patients scheduled to undergo a laparoscopic supracervical hysterectomy, laparoscopic myomectomy, or robotic-assisted laparoscopic myomectomy were randomized to receive a 20 cc paracervical injection of either 0.25% bupivacaine with 1:200000 epinephrine or NS prior to skin incision. All care providers and patients were blinded to the treatment group. The study was conducted at an academic medical center with a single attending surgeon. All procedures were scheduled as ambulatory and 230 patients were needed to demonstrate a difference in admissions of 50%. Data was also collected on post-operative pain medication. Pain scores based on a visual analog scale were recorded at 1, 2, and 4 hours and 1 and 2 days post operation. Analysis was performed using a t-test, chi-square, Wilcoxon, ANOVA, and modified Poisson regression model.

Results: Of the 230 patients enrolled in the study from September 2011 to September 2013, 132 underwent laparoscopic supracervical hysterectomy. Of those, 68 were randomized to the bupivacaine group and 64 to the placebo group. Pertinent findings are listed in the Table. The demographics did not differ between groups. The bupivacaine group did not have a lower admission rate than the placebo group. Pain medication use was similar in the PACU but narcotics use at home was significantly less in the bupivacaine group than the placebo group while the use of ibuprofen and acetaminophen was higher in the bupivacaine group. Both groups used narcotics and over the counter analgesics for a similar number of post-operative days. Estimated blood loss (EBL) was lower in the bupivacaine group. Complication rates were similar between groups.

Conclusion: Compared to placebo, patients receiving a paracervical block with bupivacaine plus epinephrine required less narcotics for pain relief after laparoscopic supracervical hysterectomy, used more over the counter analgesics, and had lower EBL although the rates of admission were similar between the two groups.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Table
Pertinent Study Findings

	Bupivacaine	Placebo	p value
Estimated blood loss (ml)^	149 (10-800)	177 (25-900)	0.0436
Operating time (min)	89	99	0.3920
Mass of specimen (g)	377.5	443.5	0.4872
Hospital admission	28 (41%)	18 (28%)	0.1225
Length of narcotic use (days)	2	3	0.7442
Rate of narcotic use (tablets/day)	0.58	0.71	0.0051
Length of non-narcotic analgesia use (days)	2	2	0.7593
Rate of non-narcotic analgesia use (tablets/day)	1.02	0.77	< 0.0001
Pain score 1 hour post surgery	4.32	4.72	0.3558
Pain score 2 hours post surgery	3.40	4.00	0.1612

^Median (range).

Rachel Barr: Nothing to disclose
Alejandro D. Treszezamsky: Nothing to disclose
Suzanne S. Fenske: Nothing to disclose
Lauren G. Rascoff: Nothing to disclose
Charles Ascher-Walsh: Nothing to disclose

ORAL PRESENTATION 21

Venous Thromboembolic Events (VTE) in Reconstructive Pelvic Surgery

Mueller M,[1] Pilecki M,[2] Catanzarite T,[1] Kim JY,[2] Kenton K.[1] [1]OB/GYN, Northwestern University, Chicago, Illinois; [2]Surgery, Northwestern University, Chicago, Illinois

Objectives: To determine the incidence and risk factors for VTE in women undergoing reconstructive pelvic surgery for incontinence (UI) and/or pelvic organ prolapse (POP).

Materials and methods: Using the American College of Surgeon's National Surgical Quality Improvement Program (ASC-NSQIP) registry, we identified patients who underwent surgery for UI and/or POP from 2006-2010 based on Current Procedural Terminology (CPT) codes specific to urogynecologic surgery. VTE was defined as deep vein thrombosis (DVT) or pulmonary embolism (PE) diagnosed by venous duplex scan, venogram, or CT scan requiring anticoagulation within 30 days of surgery. Demographic characteristics (age, body mass index [BMI], and race), co-morbidities (diabetes, hypertension, chronic obstructive pulmonary disease, congestive heart failure, smoking status, and functional status), and operative characteristics (operative time, length of stay [LOS], in-patient status, and ASA class [American Society of Anesthesiology Physical Status classification]) were extracted from the database. We assumed that surgeons adhered to the American College of Chest Physicians risk classification for VTE in surgical patients' prevention strategy guidelines. Peri-operative variables were analyzed using chi-squared tests and student's t-tests for categorical and continuous variables. We performed a multiple logistic regression to control for confounding variables.

Results: A total of 20,687 women underwent urogynecologic surgery during study period (Table 1). Sixty-nine women were diagnosed with VTE for a rate of 0.3%. Increasing age ($p = 0.003$), longer LOS ($p < 0.001$), longer operative time ($p < 0.001$), inpatient status ($p = 0.001$), poorer functional status ($p < 0.001$), and higher ASA classification (0.001) were associated with increased risk for VTE (Table 2). On multivariate analysis, specific predictors for VTE included in-patient hospital status (OR, 7.69, $p < 0.001$), higher ASA classification (OR, 2.70, $p < 0.001$), and emergency intervention (OR, 3.65, $p = 0.008$).

Conclusion: The rate of VTE following reconstructive pelvic surgery is very low. Not surprisingly, patients undergoing inpatient surgery with higher ASA classifications and requiring emergency intervention were at highest risk for VTE.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Table 1
Procedures Performed

Type of surgery	No.	% (n = 20,687)
Vaginal apical repairs	2809	13.6
MIS apical repairs	1150	5.3
Abdominal apical repair	674	3.3
Anterior and/or posterior repair	8757	42.3
Vaginal closure procedure	316	1.5
Vaginal mesh procedures	1771	8.6
Incontinence procedures	10,907	52.7
Concomitant Vaginal Hysterectomy	320	1.5
Concomitant Abdominal Hysterectomy	1592	7.7
Concomitant Laparoscopic Hysterectomy	663	3.2

* A total of 28,959 operative procedures were performed on 20,687 women.

Margaret Mueller: Nothing to disclose
Matthew Pilecki: Nothing to disclose
Tatiana Catanzarite: Nothing to disclose
John Y. Kim: Nothing to disclose
Kimberly Kenton: Nothing to disclose

Table 2
Perioperative variables

	VTE N = 69	No VTE N = 20618	p value
Age (yrs)	62.5	57.8	0.003
Length of stay (days)	10.23	1.85	< 0.001
Operative time (min)	219.9	111.9	< 0.001
Inpatient status	66	11495	< 0.001
Dependent functional status	6	198	< 0.001
ASA level 3-5	42	5190	< 0.001

ORAL POSTER 01

Peri- and Postoperative Outcomes after Robotic-Assisted and Conventional Laparoscopic Sacrocolpopexy

Unger CA, Paraiso MR, Jelovsek J, Barber MD, Ridgeway B. Center for Urogynecology and Reconstructive Pelvic Surgery, Obstetrics, Gynecology & Women's Health Institute, Cleveland Clinic, Cleveland Clinic, Cleveland, Ohio

Objectives: To describe perioperative and postoperative outcomes in patients undergoing conventional laparoscopic sacrocolpopexy (LSC) and robotic-assisted laparoscopic sacrocolpopexy (RA LSC).

Materials and methods: This is a retrospective chart review of all women who underwent LSC and RA LSC with or without concomitant hysterectomy and/or rectopexy at a tertiary care urogynecology practice between 2006 and 2012. Subjects were identified by their CPT codes and the electronic medical record was queried for demographic, perioperative and postoperative data.

Results: Three hundred ninety-eight subjects were identified as having undergone either LSC or RA LSC with 35 (8.8%) patients undergoing concomitant rectopexy. Mean age and BMI of subjects were 58 (±10) and 27.5 (±4.9), respectively. RA LSC subjects were older (60 ± 9 vs. 57 ± 10, $p = 0.006$) and more likely to be postmenopausal (88% vs. 78%, $p = 0.01$) compared to the LSC group. Operating room (OR) time defined as in room to out of room (300 minutes ± 63.4 vs. 346 ± 60, $p < 0.001$) and case time defined as incision to close (235 ± 59.8 vs. 274 ± 55.9, $p < 0.001$) were longer for RA LSC compared to LSC. Concomitant hysterectomy was associated with longer OR and case times; times remained longer for RA LSC compared to LSC: 361 ± 68 vs. 308 ± 66, $p < 0.001$ and 299 ± 62 vs. 240 ± 60, $p < 0.001$. Twenty-six percent (102/398) of subjects underwent concomitant hysterectomy (79% supracervical, 21% total) with no differences in outcomes between subjects who underwent concomitant hysterectomy and those who did not. A total of 3.4% of RA LSC were converted to conventional LSC; there were no conversions to abdominal sacrocolpopexy in either group. After controlling for age, BMI, tobacco use, prior laparotomy, concomitant hysterectomy, and rectopexy, RA LSC cases were associated with a higher intraoperative bladder injury rate (2.5% vs. 0%, $p = 0.01$). Concomitant rectopexy was associated with a higher risk of EBL >500 cc (2.9% vs. 0.3%, $p = 0.04$), pelvic/abdominal abscess formation (11.4% vs. 0.8%, $p < 0.001$) and osteomyelitis (5.7% vs. 0%, $p < 0.001$). Osteomyelitis occurred equally in RA LSC and LSC cases. Median follow-up for all patients was 195 days (IQ range, 73.5-427). Five percent of subjects required interval intervention for stress urinary incontinence: 2.8% (11/398) midurethral sling and 2.3% (9/398) transurethral bulking. A total of 2.8% (11/398) experienced vaginal mesh erosion; 63.6% (7/11) were sacrocolpopexy and 36.4% (4/11) were midurethral mesh erosions.

The rate of erosion was not statistically different for subjects who underwent concomitant hysterectomy compared to those that did not, 2.0% (2/102) vs. 3.0% (9/296), p = 0.65. A total of 2.5% (10/398) of subjects underwent reoperation for pelvic organ prolapse (POP); patients who underwent RA LSC were more likely to undergo reoperation for POP when compared to LSC cases (5.0% vs. 1.2%, p = 0.02) and there were no differences between patients who underwent concomitant hysterectomy compared to those who did not.

Conclusion: Perioperative and postoperative outcomes after RA LSC and LSC are favorable with few adverse outcomes. RA LSC is associated with a higher rate of bladder injury and reoperation for recurrent POP. Concomitant rectopexy has a higher rate of postoperative abscess and osteomyelitis complications.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Cecile A. Unger: Nothing to disclose
Marie Fidela R. Paraiso: Nothing to disclose
J Eric Jelovsek: Nothing to disclose
Matthew D. Barber: Nothing to disclose
Beri Ridgeway: Nothing to disclose

ORAL POSTER 02

Transvaginal versus Transabdominal Placement of Synthetic Mesh at Time of Sacrocolpopexy

Nosti PA, Carter CM, Sokol AI, Park AJ, Iglesia C, Gutman RE. Obstetrics & Gynecology, Division of Female Pelvic Medicine & Reconstructive Surgery, Medstar Washington Hospital Center/Georgetown University School of Medicine, Washington, DC

Objectives: To compare surgical outcomes and complications between patients undergoing laparoscopic sacral colpopexy with concomitant transvaginal hysterectomy and vaginally placed synthetic mesh (TVH-LSC) versus laparoscopic supracervical hysterectomy with laparoscopic placement of mesh (LSH-LSC).

Materials and methods: We performed a retrospective cohort study with prospective follow-up for all patients with uterovaginal prolapse who underwent TVH-LSC and LSH-LSC from June 2008 to July 2012. Patients with vault prolapse, those undergoing TVH or TLH with laparoscopic mesh attachment, and laparoscopic sacrohysteropexy were excluded. We collected baseline demographics, intraoperative and postoperative complications, and POP-Q data. We attempted to contact all patients in order to conduct telephone questionnaires and requested those that had not been seen within the past 12 months to return for examination. We evaluated composite outcomes including: (1) anatomic cure defined as no prolapse at or beyond the hymen and no apical prolapse beyond the mid-vagina; and (2) subjective cure defined as the absence of bulge symptoms and PGI-I response of very much better or much better.

Results: One hundred eighty-three patients were included in the study: 124 TVH-LSC and 59 LSH-LSC. There were no differences in mean age, BMI, ethnicity, parity, menopausal status, and smoking history. Patients in the TVH-LSC group had more severe (stage III or IV) preoperative prolapse compared to the LSH-LSC group (72% vs. 53%, p = 0.03). Patients undergoing TVH-LSC had a shorter operative time compared to LSH-LSC (256 ± 53 minutes vs. 344 ± 81 minutes, p < 0.01). There was no difference in the use of robotic assistance between groups (43.6% TVH-LSC vs. 57.6% LSH-LSC, p = 0.07). With the exception of posterior repairs (94% TVH-LSC vs. 80% LSH-LSC, p < 0.01), a similar number of concomitant procedures were performed in each group. Patients undergoing TVH-LSC had increased blood loss (144 ± 95 mL vs. 115 ± 82 mL, p = 0.03). There was no difference in mean overall follow-up time (22 ± 14 vs. 24 ± 17 months, p = 0.4) and mean examination follow-up (12 ± 12 vs. 13 ± 13 months, p = 0.8) between groups. There was no difference in anatomic (94.4% TVH-LSC vs. 93.2% LSH-LSC, p = 0.8), subjective (93.3% vs. 87.1%, p = 0.3), or composite (90.7% vs. 80.7%, p = 0.2) success between groups. In addition, there was no difference in the rate of mesh erosions requiring a return to the operating room (2.4% vs. 0%, p = 0.6). Both groups had similar rates of suture erosion (1% vs. 2%, p = 1.0) and granulation tissue (10% vs. 7%, p = 0.6) all of which were managed in the office. Seventy-five of 124(60%) of TVH-LSC and 31/59(53%) of LSH-LSC completed telephone questionnaires. There was no difference in patient response to the rate of recurrent prolapse surgery (1.3% vs. 3.1%, p = 0.5), vaginal bleeding (7.9% vs. 15.6%, p = 0.22), or surgery for mesh complications (4% vs. 3.1%, p = 0.8) between groups.

Conclusion: Vaginal mesh attachment during TVH-LSC decreased operative time by over 1 hour with no differences in intra-operative complications, reoperation for recurrent prolapse, mesh complications, and composite outcomes compared to LSH-LSCP.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Patrick A. Nosti: Nothing to disclose
Charelle M. Carter: Nothing to disclose
Andrew I. Sokol: Nothing to disclose
Amy J. Park: Nothing to disclose
Cheryl Iglesia: Nothing to disclose
Robert E. Gutman: Nothing to disclose

ORAL POSTER 03

A Comparison of Perioperative Outcomes in Women with Different Body Mass Indices after Laparoscopic Sacrocolpopexy

Lee K,[1] Whiteside JL,[2] Prescott L,[1] Kinsler E,[1] Strohbehn K.[2] [1]Department of Obstetrics & Gynecology, Dartmouth Hitchcock Medical Center, Lebanon, New Hampshire; [2]Department of Obstetrics and Gynecology, Geisel School of Medicine at Dartmouth; Division of Female Pelvic Medicine and Reconstructive Surgery, Dartmouth Hitchcock Medical Center, Lebanon, New Hampshire

Objectives: Because obesity is often suggested as a risk factor for surgery, this study sought to compare perioperative outcomes of women with different body mass index (BMI) after undergoing laparoscopic mesh sacrocolpopexy (LSC).

Materials and methods: This is a retrospective cohort study of women who underwent LSC between 2004 and 2011 at a single medical center. BMI categories were defined as normal (18-24.9), overweight (25-29.9), or obese (30+). The primary outcome was operating time. Secondary outcomes included: complication rates, days in hospital, post-operative prolapse stage, failure rate, post-operative Incontinence Severity Index (ISI) score, and subsequent prolapse or incontinence procedures. Definition of failure was any post-operative POP-Q value zero or greater. Student's t-test was used for continuous variable comparison, and a non-parametric Wilcoxon rank sum test was used for dichotomous variables. Chi-square analyses were used for data stratified by BMI group. Multiple regression analyses controlling for patient age, concurrent procedures, and surgeon were used to analyze operating time, post-operative ISI score, and future procedure rate. For all analyses, a p value of <0.05 (two-sided) was considered statistically significant.

Results: Of 351 charts reviewed, there were 108 normal, 137 overweight, and 106 obese BMI patients. Pre-operative patient characteristics were similar except that hypertension and diabetes were more prevalent in obese patients (p = 0.0016 and p = 0.049, respectively). Frequency of concurrent incontinence surgery (64.7%), posterior colporrhaphy (33.3%), and hysterectomy (56.4%) did not differ with BMI group, nor did complication rates or post-operative prolapse stage (0, 1, and 2 in 33%, 46%, and 21% of cases, respectively). Mean operating time (175 minutes) and mean hospital stay (1.29 days) did not vary between the groups. Operating time increased with concurrent procedures ($p \leq 0.0001$) and different surgeons ($p < 0.0001$). Operating time was influenced by patient age, concurrent procedures, and surgeon ($p < 0.0001$ for all), but not by BMI category (p = 0.33). Colpopexy failure occurred in 10 overweight women (7.3%) compared to 1 normal weight (0.9%) and 3 obese (2.8%) patients (p = 0.034). BMI did not

impact post-operative ISI score (normal vs. obese odds ratio [OR], 0.98, 95% confidence interval [CI], 0.49-1.95, and overweight vs. obese OR, 1.12, 95% CI, 0.56-2.20), but patient age did affect ISI score (OR, 0.95, 95% CI, 0.92-0.98). BMI also did not influence the rate of future procedures (OR, 0.73 for normal vs. obese, 95% CI, 0.3-1.78, and 0.83 for overweight vs. obese, 95% CI, 0.37-1.87). Concurrent hysterectomy increased the rate of future procedures (OR, 2.48, 95% CI, 1.19-5.15).

Conclusion: Perioperative outcomes of women undergoing LSC were similar among different BMI groups, except for a higher failure rate within 1 year of surgery in the overweight BMI group. Operating time was significantly influenced by patient age, surgeon, and concurrent procedures, and future procedures were more frequent in women undergoing concurrent hysterectomy. Increased BMI is therefore not a strong contraindication for LSC.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Kaitlin Lee: Nothing to disclose
James L. Whiteside: International Academy of Pelvic Surgery, Editorial Board member, Honoraria; Ethicon Women's Health, Consultant, Nothing received to date
Lauren Prescott: Nothing to disclose
Erron Kinsler: Nothing to disclose
Kris Strohbehn: Nothing to disclose

ORAL POSTER 04

Laparoscopic Morcellator-Related Complications

Milad M, Milad E. Obstetrics and Gynecology, Northwestern University, Chicago, Illinois

Objectives: Morcellation at laparoscopy is a commonly used minimally invasive method to extract bulky tissue from the abdomen without extending abdominal incisions. Despite widespread use, morcellator complications still remain underreported and poorly summarized. We undertook a systematic review to identify and collate the morcellator-related injuries and "near-misses" associated with powered tissue removal.

Materials and methods: MEDLINE, PubMed, MedSun, and the FDA device database (MAUDE) were search for eligible reports. We used the following search terms: "morcellator," "retained," "morcellation," "parasitic," as well as model name keywords "Rotocut," "Morcellex," "X-Tract," "PlasmaSORD," "MOREsolution," "Powerplus," "Steiner," and "SAWALHE".

Results: A total of 55 complications were identified. Injuries included vascular (35) small and large bowel (33), bladder (3), ureter (3), kidney (3), and diaphragm (1). Of these injuries, 9 involved more than one organ. Complications were identified intraoperatively in the majority of patients (n = 37, 66%), but in other cases did not present until up to 10 days postoperatively. Surgeon inexperience was identified as a contributing factor in at least 4 cases. There were six deaths attributed to morcellator-related complications. Nearly all major complications were identified from the FDA device database and not from the published literature. Retained tissue resulting in reoperation was reported in at least 11 cases. In thirty-nine cases, a morcellator malfunction prompted device replacement or conversion to laparotomy.

Conclusion: The laparoscopic morcellator has significantly expanded our ability to complete procedures using minimally invasive techniques. Associated with this opportunity have been increasing reports of major and minor complications. These complications go largely unreported likely due to publication bias associated catastrophic events. Surgeon experience likely confers some protection against these injuries. Understanding and implementing safe practices associated with the use of the laparoscopic morcellator will reduce these iatrogenic injuries.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Magdy Milad: Nothing to disclose
Elizabeth Milad: Nothing to disclose

ORAL POSTER 05

Analysis of Non-Surgical, Ablative, and Hysteroscopic Treatments before Hysterectomy for Benign Conditions and of Uterine Pathology in a Statewide Hospital Collaborative

Corona LE,[2] Swenson CW,[1] Sheetz KH,[1] Shelby G,[1] Berger MB,[1] DeLancey JO,[1] Morgan DM.[1] [1]Obstetrics & Gynecology, University of Michigan, Ann Arbor, Michigan; [2]Wayne State University School of Medicine, Detroit, Michigan

Objectives: To analyze the use of non-surgical, ablative, and hysteroscopic treatments prior to hysterectomy and the uterine pathology in three age groups of women.

Materials and methods: The Michigan Surgery Quality Collaborative (MSQC) consists of 52 Michigan hospitals voluntarily reporting peri-operative data to promote surgical quality improvement. The cohort for this analysis included women who underwent hysterectomy between January 1 and May 6, 2013, at an MSQC hospital for abnormal uterine bleeding, uterine fibroids, chronic pelvic pain, and/or endometriosis. Women were excluded when a pre-operative indication of gynecologic cancer, pelvic mass, family history of cancer, or prolapse was identified. Abstracted data included the pre-operative non-surgical treatments (hormonal therapy, a progesterone intrauterine device, pain management) as well as endometrial ablation and hysteroscopic surgery. The pathologists' findings from the hysterectomy specimens were also recorded. Women were divided into age groups of <40, 40-50, and >50 years of age for analysis. Pathology reports were classified as "supportive" if fibroids, endometriosis, endometrial hyperplasia, adnexal pathology, or unexpected cancer were reported, and classified as "unsupportive" if the report was negative for disease. Chi-square analysis was performed for categorical variables and analysis of variance for continuous measures (Stata v12).

Results: Of the 815 women who underwent hysterectomy, 57% (n = 462) met inclusion criteria. A pathology report negative for disease was identified in 20% (n = 91). Non-surgical, ablative, or hysteroscopic treatment were not documented in 34% (n = 159), and among these women, pathology was negative for disease in 17% (27/159). Women <40 years, were more likely to have received non-surgical and hysteroscopic treatment prior to hysterectomy when compared with those 40-50 and >50, (78% vs. 62% vs. 55%, p = 0.001). "Unsupportive" pathology (40% vs. 14.1% vs. 4.8%, $p < 0.001$) and smaller uteri (128 ± 105 gm vs. 283 ± 426 gm vs. 296 ± 311 gm, $p < 0.001$) were also found more often among women <40 years compared to those 40-50 or >50.

Conclusion: One third of women undergoing hysterectomy for benign conditions do not have other treatments documented prior to extirpative surgery. Comment: The rate of negative pathology and smaller specimen weights among women <40 years suggests that efforts to increase the use of non-surgical or ablative treatments prior to hysterectomy among this group might be effective in decreasing the number of hysterectomies performed.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Lauren E. Corona: Nothing to disclose
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Mitchell B. Berger: Nothing to disclose
John O. DeLancey: Nothing to disclose
Daniel M. Morgan: Nothing to disclose

ORAL POSTER 06

Comparison of Perioperative Complications by Route of Hysterectomy Performed for Benign Conditions

Rahimi S,[1] Jeppson PC,[2] Cichowski S,[3] Westermann L,[4] Gattoc L,[5] Raker CA,[2] LeBrun E E Weber,[6] Sung V.[2] [1]Obstetrics and Gynecology, Division of Female Pelvic Medicine & Reconstructive Surgery, Mount

Table
Peri-operative complications by hysterectomy type

	Total Vaginal	Total Abdominal	Abdominal Supracervical	Laparoscopic Assisted Vaginal	Total Laparoscopic	Laparoscopic Supracervical	Total Robotic	Robotic Supracervical	p value
Pre-Robot n (%)	312 (42.3)	165 (22.4)	43 (5.8)	153 (20.7)	12 (1.6)	53 (7.2)			
Intraoperative Complications n (%)	13 (4.2)	14 (8.5)	6 (14.0)	7 (4.6)	0 (0.0)	1 (1.9)			0.06
Post-operative Complications n (%)	12 (3.8)	11 (6.7)	2 (4.7)	4 (2.7)	0 (0.0)	0 (0.0)			0.30
Post-Robot n (%)	216 (30.0)	126 (17.5)	16 (2.2)	81 (11.2)	84 (11.7)	33 (4.6)	130 (18.0)	35 (4.9)	
Intraoperative Complications n (%)	6 (2.8)	22 (17.5)	2 (12.5)	4 (4.9)	5 (6.0)	0 (0.0)	5 (3.8)	0 (0.0)	0.0001
Post-operative Complications n (%)	3 (1.4)	13 (10.3)	0 (0.0)	2 (2.5)	1 (1.2)	0 (0.0)	2 (1.5)	2 (5.7)	0.002

Sinai Hospital, New York, New York; [2]Obstetrics and Gynecology, Brown University, Providence, Rhode Island; [3]Obstetrics and Gynecology, University of New Mexico, Albuquerque, New Mexico; [4]Obstetrics and Gynecology, TriHealth Program - Good Samaritan Hospital, Cincinnati, Ohio; [5]Obstetrics and Gynecology, Wayne State University, Detroit, Michigan; [6]Obstetrics and Gynecology, University of Florida College of Medicine, Gainesville, Florida

Objectives: Although robotic hysterectomy has been adopted by many institutions, associated complications compared to other hysterectomy routes have not been well studied. Our aim is to compare intraoperative complications by route of hysterectomy and complication trends before and after the introduction of robotic surgery.

Materials and methods: This is an ancillary analysis of a multicenter, retrospective cohort study with historical controls through the Fellows' Pelvic Research Network. Cases, hysterectomies for benign conditions, were collected from the year prior to introduction of the robot (pre-robot) and the year after introduction of the robot (post-robot). Representative annual case distributions for each institution was obtained by selecting 20 cases per month using stratified random sampling. Demographic information and peri-operative data were collected. Categorical variables were compared using chi-square or Fisher's exact test, continuous parametric variables using T-test or ANOVA and nonparametric data using Wilcoxon rank-sum or Kruskal-Wallis test. We adjusted for institutional data with Mantel-Haenszel test for categorical variables and ANOVA for continuous variables.

Results: One thousand four hundred fifty-nine cases from 4 institutions were included. Demographic data are as follows, expressed as median (range): age 46 (19-86), BMI 28.4 (12.6-72.4), parity 2 (0-10). Most hysterectomies were performed by generalists in both pre-robotic and post-robotic periods, 75% and 80%, respectively. In the pre-robotic period, intra-operative complications did not differ significantly among approaches, ranging from 0% (total laparoscopic) to 14% (abdominal supracervical). No significant differences in post-operative complications were noted in this period among approaches ($p > 0.05$). In the post-robotic period, intraoperative complications were higher for total abdominal than laparoscopic/robotic hysterectomy (17.5% vs. 0%, respectively, $p < 0.05$). For postoperative complications, total abdominal hysterectomy had the highest number of complications (10.3%) and supracervical hysterectomy (laparoscopic or abdominal) had the lowest (0%). Comparing pre-robotic and post-robotic periods, the proportion of intraoperative complications did not differ (5.6% pre-robot vs. 6.1% post-robot, $p > 0.05$). However, when analyzed by injury type, higher rate of ureteral injury was seen in the post-robotic (11.4%, n = 5) compared to the pre-robotic period (2.4%, n = 1, p = 0.05).

Conclusion: In the pre-robotic period, intraoperative and postoperative complications rates were similar among different hysterectomy approaches. In the post-robotic period, there were higher rates of intraoperative complications in the open abdominal approaches (abdominal total and supracervical hysterectomy) compared to the minimally invasive approaches (laparoscopic and robotic).

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Salma Rahimi: Nothing to disclose
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Sara Cichowski: Nothing to disclose
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Emily E. Weber LeBrun: Nothing to disclose
Vivian Sung: Nothing to disclose

ORAL POSTER 07

Retrospective Case-Controlled Study to Compare the Effectiveness of IV-Acetaminophen Administered Intra-Operatively

Lessick JN,[1] Schmitt JJ,[1] Schrop EM,[1] Ramih E,[2] Gothard M,[3] Roulette G,[1] McCarroll ML,[1] Flora RF,[1] Smith MP,[1] Fenton BW.[1]
[1]Obstetrics and Gynecology, Summa Health System, Akron, Ohio; [2]College of Public Health, Kent State University, Kent, Ohio; [3]Biostats, Canton, Ohio

Objectives: Inadequate pain control is a limiting factor in the patient's postoperative experience, often leading to unnecessary pain and cost, as well as prolonged recovery time. The purpose of the study was to evaluate the effect of intravenous (IV) acetaminophen on postoperative opioid consumption of women undergoing hysterectomy by any route. Antiemetic use and post-anesthesia care unit (PACU) length of stay were evaluated as secondary outcome measures.

Materials and methods: The electronic medical records of n = 966 women undergoing hysterectomy between January 1, 2010, and July 1, 2013, by any route for both benign conditions and gynecologic malignancies were reviewed. Patients were grouped according to whether intra-operative IV acetaminophen administration was given or not. The primary outcome collected was opioid consumption converted to morphine equivalents. Antiemetic requirements, ketorolac administration, and PACU length of stay were also abstracted. Patients were evenly grouped according to IV acetaminophen administration: non-IV acetaminophen group (MOR) and IV acetaminophen group (ACT) randomly paired based on procedure. The groups were matched for the presence of concomitant urogynecologic procedures including midurethral sling, sacrocolpopexy, pelvic floor reconstruction, and conversion from the primary procedure.

Results: Patients were divided evenly between groups, which were statistically equivalent for demographic information including age, marital status, insurance, smoking status, BMI, and route of hysterectomy. Routes of hysterectomy included total abdominal (n = 126), laparoscopic assisted vaginal (n = 109), robotic (n = 171), vaginal (n = 58), total laparoscopic (n = 9), supracervical abdominal (n = 7), and supracervical laparoscopic (n = 3). There was a significant reduction (p = 0.004) in PACU length of stay in the ACT group of women 116.5 (±46.22) minutes compared to the MOR group of women 125.7 (±52.30) minutes. Ketorolac administration was significantly lower ($p < 0.001$) in the ACT group 0.3 (±0.52) doses vs. 0.1 (±0.31) doses. Antiemetic doses were also significantly lower (p = 0.024) with the ACT group requiring fewer doses 0.2 (±0.48) versus 0.3 (±0.61) doses in the MOR group. Estimated blood loss and total procedural length did not differ significantly between groups. The ACT group received 11.4 mg (±9.80) morphine equivalents

versus the MOR group received 11.2 mg (±8.83); these doses were also not significantly different.

Conclusion: Women undergoing hysterectomy who received intra-operative IV acetaminophen required significantly less PACU time, ketorolac doses, and antiemetics than women who did not. Although the study found no significant difference in opioid consumption between the two groups, receiving IV acetaminophen positively affected many other measures of patient recovery. These results strongly suggest that intra-operative administration of IV acetaminophen can improve patient recovery and decrease time in the PACU.

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M. David Gothard: Nothing to disclose
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Michael P. Smith: Cadence Pharma, Co-Investigator - Grant to Summa Health System, Grant from Cadence Pharmaceuticals
Bradford W. Fenton: Cadence Pharma, Principal Investigator - Grant to Summa Health System, Grant from Cadence Pharmaceuticals

ORAL POSTER 08

Nationwide Trends in the Safety of Inpatient Hysterectomy from 1998-2010

Kho KA,[1] Rosero EB,[2] Joshi G,[2] Schaffer JI.[1] [1]Obstetrics and Gynecology, UT Southwestern, Dallas, Texas; [2]Anesthesiology and Pain Management, UT Southwestern, Dallas, Texas

Objectives: To examine the rate of complications associated with inpatient hysterectomy over the past 13 years and to determine if specific complications have changed over this time period.

Materials and methods: The Nationwide Inpatient Sample (NIS) was used to identify all women over age 18 years who underwent inpatient hysterectomy for benign indications between 1998 and 2010. Complications were determined based on ICD-9-CM codes and weighted estimates were calculated. Multivariable logistic regression modeling was used to determine whether the probability of complications have changed over time while controlling for demographics, comorbidities, hospital characteristics, payor, indication for surgery, concurrent procedures, and route of hysterectomy. Trends in complication rates were examined for all hysterectomies, as well as specifically for the various routes of hysterectomy.

Results: We identified 6,649,306 women who underwent inpatient hysterectomy for benign indications between 1998 and 2010. Of those, 4,178,252 (63.0%) underwent abdominal hysterectomy, 1,467,659 (22.1%) vaginal, 917,747 (13.9%) laparoscopic, 45,186 (0.7%) robotic, and 19,158 (0.3%) radical hysterectomy for benign indications ($p < 0.1$). Mean Charlson comorbidity scores steadily increased over time (0.18 vs. 0.32, $p < 0.0001$). Similarly, the age of women undergoing hysterectomy increased from a median of 44 years (Interquartile range [IQR], 38-50) in 1998 to a median of 46 years (IQR, 40-52) in 2010 ($p < 0.001$). The unadjusted mortality rate decreased from 0.006% to 0.002%. The likelihood of death from hysterectomy was approximately two and a half times higher in 1998 than in 2010 (OR, 2.42, 95% CI, 1.55-3.76, $p < 0.0001$). Notably, the likelihood of hemorrhage, blood transfusion, and accidental laceration of an organ increased significantly over this period (OR, 1.02, CI, 1.01-1.03, $p = 0.002$; OR, 1.09, CI, 1.08-1.10, $p < 0.0001$; and OR, 1.02, CI, 1.01-1.02, $p < 0.0001$, respectively). Similarly the odds of VTE, pneumonia, and ileus increased as well (OR, 1.02, CI, 1.00-1.03, $p = 0.003$; OR, 1.028, CI, 1.02-1.04, $p < 0.0001$; and OR, 1.02, CI, 1.01-1.03, $p < 0.0001$, respectively). In contrast, the rate of infections decreased over time (OR, 0.96, CI, 0.95-0.97, $p < 0.001$) but there was no difference in wound disruptions (OR, 1.00, CI, 0.99-1.02, $p = 0.44$). Average hospital length of stay (LOS) decreased from a mean of 2.96 days in 1998 to a mean of 2.32 days in 2010.

Conclusion: Despite the average woman undergoing hysterectomy for benign indications being older and less healthy, the low mortality rate and hospital length of stay decreased. While infection rates decreased, several complications increased significantly, including hemorrhage, accidental laceration of an organ, VTE, and pneumonia. It is possible that the diffusion of newer technologies and increasing rate of minimally invasive procedures may explain the higher rate of certain non-fatal complications during this period.

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Kimberly A. Kho: Nothing to disclose
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ORAL POSTER 09

Descending Perineum Syndrome: A Fresh Look at an Interesting and Complex Pelvic Floor Disorder

El-Nashar SA, Occhino JA, Trabuco E, Gebhart J, Klingele C. Obstetrics and Gynecology, Mayo Clinic, Rochester, Minnesota

Objectives: Descending Perineum Syndrome (DPS) is a rare but complex clinical entity of pelvic floor dysfunction presenting mostly with defecatory dysfunction and to lesser extent can cause voiding dysfunctions. Despite early interest and well characterization of DPS in the literature, to date, there is no consensus on the best approach for treatment. Biofeedback and physical therapy can in mild cases. In this study, we constructed the cohort of patients who have been diagnosed with DPS and underwent surgical treatment at Mayo Clinic, Rochester, from January 1, 2002, through September 1, 2013.

Materials and methods: This is a historical cohort study. The Mayo Clinic Electronic Medical Record Linkage System was utilized to identify participants. The Mayo Clinic surgical index was searched using the corresponding ICD-9 codes related to sacrocolpopexy along with Halban and Moschowitz culdoplasty. This was further word searched for phrases related to DPS including "perineal descent," "hernia of Douglas pouch," and "peritoneocele." Medical records were reviewed to verify the selection and document diagnosis of DPS based on criteria from magnetic resonance imaging (MRI) defecography or clinical examination of perineal ballooning. Statistical analysis was performed using JMP 9.0 software (SAS Inc., Carey, NC).

Results: Of 93 patients who were identified, only 61 had confirmed diagnosis of DPS. The median age of diagnosis was 56 years (range, 19-84 years), median parity of 2 (range, 0-9) with 9 (15%) that were nulliparas. The median BMI was 24.6 kg/m2 with 10 (16.4%) with BMI >30. Presenting symptoms included defecatory dysfunction with infrequent bowel movement in all patients, with incomplete emptying in 87%, deep perineal pain in 70%, rectal prolapse in 65%, and fecal incontinence in 36%. On MRI, evidence of anatomic abnormality in the anal internal and external anal sphincter along with puborectalis in 30% of cases while functional (Figure). All patients had surgical treatment that included a modified sacrocolpopexy with extension of the mesh the pelvic side wall in 27 patients (44.3%) while 29 patients (47.4%) had some sort of uterosacral plication with culdoplasty, and 4 patients had a combined procedure. Improvement of defecatory dysfunction was noted in 49 patients (80.3%) at their postoperative visit.

Conclusion: DPS is a complex pelvic floor disorder. Diagnosis can be done by physical examination and confirmed by MRI defecography. Surgical treatment can help to improve defecatory dysfunction in selected patients.
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Christopher Klingele: Nothing to disclose

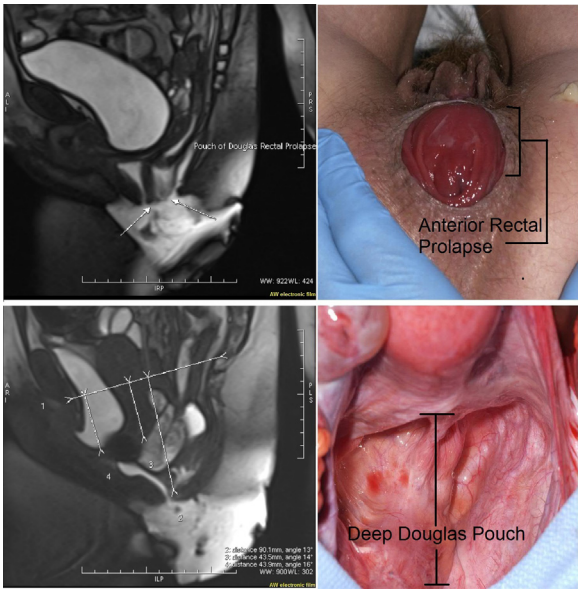

Figure. Example of rectal prolapse and deep Douglas pouch along with MRI findings.

ORAL POSTER 10

Female Pelvic Floor Immersive Simulation: A Randomized Trial to Estimate the Effect of a Virtual Reality Anatomic Model on Resident Knowledge of Female Pelvic Anatomy

Ellington DR,[1] Shum PC,[3] Szychowski JM,[2] Willis HL,[1] Richter HE.[1]
[1]Division of Urogynecology and Pelvic Reconstructive Surgery, University of Alabama at Birmingham, Birmingham, Alabama; [2]Department of Biostatistics, University of Alabama at Birmingham, Birmingham, Alabama; [3]Department of Mechanical Engineering, University of Alabama at Birmingham, Birmingham, Alabama

Objectives: To estimate the effect of a virtual reality (VR) anatomical model (VisCubeSX) on improving knowledge of Obstetrics and Gynecology (OB/GYN) residents regarding female pelvic floor anatomy compared to traditional curriculum.
Materials and methods: A randomized controlled trial of OB/GYN residents from the University of Alabama at Birmingham was conducted. Residents were randomized, stratified by year of training, to traditional curriculum for pelvic anatomy versus traditional curriculum and the VisCubeSX VR anatomic model. Pre-test and post-test were collected to assess baseline and post-intervention knowledge (tests scored 0-100). In addition, a post-intervention technical assessment of the VisCubeSX VR anatomic model was performed. This study had 77% power to detect a difference in examination improvement of 10 points or less. Scores were analyzed with independent sample t-tests for differences between groups and paired t-tests for improvements within groups.
Results: Thirty-one residents were enrolled and randomized. There was no difference in baseline knowledge scores between groups ($p = 0.35$). Mean $\pm$ SD scores improved in both groups: 8.1 $\pm$ 12 points ($p = 0.02$) in the traditional curriculum group and 8.7 $\pm$ 6.4 points ($p < 0.001$) in the VisCubeSX group. These improved scores were not statistically significantly different ($p = 0.26$). However, on average, residents exposed to the VisCubeSX VR anatomic model rated it highly, reporting that they "somewhat" or "strongly agree" that the model improved their knowledge of female pelvic anatomy and that the model will improve their patient care. Furthermore, in all categories except for pelvic vasculature, the residents reported that they "somewhat" or "strongly agree" that the model was easy to navigate and improved their understanding of pelvic anatomy (Table 1).
Conclusion: Limited data exist comparing educational outcomes of traditional curriculum for female pelvic anatomy versus immersive simulation. Despite the lack of a statistically significant difference between resident groups exposed to traditional curriculum and the VisCubeSX VR anatomic model, residents perceive this technology as an enhancement to their learning experience. As immersion technology advances, more robust evaluation of the integration of these media into medical and surgical education will be conducted.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

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Heather L. Willis: Nothing to disclose
Holly E. Richter: Pevalon, Principal Investigator, Research Grant

Table 1
Post-Intervention Assessment of the VisCubeSX VR anatomical model

Variable	N	Mean	SD
Navigation Overall	16	2.125	0.62
Navigation Bony Pelvis	16	1.438	0.63
Navigation Musculature	16	1.500	0.52
Navigation Vasculature	16	3.375	1.20
Navigation Connective Tissue	16	1.438	0.51
Understanding Bony Pelvis	16	1.625	0.72
Understanding Musculature	16	1.500	0.52
Understanding Vasculature	16	3.063	1.18
Understanding Connective Tissue	16	1.563	0.63
Improved Knowledge	16	1.750	0.77
Improved Patient Care	16	1.688	0.70

Scoring ranged from 1-5, 1 = strongly agree to 5 = strongly disagree.

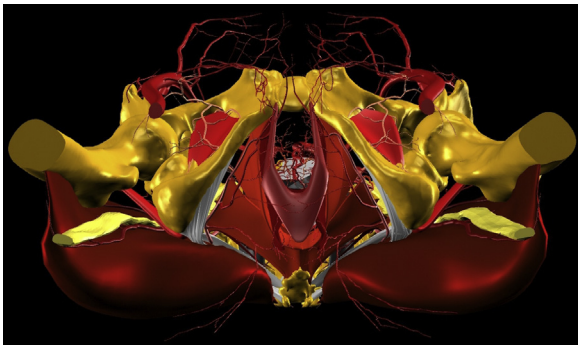


Figure. VisCube Projected Pelvis and Perineum.

ORAL POSTER 11

Anatomic Relationships of the Genito-Femoral and Femoral Nerves to the Psoas Muscle: Clinical Applications to Psoas Hitch Ureteral Reimplantation Procedures

Maldonado PA, Slocum P, Chin K, Corton M. OB/GYN, UT Southwestern Medical Center, Dallas, Texas

Objectives: To describe anatomic variance in the relationship between the genito-femoral and femoral nerves with the psoas minor tendon and psoas major muscle.

Materials and methods: Dissections were performed in five unembalmed female cadavers obtained from the University of Texas Southwestern Medical Center Willed Body Program. The posterior peritoneum was sharply dissected off the underlying the psoas muscles. The anteroposterior (AP) diameter of the pelvic inlet was obtained by measuring the distance between the upper margin of the pubic symphysis and the mid sacral promontory. A reference point on the psoas muscle (point A) was determined by marking the mid width of the muscle cephalad to the inguinal ligament, at a distance half of the AP diameter. Point A represented the approximate location for placement of psoas hitch sutures. Measurements taken included the widths of psoas major muscle, psoas minor tendon, genito-femoral nerve branches, and the femoral nerve deep to the psoas muscle and as it emerged lateral to the muscle. In addition, the depth of the psoas muscle and the distance to the iliac vessels from point A were recorded. The relative location of the genito-femoral and femoral nerves to point A was documented. All measurements were taken twice and median values used for analyses.

Results: All cadavers were white. Median age was 82 (range, 53-94 years old). The median height and weight was 64 inches (range, 60-68 inches) and 125 lbs (range, 100-160 lbs), respectively. The psoas minor tendon was present bilaterally in 20% of specimens, unilaterally in 40%, and absent bilaterally in 40% of specimens. The median width of the psoas minor tendon was 7 mm (range, 3-8 mm). The median psoas major muscle width was 22.5 mm (range, 17.5-20 mm), while the median depth of the muscle (to the underlying femoral nerve) was 22.5 mm (range, 16.5-27.75 mm). The median width of the femoral nerve at its location deep to point A was 6.5 mm (range, 5.75-10.5 mm). The median width of the genito-femoral nerve was 3 mm (range, 2.5-4.25 mm). The genitofemoral nerve was noted to have more than one branch that coursed over the psoas muscle in 40% of specimens. The median distance from the iliac vessels to point A was 13.5 mm (range, 13-15.5 mm).

Conclusion: The importance of avoiding the genito-femoral and femoral nerves during placement of the psoas hitch anchoring sutures is consistently described. Exact placement and location of psoas hitch sutures will vary depending on psoas anatomy and location of the ureteral injury to be repaired. Deficiency or absence of the psoas minor tendon requires direct fixation to the muscle, which may be an inadequate or weak target. Placement of psoas hitch sutures during ureteral reimplantation procedures requires careful dissection and a good understanding of the surrounding anatomic structures in order to avoid nerve injury, especially in the absence of a psoas minor tendon. Knowledge gained from this ongoing descriptive anatomic study may help aid the surgeon in recognizing anatomic relationships to optimize placement of psoas hitch sutures.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Pedro A. Maldonado: Nothing to disclose
Paul Slocum: Nothing to disclose
Kathleen Chin: Nothing to disclose
Marlene Corton: Nothing to disclose

ORAL POSTER 12

Predicting Post-Operative Day #1 Hematocrit after Hysterectomy for Benign Indications

Swenson CW, Lanham MS, Morgan DM, Berger MB. Obstetrics & Gynecology, University of Michigan, Ann Arbor, Michigan

Objectives: The purpose of this study was to evaluate the effects of various demographic and peri-operative variables on post-operative hematocrit (Hct) in women undergoing hysterectomy for benign disease. We then sought to develop a model for predicting hematocrit on post-operative day (POD) #1.

Materials and methods: De-identified demographics and peri-operative data were obtained for hysterectomies performed in the state of Michigan from July 3, 2012, to May 6, 2013, from the Michigan Surgery Quality Collaborative (MSQC) after IRB approval from the University of Michigan (IRB HUM00073978). MSQC is a multidisciplinary quality collaborative of Michigan Hospitals, whose goal is to promote surgical quality improvement. Hysterectomies performed for cancer, obstetrical indications or complicated by need for pre-operative or intra-operative transfusion were excluded. Because the analysis included clustered data from various hospitals, linear mixed models were used for univariable and multivariable analyses.

Results: The model was built using the 1918 hysterectomies from 2012, and validated on the remaining cohort of 366 hysterectomies from 2013. The investigated variables are listed in Table 1. In the final multivariable model, factors associated with a higher POD #1 Hct included weight, pre-operative Hct, and white or black race, and those associated with a lower POD #1 Hct included pre-operative platelet count, estimated blood loss, volume of intra-operative crystalloid, and the use of intra-operative colloid (Table 2). The distribution of surgical approach for hysterectomy did not differ between the model development and validation cohorts ($p = 0.46$). This model was able to predict POD #1 Hct within 4% points of the actual value 91.3% of the time.

Conclusion: Our robust model, based on a large number of hysterectomies for benign disease from a statewide database, is able to predict POD #1 Hct accurately. This model could help support the practice of selectively ordering post-operative hematocrit after hysterectomy in a clinically thoughtful and cost-effective manner.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Carolyn W. Swenson: Nothing to disclose
Michael S. Lanham: Nothing to disclose
Daniel M. Morgan: Nothing to disclose
Mitchell B. Berger: Nothing to disclose

Table 1
Variables analyzed within the linear mixed model

Demographics	Pre-operative	Intra-operative	Post-operative
Age, race, ethnicity, BMI, height, weight, diabetes, smoking status, ASA class, functional status, peripheral vascular disease, bleeding disorder	Hematocrit, platelet count, anticoagulation	Type of hysterectomy, type of anesthesia, anticoagulation, temperature, intra-operative fluids including crystalloid, colloid and PRBCs, EBL, urine output, surgical time	Temperature, anticoagulation

Table 2
Variables and their coefficients in the final multivariable model predicting POD#1 hematocrit after hysterectomy

Variable	Coefficient	p value*
POD #1 Hct Intercept	5.2903	< 0.0001
Weight (kg)	0.03315	< 0.0001
Preop Hct (%)	0.6781	< 0.0001
Race white or black	1.5085	.0084
EBL (mL)	-0.00689	< 0.0001
Intraop crystalloid (mL)	-0.00032	.0003
Preop platelet count (K/μL)	-0.00416	< 0.0001
Intraop colloid used	-1.9824	< 0.0001

* Type 3 tests for fixed effects.

ORAL POSTER 13

The Association of Vaginal Wind and Abdominal Striae with Pelvic Organ Prolapse

Miranne JM,[1] Marek T,[1] Mete M,[2] Iglesia CB.[1] [1]Obstetrics & Gynecology, Medstar Washington Hospital Center/Georgetown University School of Medicine, Washington, DC; [2]Biostatistics & Bioinformatics, Medstar Health Research Institute, Hyattsville, Maryland

Objectives: Little is known about involuntary passage of air from the vagina, also known as vaginal wind, garrulous vaginalis, and other slang terms. Similarly, minimal data exist regarding the potential association between abdominal wall striae and pelvic organ prolapse (POP). The objective of this study was to describe the presence of vaginal wind and striae in patients with and without POP.

Materials and methods: This was an IRB approved cross-sectional study of women ≥18 years seeking care at a single academic institution between December 2012 and August 2013. We excluded women with rectovaginal fistulae, prior POP or incontinence surgery, pregnancy, and the inability to complete forms. After obtaining informed consent, all patients completed a questionnaire about vaginal wind and striae, the Pelvic Floor Distress Inventory Short Form (PFDI-20), and the revised Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire (PISQ-IR). Additionally, POP-Q data, mid-vaginal width, and quantification of abdominal striae were recorded. Women were dichotomized into normal support (POP-Q stage 0-1) or POP (POP-Q stage 2-4) groups for analysis. Forty-six patients were needed in each group to detect a 13% difference in the prevalence of vaginal wind between groups with an α of 0.05 and power of 80%.

Results: One hundred thirty-two patients were approached for participation. One hundred twenty-three patients (93%) agreed to participate, of which 110 (83%) completed study questionnaires. The mean age was 55.5 years and mean BMI was 27.5. The majority were white (65%), married (73%), sexually active (71%), and had a college education (76%). Fifty-one of 110 patients (46%) had normal support while 59/110 (54%) had POP. Those with POP had more vaginal deliveries (mean 2.4 vs. 1.3, $p < 0.001$). There was no difference in medical comorbidities, smoking status, or steroid use between groups ($p > 0.05$ for all). Overall, 76/110 (69%) women experienced vaginal wind an average of 2.3 times per week and this was not statistically significant between groups ($p = 0.47$). Ninety-nine percent of women with vaginal wind experienced it during intercourse. Other activities associated with vaginal wind included cunnilingus (45%), digital stimulation (17%), jogging (45%), and sit-ups (44%). Sixty-four percent of women were at least somewhat bothered by vaginal wind, although only 22% reported a negative effect on quality of life. Women with vaginal wind had a longer mean vaginal length (9.5 vs. 8.8 cm, $p = 0.004$) and better apical support than those without vaginal wind (C -5.1 vs. -3.0 cm, $p = 0.02$). There was no difference in mid-vaginal width or other POP-Q points ($p > 0.05$ for all). Sixty-five of 110 (59%) women had striae: 23/51 (45%) with normal support and 42/59 (71%) with POP ($p = 0.006$). Women with POP were more likely to have striae compared to women with normal support, adjusting for skin color and smoking status (OR = 2.5, 95% CI, 1.03-6.06, $p = 0.04$).

Conclusion: Vaginal wind is a common and bothersome complaint among women with and without POP and is associated with a longer total vaginal length and better apical support. Women with POP are more likely to have striae. Future studies are needed to further investigate these findings with regard to the impact on care-seeking and surgical intervention.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Jeannine M. Miranne: Nothing to disclose
Tania Marek: Nothing to disclose
Mihriye Mete: Nothing to disclose
Cheryl B. Iglesia: Nothing to disclose

ORAL POSTER 14

A Strong Pelvic Floor is Associated with Higher Rates of Sexual Activity and Improved Sexual Function

Kanter G,[1] Rogers R,[1] Pauls RN,[2] Thakar R,[3] Kammerer-Doak D.[4] [1]University of New Mexico, Albuquerque, New Mexico; [2]Good Samaritan Hospital, Cincinnati, Ohio; [3]Croydon University Hospital, Croydon, United Kingdom; [4]Women's Pelvic Specialty Care, Albuquerque, New Mexico

Objectives: We aimed to evaluate associations between pelvic floor muscle strength and sexual activity and function as measured by validated scales, in a cohort of women with pelvic floor disorders (PFD).

Materials and methods: We conducted a retrospective review of data collected for the validation of the Pelvic Organ Prolapse/Incontinence Sexual Questionnaire, IUGA-Revised (PISQ-IR). Sexually active and inactive women presenting with UI, AI, and/or POP at 12 sites across the United States and 5 sites from the United Kingdom were recruited. Women with chronic pelvic pain were excluded. All women underwent a physical examination including assessment of pelvic floor muscle strength using the Oxford grading scale and assessment of pelvic floor tone per ICS guidelines, and all completed the Pelvic Floor Distress Inventory (PFDI), as well as the Female Sexual Function Index (FSFI) and PISQ-IR questionnaires. The Oxford grading scale was dichotomized into "strong" (strong, moderate, or good) versus "weak" (weak, flicker, or none), and pelvic floor tone was dichotomized into "normal" versus "hypoactive" (underactive or non-functioning). Very few women had hyperactive tone and were excluded. All women gave written informed consent and sites gained IRB approval.

Results: The cohort of 585 women was middle aged (mean age 54.9 +/- 12.1 years); 395 (67.5%) reported sexual activity, 377 (65.3%) reported SUI, 275 (47.7%) reported UUI, 63 (11.0%) reported AI, and 308 (53.4%) reported POP. Two hundred seventeen (37.6%) of women had more than one PFD. Women with strong pelvic floor strength (n = 275) were more likely to report being sexually active than women with weak strength (n = 280; 75.3 vs. 61.8%, $p < 0.001$), but pelvic floor tone was not significantly associated with whether women were sexually active (68.8 vs. 60.2%, normal vs. hypoactive, $p = 0.08$). After controlling for partner status and age, strong pelvic floor strength remained predictive of sexual activity (OR, 1.89, CI, 1.18-3.03, $p < 0.01$). Among those women who reported sexual activity (n = 370), a strong pelvic floor was associated with better total FSFI scores (20.1 +/- 5.5 vs. 18.7 +/- 5.9, $p = 0.04$), as well as better function in the FSFI desire (3.4 +/- 1.3 vs. 3.1 +/- 1.3, $p = 0.04$), lubrication (4.5 +/- 1.4 vs. 4.1+/- 1.6, $p = 0.03$), and orgasm (4.4 +/- 1.5 vs. 3.9 +/- 1.6, $p = 0.004$) domains. Furthermore, PISQ-IR domains of condition impact and desire were both higher in women with strong versus weak pelvic floors (3.1 +/- 0.9 vs. 2.9 +/- 0.9, $p = 0.02$ and 3.1 +/- 0.8 vs. 2.9 +/- 0.9, $p = 0.02$, respectively).

Conclusion: In this multicenter cohort of women with PFDs, a stronger pelvic floor was associated with greater rates of sexual activity and better sexual function. Pelvic floor rehabilitation may have a positive impact on female sexual function and needs further investigation.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Gregg Kanter: Nothing to disclose
Rebecca Rogers: TRANSFORM trial sponsored by American Medical Systems, DSMB chair, consulting fee
Rachel N. Pauls: Nothing to disclose
Ranee Thakar: Pfizer, Speaker, Honorarium; Astellas, Speaker, Honorarium
Dorothy Kammerer-Doak: Nothing to disclose

ORAL POSTER 15

Wound Complications and Depression after Obstetric Anal Sphincter Injuries (OASIS); The FORCAST Study: For Optimal Recovery, Care after Severe Tears

Lewicky-Gaupp C,[1] Leader-Cramer A,[1] Labin Johnson L,[1] Kyriacou DN,[2] Prendergast E,[1] Kenton K,[1] Gossett D.[1] [1]Obstetrics and Gynecology,

Northwestern University, Chicago, Illinois; [2]*Preventive Medicine, Northwestern University, Chicago, Illinois*

Objectives: To determine the incidence of and risk factors for wound complications and postpartum depression in women who sustain obstetric anal sphincter injuries (OASIS).

Materials and methods: We conducted a prospective cohort study of women who sustained OASIS during delivery of a full-term infant at a tertiary care institution between September 2011 and August 2013. Women were seen in the urogynecology clinic at 1, 2, 6, and 12 weeks postpartum, as well as annually, for perineal evaluation; the Patient Health Questionnaire (PHQ-9) as well as a visual analog scale for pain (VAS) was also completed at each visit. Wound infection was defined by having at least 2 of the following on clinical examination: heat, erythema, edema, purulent discharge. Depression was defined as a score of 10 or greater on the PHQ-9 (indicating moderate to severe depression) anytime during the patient's follow-up period. VAS scores ranged from 0 (no pain) to 100 (maximum pain). We estimated adjusted relative risk measures of association between various demographic and clinical characteristics and wound complications and post-partum depression using modified Poisson regression multivariate modeling.

Results: One hundred eighty women with OASIS were enrolled during the study period. Eighty-seven percent of women were nulliparous. The mean age of patients was 32.4 ± 3.8 years, mean BMI 28.8 ± 4.2 (kg/m2). Ten percent of patients had chorioamnionitis, while 82.1% had a third degree laceration. Most underwent an operative vaginal delivery (64.3% forceps and 7.7% vacuum). The overall risk was 18.3% for wound infection and 24.4% for wound breakdown. Fourth degree lacerations were more likely to become infected than third degree lacerations (28.6% vs. 16.9%, $p < 0.05$), but not more likely to result in wound breakdown (21.4% vs. 25.0%). With multivariate analyses, no factor was significantly associated with wound infection. However, operative vaginal delivery was significantly associated with the development of wound breakdown (adjusted risk ratio = 3.07, 95% CI, 1.08-8.7, p = 0.04). Women with wound infection and breakdown reported significantly more pain on the VAS than women with an intact perineum (23.0, range, 0-100 vs. 35.0, range, 5-92, p = 0.03). Sixteen (8.9%) patients developed depression during their postpartum follow-up period. With multivariate analyses, subjects with fourth degree lacerations were significantly more likely to develop postpartum depression (adjusted relative risk = 4.59, 95% CI, 1.39-15.20, p = 0.013). Operative vaginal delivery was also associated with the development of post-partum depression (adjusted relative risk = 2.92, 95% CI, 0.55-15.38, p = 0.207), although this was not statistically significant.

Conclusion: OASIS is associated with high incidences of wound infection, breakdown, and postpartum depression. Women with wound infection and breakdown also report significantly more pain. While operative vaginal delivery is associated with wound breakdown, fourth degree lacerations are associated with postpartum depression.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Christina Lewicky-Gaupp: Nothing to disclose
Alix Leader-Cramer: Nothing to disclose
Lisa Labin Johnson: Nothing to disclose
Demetrios N. Kyriacou: Nothing to disclose
Emily Prendergast: Nothing to disclose
Kimberly Kenton: Nothing to disclose
Dana Gossett: Nothing to disclose

ORAL POSTER 16

Assessing the Adequacy of Cervical Core Specimens Taken from Extirpated Uteri: Implications for Laparoscopic Supracervical Hysterectomy with Transcervical Coring

Adelowo A, Kamat B, Disciullo A, Rosenblatt PL. Mount Auburn Hospital / Harvard Medical School, Cambridge, Massachusetts

Objectives: To describe the histopathologic adequacy of the ectocervical and endocervical tissue specimen after excision of the cervical canal using a 15 mm or 20 mm cervical coring instrument.

Materials and methods: Endocervical core sample analysis from 11 hysterectomy specimens was performed after cervical core sample collection using a 15 mm or 20 mm Classic Intrafascial Supracervical Hysterectomy (CISH) instrument set (WISAP GmbH, Munich, Germany). Demographic information including age, parity, and menopausal status of the patient undergoing hysterectomy was collected as well as the indication for the hysterectomy. Cervical core samples were obtained by a single research fellow and the histopathologic evaluation was performed by a single pathologist for consistency. The gross description and measurements of the specimen as well as the histopathologic findings was collected. Comparison of specimen characteristics between the 15 mm and 20 mm core was determined using t-test.

Results: Eleven cervical core samples from hysterectomy specimens were evaluated. Cervical coring was performed with a 15 mm and 20 mm CISH instrument for 6 and 5 specimens respectively. The mean age of patient at hysterectomy was 49 years, average parity was 2 (range, 0-3), and three (27.3%) patients were post-menopausal. The majority of the patients (72.7%) had leiomyomata and abnormal uterine bleeding as the indication for their hysterectomy whereas 3 (23.3%) patients had uterovaginal prolapse and were also post-menopausal. The most common final cervical pathologic diagnosis was chronic cystic cervicitis (n = 8, 72.7%). Histopathologic presence of the entire cervical transformation zone was present in all 11 (100%) of the cervical core samples. Endocervical glands were absent in the radial margins of all samples. Endometrial glands were absent in the radial margins in 7 of 11 samples (63.6%) with glands present in 2 samples in each of the 15 mm and 20 mm groups. There was no statistically significant difference in age (p = 0.20), parity (p = 0.44), transverse diameter of the intact cervix (p = 0.21), anterior/posterior diameter of cervix (p = 0.26), cervical length (p = 0.26), cervical core length (p = 0.25), and cervical core diameter (p = 0.16) between the 15 mm and 20 mm core sizes.

Conclusion: Cervical coring to remove the endocervical canal at the time of hysterectomy resulted in adequate removal of endocervical glands and endometrial glands in majority of cases with both the 15 mm and 20 mm CISH instrument.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Amos Adelowo: Nothing to disclose
Brinda Kamat: Nothing to disclose
Anthony Disciullo: Nothing to disclose
Peter L. Rosenblatt: Nothing to disclose

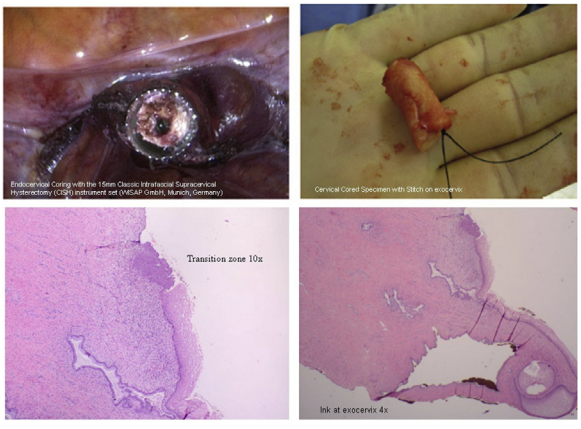


Figure. Gross and Histologic Representation of cervical Core Sample.

ORAL POSTER 17

A Prospective Multicenter FPRN Study on the Effect of Sacral Neuromodulation on Bowel Function in Women Undergoing Interstim for Overactive Bladder

Richardson ML,[1] *Vu A,*[3] *Karp D,*[2] *Treszezamsky A.*[4] [1]*Department of OB/GYN, Stanford University School of Medicine, Palo Alto, California;* [2]*OB/*

GYN, Emory, Atlanta, Georgia; [3]OB/GYN, University North Texas, Fort Worth, Georgia; [4]OB/GYN, Consultants in Women's Health, San Antonio, Texas

Objectives: The objective of our study was to characterize concomitant urinary and bowel symptoms in a patient population undergoing SNM therapy primarily for OAB with the use of validated questionnaires as well as objectively describe their outcomes.
Materials and methods: This is a prospective multicenter FPRN study that enrolled female patients undergoing permanent implantation of an Interstim device for the treatment of OAB. Patients completed the following validated questionnaires at baseline, 1 month, and 3 months after the implant: Pelvic Floor Distress Inventory (PFDI-20), including its urinary (UDI-6), colorectal (CRADI-8), and prolapse (POPDI-6) subscales; the Pelvic Floor Impact Questionnaire-7 (PFIQ-7), with its urinary, colorectal, and prolapse subscales (UIQ-7, CRAIQ-7, POPQ-7); the Fecal Incontinence Severity Index (FISI) and the Wexner Constipation Scale (WCS). SAS 9.3 software was used for statistical analysis. Means were compared with paired t-tests. Alpha error was set at 0.05.
Results: Thirty-nine patients were enrolled from 4 participating institutions. Twenty-nine patients (74%) remained in the study at 1 month and 18 patients (46%) at 3 months. Mean age (±SD) was 66 ± 14.3 years; mean body mass index was 27.9 ± 4.47 kg/m2, and mean parity was 2.21 ± 2.44. A majority of patients had used anticholinergics (89.74%). Baseline mean PFDI-20 was 125.5 and mean PFIQ-7 was 91.63. Overall cores for the PFDI-20 and PFIQ-7 were significantly reduced at 1 and 3 months post-implantation. Mean reductions in total scores were 34.77 (64.58; PFDI-20) and 24.95 (56.63; PFIQ-7) at 1 month and 50.23 (69.05; PFDI-20) and 46.35 (29.94; PFIQ-7) at 3 months (all p values < 0.01). The mean baseline CRADI-8 and CRAIQ-7 scores were 33.63 and 22.01, respectively. Mean reductions in these subscales were 5.60 (20.89; CRADI-8) and 4.72 (26.83; CRAIQ-7) at 1 month and 7.47 (20.95; CRADI-8) and 11.43 (29.94; CRAIQ-7; all p values were > 0.05) at 3 months. At baseline, the mean FISI score was 22.27 and the mean Wexner constipation score was 12.64. At 1 and 3 months, no significant change was noted in either FISI or Wexner scores (FISI 23.08 [1 month] and 16.06 [3 months]; Wexner 12.88 [1 month] and 11.71 [3 months]).
Conclusion: At baseline, women undergoing sacroneuromodulation for overactive bladder were found to have elevated CRADI-8 and CRAIQ-7 scores, indicative of bowel dysfunction. Despite a decrease in total PFDI-20 and PFIQ-7 scores 3 months after implantation, significant improvement in bowel symptoms as evaluated with 4 symptom-specific validated questionnaires (CRADI-8, CRAIQ-7, FISI and WCS), was not observed.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Monica L. Richardson: Nothing to disclose
Andy Vu: Nothing to disclose
Deborah Karp: Nothing to disclose
Alejandro Treszezamsky: Nothing to disclose

ORAL POSTER 18

Retropubic versus Transobturator TVT: Five-Year Results of the Austrian Trial

Tammaa A,[4] Aigmueller T,[1] Umek W,[2] Hanzal E,[2] Kropshofer S,[5] Lang P,[3] Bjelic-Radisic V,[1] Riss PA,[7] Ralph G,[6] Tamussino K.[1] [1]OB/GYN, University of Graz, Graz, Austria; [2]OB/GYN, Medical University of Vienna, Vienna, Austria; [3]Gynecology, Krankenhaus der Barmherzigen Brüder, Graz, Austria; [4]OB/GYN, Wilhelminenspital, Vienna, Austria; [5]OB/GYN, Medical University of Innsbruck, Vienna, Austria; [6]OB/GYN, LKH Leoben, Leoben, Austria; [7]OB/GYN, LKH Mödling, Mödling, Austria

Objectives: The Austrian Urogynecology Working Group (AUB) conducted a randomized trial to compare retropubic vs. transobturator tension-free vaginal tape (TVT vs. TVT-O; ClinicalTrials.gov NCT 00441454). We present the results at 5 years.
Materials and methods: A total of 565 women scheduled for surgical treatment of stress incontinence were randomized to undergo retropubic or transobturator placement of a TVT (Gynecare, Ethicon). All patients had preoperative and were scheduled for postoperative clinical, urodynamic and quality-of-life assessments.
Results: Three hundred two (53%) of the 565 operated patients were seen at 5 years. A negative cough stress test was seen in 83% of patients after TVT and 76% of patients after TVT-O. No pad use was reported by 56% of patients after TVT and 58% of patients after TVT-O. None of these differences reached statistical significance. One tape exposure was noted after TVT and 3 after TVT-O. There were 9 (6%) reoperations after TVT and 5 (3%) after TVT-O.
Conclusion: Although the study did not meet its follow-up goal at 5 years, results 5 years after TVT and TVT-O appear to be stable and similar. Major long-term problems appear rare.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Ayman Tammaa: Nothing to disclose
Thomas Aigmueller: Astellas, speaker, Honorarium, travel expenses
Wolfgang Umek: Astellas, Speaker, Travel expenses; Gynecare/Ethicon, Meeting, Travel expenses
Engelbert Hanzal: Astellas, Speaker, Honorarium, Travel; Ethicon, Speaker, Honorarium; Pfizer, Speaker, Honorarium; Allergan, Meeting, Travel
Stephan Kropshofer: Nothing to disclose
Peter Lang: Nothing to disclose
Vesna Bjelic-Radisic: Astellas , Meeting, Travel expenses
Paul A. Riss: Nothing to disclose
George Ralph: Nothing to disclose
Karl Tamussino: Nothing to disclose

ORAL POSTER 19

Foley Catheter Guide use during Mid-Urethral Slings: Does it make a Difference?

Miranne JM,[1] Dominguez A,[2] Sokol AI,[1] B. Iglesia C.[1] [1]Obstetrics & Gynecology, Medstar Washington Hospital Center/Georgetown University School of Medicine, Washington, DC; [2]Obstetrics & Gynecology, Methodist Stone Oak Hospital, San Antonio, Texas

Objectives: Although Foley catheter guide use during retropubic midurethral sling placement is recommended in some manufacturers' instructions, it is unclear whether use of this device decreases intraoperative lower urinary tract injury. The objective of this study was to evaluate whether or not Foley catheter guide use decreases the risk of cystotomy and urethrotomy during retropubic midurethral sling placement.
Materials and methods: This was a retrospective cohort study of all women undergoing retropubic midurethral sling placement at a single academic institution between January 2011 and September 2012. Women who underwent autologous bladder neck, transobturator, or mini/single incision slings were excluded. Demographic data, clinical characteristics, and perioperative details were collected. Patients were divided into groups based on whether or not the Foley catheter guide was used during sling placement. The primary outcome was the incidence of cystotomy. Multiple logistic regression was performed to estimate the effect of Foley catheter guide use on the risk of cystotomy adjusting for confounders.
Results: Three hundred ten patients underwent retropubic midurethral sling placement during the study period. The Foley catheter guide was used in 76/310 cases (24.5%). The mean age was 57 ± 11 and the mean BMI was 28 ± 7. While 17% had prior anti-incontinence surgery and 20% had prior prolapse surgery, these did not differ between the Foley catheter guide group and the no-guide group ($p > 0.05$ for both). A larger proportion of patients in the no-guide group had preoperative urgency (70% vs. 58%, $p = 0.049$), concomitant prolapse (98% vs. 88%, $p < 0.001$), and concomitant prolapse repairs (65% vs. 51%, $p = 0.03$). There was no difference in medical comorbidities, preoperative urgency urinary incontinence, smoking status, or concomitant hysterectomy between groups. More patients in the Foley catheter guide group had a resident or fellow as the first assistant (98.7% vs. 91%, $p = 0.02$). Retropubic anesthesia was used in a larger proportion of cases in the Foley catheter guide group than in the non-Foley catheter guide group (96% vs. 71%,

$p < 0.001$), while general anesthesia was used in a smaller proportion of cases in the Foley catheter guide group compared to the no-guide group (51% vs. 65%, $p = 0.04$). There were no differences in mean intraoperative time, mean blood loss, or rates of postoperative voiding dysfunction ($p > 0.05$ for all). The mean hospital stay was <1 day for all patients. Fourteen of 310 patients (4.5%) had cystotomies: 1/76 (1.3%) in the Foley catheter guide group and 13/234 (5.6%) in the non-Foley catheter guide group ($p = 0.12$). No patients had urethrotomies. On multiple logistic regression, there was no difference in the odds of cystotomy between groups after adjusting for previous prolapse and incontinence surgery, concomitant prolapse repair, level of first assistant, and use of retropubic anesthesia (adjusted odds ratio [AOR] = 0.2, 95% confidence interval [CI], 0.02-1.7).

Conclusion: Foley catheter guide use does not decrease the risk of intraoperative lower urinary tract injury during retropubic midurethral sling placement. Larger, prospective studies are needed to confirm this finding.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Jeannine M. Miranne: Nothing to disclose
Aurora Dominguez: Nothing to disclose
Andrew I. Sokol: Nothing to disclose
Cheryl B. Iglesia: Nothing to disclose

ORAL POSTER 20

Perineal Body Stretch in the Second Stage of Labor does not Predict Obstetric Trauma or Postpartum Pelvic Floor Function

Dunivan GC,[1] Alldredge J,[1] Meriwether KV,[1] Qualls C,[3] Leeman L,[2] Migliaccio L,[1] Rogers R.[1] [1]Obstetrics and Gynecology, University of New Mexico, Albuquerque, New Mexico; [2]Family and Community Medicine, University of New Mexico, Albuquerque, New Mexico; [3]CTSC, University of New Mexico, Albuquerque, New Mexico

Objectives: Short perineal body length (PBL) has been associated with an increased risk of severe perineal laceration at the time of delivery and postpartum functional disorders. Stretch damage to pelvic floor muscles is thought to occur during the second stage of labor. We aimed to describe changes in PBL during the second stage of labor and evaluate whether degree of PBL stretch predicted perineal lacerations or postpartum urinary incontinence (UI), fecal incontinence (FI) or sexual activity.

Materials and methods: This is a secondary analysis of a large prospective cohort of primiparous women followed to 12 months postpartum. PBL was measured from the posterior fourchette to the mid-anus during antepartum care, at the onset of labor, at the onset of the second stage, every 10 minutes during the second stage of labor, and at 6 and 12 months postpartum. All perineal lacerations of ≥2nd degree had a second observer to confirm laceration severity. The maximum PBL stretch with pushing was calculated by subtracting antepartum PBL from maximum PBL with pushing. PBL change (delta PBL) was calculated between all time points and correlated with UI (Incontinence Severity Index >1), FI (Wexner Scale responses indicating fecal incontinence) and whether or not women reported sexual activity.

Results: Of 696 women delivering in the study cohort, 448 had a vaginal birth (VB). The mean age of the VB group was 24 ± 5.0 years. Twenty-five patients (6%) had vacuum deliveries and 1 had a forceps delivery; 8 women (2%) underwent episiotomy. At delivery, 129 (29%) had a 2nd degree laceration, and 22 (5%) were diagnosed with a 3rd or 4th degree laceration. Three hundred thirty-nine of 448 women (76%) had PBL measurements taken during the second stage of labor. Mean antepartum PBL was 3.7 ± 0.8 cm with mean greatest PBL during pushing of 4.2 ± 0.9 cm and mean postpartum PBL measurements of 3.8 ± 0.9 cm at 6 weeks, 3.3 ± 0.7 cm at 6 months, and 3.33 ± 0.7 cm at 1-year postpartum. Change in PBL from antepartum to 1-year postpartum was small, at -0.3 ± 0.9 cm. PBL length changes in the 2nd stage of labor ranged from 0 cm to 2.4 cm. The mean maximum PBL stretch was 2.4 ± 1.6 cm. PBL length at any time point, maximum PBL stretch, and delta PBL between all time points were not associated with the incidence of 2nd, 3rd, or 4th degree lacerations at birth (all $p \geq 0.05$). These changes were also not associated with fecal or urinary incontinence, or sexual activity at 6 months postpartum (all $p \geq 0.05$).

Conclusion: PBL and perineal body stretch during labor does not impact the incidence of perineal laceration at birth or the incidence of urinary or fecal incontinence or sexual activity postpartum. Pelvic floor stretch may not be the primary mechanism of pelvic floor damage in the second stage of labor.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Gena C. Dunivan: Nothing to disclose
Jill Alldredge: Nothing to disclose
Kate V. Meriwether: Nothing to disclose
Clifford Qualls: Nothing to disclose
Lawrence Leeman: Nothing to disclose
Laura Migliaccio: Nothing to disclose
Rebecca Rogers: American Medical Systems, DSMB chair for the TRANSFORM trial, Consulting fees

ORAL POSTER 21

Surface and Boney Landmarks for Sacral Neuromodulation: A Cadaveric Study

Deveneau NE,[1] Greenstein M,[1] Mahalingashetty A,[1] Herring N,[2] Lipetskaia LV,[1] Azadi A,[1] Ostergard DR,[1] Francis SL.[1] [1]Obstetrics and Gynecology, Division of Female Pelvic Medicine and Reconstructive Surgery, University of Louisville, Louisville, Kentucky; [2]Anatomical Sciences and Neurobiology, University of Louisville, Louisville, Kentucky

Objectives: To determine whether 9 cm from the tip of the coccyx correlates with the position of the S3 sacral foramen. Secondarily, to examine other external and internal boney landmarks and measurements that correlate with the position of S3.

Materials and methods: Embalmed cadavers acquired from the body bequeathal program at the University of Louisville were selected for the study. Prior to dissection, various measurements and distances between external boney landmarks were obtained. Two spinal needles identical to those used in percutaneous lead placement were placed 9 cm superior to the coccyx with one needle 2 cm left lateral and one needle 2 cm right lateral to midline and perpendicular to the sacrum. Next, an extensive dissection of the sacrum was completed. All internal measurements relating to sacral length and position of S3 were obtained as well as the distance from the superior aspect of S3 to the location of the needle. Results were then analyzed using descriptive statistics and correlations between variables were assessed using Pearson correlation coefficients.

Results: We examined 22 fully embalmed cadavers, 11 female and 11 male. We found the mean distance from the tip of coccyx to the superior aspect of S3 was 9.26 cm (SD 0.84, range, 7.83-11.17 cm) approximating the position for percutaneous nerve evaluation (PNE) based on the commonly used 9 cm criterion. The mean distance from the lateral aspect of S3 to the midline was 2.30 cm (SD 0.24). The mean distance from the needles to the superior aspect of S3 was 1.25 cm (SD 1.31) and needle placement was as likely to be placed above or below the level of S3. The inter-foramen distance had a mean distance between S2-S3 of 1.48 cm (SD 0.30) and 1.48 cm (SD 0.24) between S3-S4. The needle distance away from the S3 foramina approached the distance to adjacent foramina. We also measured the distance of the sacroiliac joint (SIJ) from both the inferior aspect of S2 and the superior aspect of S3. The mean distance from S3 foramen to SIJ was 0.83 cm (SD 0.51) on the right and 0.69 cm (SD 0.38) on the left. These distances placed SIJ nearer to S3 then distances from SIJ to S2, 2.05 cm (SD 0.60) on the right, and 1.84 cm (SD 0.61) on the left. All associations between external measurements and coccyx to S3 length were not significant. There was, however, a significant relationship between coccyx to S3 length and PSI to coccyx length when measured internally (Pearson r-value of 0.68).

Conclusion: In-office, blind PNE can be accomplished safely using 9 cm from the tip of the coccyx as a reasonable starting landmark. However, given the variability in coccyx length, extra caution and reliance on nerve stimulation motor-sensory response during the office test should be used. Given the proximity and relatively consistent location of the SIJ in relation to the S3 foramen, it shows strong potential as an anatomical

landmark for the S3 foramen and should be studied further for its application in sonographic assistance of PNE.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Nicolette E. Deveneau: Nothing to disclose
Miriam Greenstein: Nothing to disclose
Abhijit Mahalingashetty: Nothing to disclose
Nicole Herring: Nothing to disclose
Lioudmila V. Lipetskaia: Nothing to disclose
Ali Azadi: Nothing to disclose
Donald R. Ostergard: Astellas, Consultant, Speaker, Honorarium
Sean L. Francis: Astellas, Speaker, Honorarium; Pfizer, Speaker, Honorarium; IMET, Educational Presenter, Honorarium

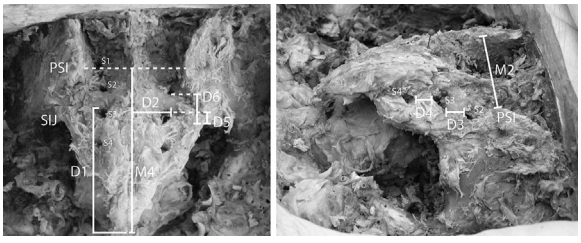


Figure 1. Sacral foramina (S1-S4), posterior superior iliac spine (PSI), sacroiliac joints (SIJ). M2: inter-PSI, M4: coccyx to level of PSI, D1: tip of coccyx to S3, D2: middle sacral ridge to S3, D3: S2 to S3, D4: S3 to S4, D5: level of SIJ to S3, D6: level of SIJ to S2.

NON-ORAL POSTER 22

Sexual Dysfunction and Distress amongst U.S. Army Active Duty Females: A Prevalence Study

Penick E, Vaccaro C, Hemman EA. Madigan Army Medical Center, Tacoma, Washington

Objectives: To determine the prevalence of sexual dysfunction and distress in active duty female service members and if sexual function is impacted by deployment.

Materials and methods: Active duty military women between the ages of 18 and 65 scheduled for a routine gynecology visit at Madigan Army Medical Center were invited to participate in an anonymous survey study. Respondents completed a demographics questionnaire, the Female Sexual Function Index (FSFI), Female Sexual Distress Scale-Revised (FSDS-R), and the Short Form-12 (SF-12) measuring physical and mental wellness. Goal sample size was 163 women based on the active duty population at Joint Base Lewis McChord and distressing sexual complaints occurring in 12% of U.S. women overall.

Results: The overall response rate was 56% (192/339). The prevalence of female sexual dysfunction was found to be high in U.S. Army active duty women at 60.3%. The prevalence of female sexual distress was elevated at 25.7%. Overall, deployment did not appear to impact sexual function with no statistically significant differences in scores noted on the FSDS-R ($p = 0.294$) or FSFI ($p = 0.161$). Those women who had deployed were found to be more physically fit than non-deployed women (SF physical score 71.20 vs. 68.29, $p = 0.045$).

Conclusion: The prevalence of female sexual dysfunction and associated distress is high in U.S. Army active duty women despite a high level of physical fitness. In addition, deployment does not appear to impact sexual function.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Emily Penick: Nothing to disclose
Christine Vaccaro: Nothing to disclose
Eileen A. Hemman: Nothing to disclose

NON-ORAL POSTER 23

Effectively Confronting Conflict: A Pilot Study

Pickett SD,[1] Nihira MA,[1] Zubialde J,[2] Stoner JA.[3] [1]Obstetrics and Gynecology, Female Pelvic Medicine and Reconstructive Surgery, University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma; [2]Family Medicine, College of Medicine Dean's Office, University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma; [3]Biostatistics and Epidemiology, University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma

Objectives: Physicians receive little formal training in communication and conflict resolution, a practice that is common amongst other professionals. Faculty physicians, fellows, and physician extenders in a Female Pelvic Medicine and Reconstructive Surgery division voluntarily completed a formal curriculum in conflict resolution. The objective of this study was to pilot a curriculum in conflict resolution and personal accountability that was assessed with objective measures of physician performance.

Materials and methods: The subjects for this intervention consisted of two faculty physicians, two fellows, and four physician extenders. Prior to course initiation the participants viewed four video scenarios that demonstrated confrontational situations that are typically encountered by faculty and fellows in academic training programs. Each subject completed a self-evaluation after each scenario rating how comfortable they felt dealing with each type of confrontation. Additionally, clinic staff completed an anonymous survey rating how they felt the individual participants addressed professional confrontation. Following the 6-week course, the participants watched the videos and repeated a self-assessment. External evaluations were collected from the same staff evaluators 6 weeks after the course ended. Descriptive statistics were used to summarize the distribution of scores. The signed rank test and Spearman's correlation coefficient where to further used to analyze changes in scores after the intervention.

Results: When reviewing providers' self-assessment scores before and after the intervention, the scores increased for all but one of the providers (Figure 1). The median change in scores was an increase of 1.3 points (interquartile range, 0.3 to 1.9). When comparing the external observers' assessments before and after the intervention program, scores increased for six of the eight providers (95% CI, 35% to 97%). The median change in scores was an increase of 0.6 points with an interquartile range from 0 to 1.1. The observed change in scores following the intervention program was not statistically significant ($p = 0.11$). Finally, when looking to determine if provider's self-assessments of their ability to address conflict was associated with the assessment given by the external observers, scores increased significantly following the intervention program ($p = 0.039$). Although external observer average scores tended to be slightly higher than the self-assessment scores, particularly at the pre-intervention time point, there is no significant difference in median scores between the self-assessment and external observer scores at the pre-intervention time point ($p = 0.25$) or at the post-intervention time point ($p = 0.84$).

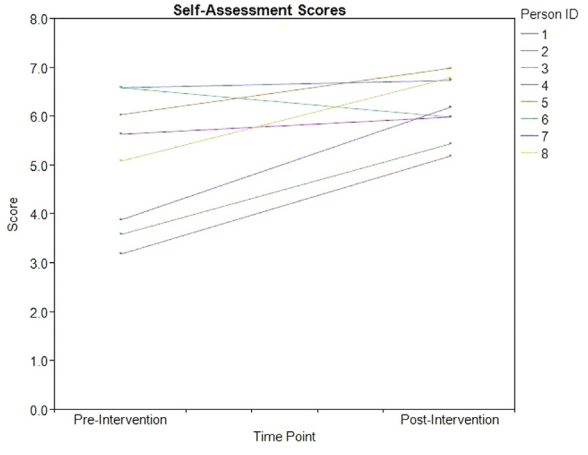


Figure.

Conclusion: After the conflict resolution course, scores increased for all but one of the providers. For six of the eight participants, their external evaluation scores increased. This pilot data gives evidence that a formal class in communication and conflict management is beneficial, and this data can be used to implement such classes on a larger scale.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Stephanie D. Pickett: Nothing to disclose
Mikio A. Nihira: Nothing to disclose
John Zubialde: Nothing to disclose
Julie A. Stoner: Nothing to disclose

NON-ORAL POSTER 24

Does Side Make a Difference? Anatomic Differences between the Left and Right Ureter

Odegard S, Abernethy M, Mueller ER. Obstetrics/Gynecology, Loyola University Chicago Stritch School of Medicine, Maywood, Illinois

Objectives: Seventy percent to 80% of iatrogenic ureteral injuries that occur during gynecologic surgery involve the left ureter. Possible etiologies include the "handedness" of the surgeon and/or anatomic differences between the left and right ureter. We aimed to characterize the location of the left and right ureters with respect to the cervix and sacral promontory.
Materials and methods: A retrospective image review was undertaken of women (n = 304) who underwent CT urograms between January 2012 and May 2013. One hundred fifty-three women were excluded due to pelvic masses, prior pelvic surgery, or urogynecological malignancy, and 56 due to poor image quality. The lateral distance to the ureters was measured at the level of the sacral promontory (S1) and the cervix. The pelvic midline served as a reference at S1, while measurements were taken from both the pelvic and cervical midlines at the cervix. The distance between ureters in a sagittal plane was also measured at the level of S1 and the cervix. We used student's t-tests to evaluate the anatomic differences of the ureters and to test if age, BMI, and ethnicity were contributing factors.
Results: CT urograms of 95 women were suitable for inclusion in this study. The mean age was 56 years (range, 23-92 years). The cervix was 2.93 mm left from the pelvic midline ($p = 0.028$). The left ureter was on average 4.15 mm farther from the pelvic midline than the right at S1, and 2.73 mm more lateral at the cervix ($p = 0.000$ and $p = 0.001$). The L-R difference was not significant when measuring from the cervical midline ($p = 0.220$). The right ureter was 3.07 mm more anterior than the L at S1, but the left was 1.92 mm more anterior at the cervix ($p = 0.000$ and $p = 0.012$, respectively). Age, BMI, and ethnicity were not shown to affect the position of the ureter with respect to the mid-line of the cervix.
Conclusion: The left ureter is more lateral than the right ureter from the midline and more anterior than the right from the cervix. The position differences range from 3-4 mm, which is the width of a Heaney clamp. These anatomic differences, along with the right handedness of most surgeons, may be a contributing factor to the increase in ureteral injuries on the left side compared to the right.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Stephan Odegard: Nothing to disclose
Melinda Abernethy: Nothing to disclose
Elizabeth R. Mueller: Nothing to disclose

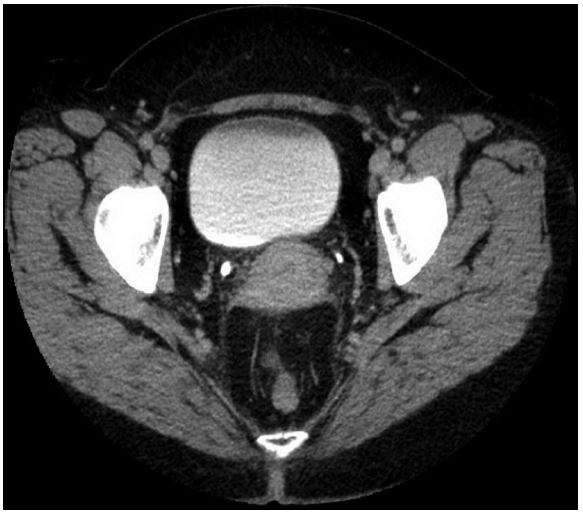


Figure 1. CT urogram with annotations at the level of the cervix. 1: Anterior/posterior distance between L and R ureters. 2: Lateral distance to L ureter. 3: Cervical midline. 4: Pelvic midline. 5: Lateral distance to R ureter.

NON-ORAL POSTER 25

The use of Analogies in Understanding Urinary Incontinence and Urodynamics

Flora RF. Obstetrics and Gynecology, Summa Health System/ NEOMED, Akron, Ohio

Objectives: The use of analogies in engineering and science help a learner with abstract or complex concepts. Residents in OB/GYN have difficulty with urodynamic interpretation partly due to infrequent exposure to it. We describe the use of analogies in helping learners grasp and retain these concepts.
Materials and methods: A review of the literature of the most current concepts regarding urinary incontinence and urodynamics was performed. The Teaching-With-Analogies Model approach of Glynn (2004 and 2007) was used in developing the analogies. The steps included:

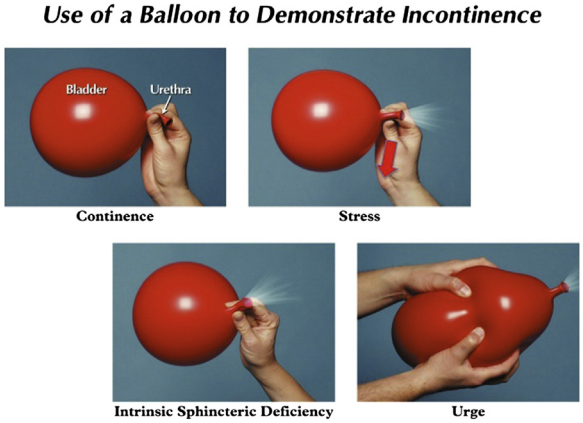
Introduce the target concept
Remind learner of the analog concept
Identify relevant features of both
Connect (map) the similar features
Indicate where the analogy breaks down
Draw conclusions about the concepts

Results: The Flora balloon analogy was developed to demonstrate the types of urinary incontinence. Analogies used to demonstrate urodynamic tests include:

Uroflowmetry - ketchup bottle
Cystometry - intrauterine pressure monitoring
Urethral pressure profile - incompetent cervix
Stress leak point pressure - high striker game
Pressure voiding study - balloon and clothespin

Conclusion: The development of the above analogies has helped learners grasp these concepts. It utilizes the associative reasoning system of cognitive structure. Formal study of learner comprehension and retention is needed to validate this method of teaching urodynamic interpretation.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Robert F. Flora: Nothing to disclose



NON-ORAL POSTER 26

The use of Analogies in Understanding Pelvic Organ Prolapse and the POP-Q System

Flora RF. Obstetrics and Gynecology, Summa Health System/NEOMED, Akron, Ohio

Objectives: The use of analogies in engineering and science help a learner with abstract or complex concepts. Residents in OB/GYN have difficulty with pelvic organ prolapse (POP) concepts especially with the use of the pelvic organ prolapse quantification system. We describe the use of analogies in helping learners grasp and retain these concepts.

Materials and Methods: A review of the literature of the most current concepts regarding POP and POP-Q was performed. The Teaching-With-Analogies Model approach of Glynn (2204 and 2007) was used in developing the analogies. The steps included:

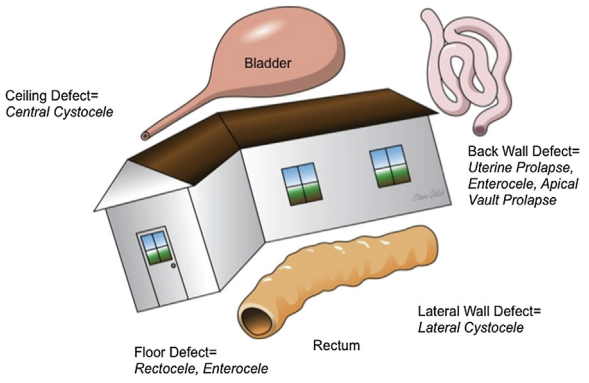
1) Introduce the target concept
2) Remind learner of the analog concept
3) Identify relevant features of both
4) Connect (map) the similar features
5) Indicate where the analogy breaks down
6) Draw conclusions about the concepts

Results: The Flora-Scotti-DeLancey house analogy was developed to demonstrate pelvic anatomy, POP, and POP-Q. The house was used to demonstrate measurement of the fixed points and the vaginal dimensions. A trombone and stretch band were used to demonstrate the floating points. The presentation has been presented several times and feedback by learners has been positive.

Conclusion: The development of the above analogies has helped learners grasp these concepts. It utilizes the associative reasoning system of cognitive structure. Formal study of learner comprehension and retention is needed to validate this method of teaching POP and POP-Q staging.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Robert F. Flora: Nothing to disclose



NON-ORAL POSTER 27

Feasibility and Outcomes of Total Laparoscopic Hysterectomy in Patients with Obesity versus Morbid Obesity

Eston MA,[1] Hou H,[2] Pollard RR,[2] Kane SM.[2] [1]Case Western Reserve University School of Medicine, Cleveland, Ohio; [2]Obstetrics and Gynecology, MetroHealth Medical Center, Cleveland, Ohio

Objectives: Obesity rates have been increasing in the United States over the past 50 years, with more than one-third of adults currently classified as obese. The prevalence of extreme obesity continues to rise as well. Laparoscopic gynecologic surgery has been shown to be safe in obese patients, but less attention has been paid to the challenges of laparoscopic surgery in patients with morbid obesity. Given this, our objective was to determine the feasibility and outcomes of total laparoscopic hysterectomy in patients with obesity versus morbid obesity.

Materials and Methods: This is a retrospective single-center study of 203 obese women undergoing total laparoscopic hysterectomy for benign indications. Obesity is defined as body mass index (BMI), calculated by weight in kilograms over the square of height in meters above 30. Class III obesity, or morbid obesity, is defined as BMI above 40. Conversion to laparotomy, estimated blood loss, postoperative complications, visual analog scale postoperative pain scores, overnight admissions, and preoperative and postoperative hemoglobin levels were evaluated. Demographic data including age, race, and insurance status were analyzed as well.

Results: Of the 203 patients, 60 patients had BMI over 40. The mean BMI in the class III obesity group was 44.7 (range, 40-45) versus a mean BMI of 34.2 (range, 30-39) in the obese group. There were no significant differences between the morbidly obese and obese groups in estimated blood loss, 110 vs. 74 mL ($p = 0.10$), postoperative complication rate, 8.4% vs. 7.8% ($p = 0.87$) overnight admission rate, 67% vs. 59% ($p = 0.26$), preoperative hemoglobin, 11.9 vs. 12.3 gm/dL ($p = 0.08$) or postoperative hemoglobin, 10.5 vs. 10.9 gm/dL ($p = 0.40$). Laparotomy conversion rates were no different at 1.6% and 1.3% ($p = 0.88$). Both groups were comparable in regards to age, race, and insurance status. Postoperative pain scores were significantly higher in the class III obesity group (5.7 vs. 4.5, $p = 0.03$).

Conclusion: Total laparoscopic hysterectomy is a feasible surgical operation in patients with class III obesity given similar rates of postoperative complications, laparotomy conversion, and overnight admissions compared with their less-obese counterparts. Our data does suggest that management of postoperative pain is less successful in these women. Further research regarding the safety of using opioid medication and changes in pharmacokinetics of analgesics in patients with class III obesity is needed.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Michelle A. Eston: Nothing to disclose
Huiying Hou: Nothing to disclose
Robert R. Pollard: Nothing to disclose
Sarah M. Kane: Nothing to disclose

NON-ORAL POSTER 28

Trends in Female Pelvic Reconstructive Surgery

Mueller M,[1] Lovecchio FC,[2] Catanzarite T,[1] Kim JY,[2] Kenton K.[1] [1]OB/GYN, Northwestern University, Chicago, Illinois; [2]Surgery, Northwestern University, Chicago, Illinois

Table 1
Type of POP surgery

Type of surgery	CPT Code	Number of cases (%)
Vaginal apical repairs	57282, 57283	2822 (18.0)
MIS apical repairs	57425	1154 (7.4)
Abdominal Apical repair	57280	682 (4.3)
Anterior and/or posterior repairs	57250, 57240, 57268, 57270 57284, 57265, 57260, 57284	8802 (56.1)
Vaginal closure procedure	57120, 57110	329 (2.1)
Vaginal mesh procedures	57267	1891 (12.1)

Total number of patients: 11, 743; total number of prolapse procedures:15,680.

Table 2
Stratification of procedures

	Vaginal apical	MIS apical	Abdominal apical	Vaginal mesh	Anterior and/or posterior repairs	Vaginal closure
Year						
2006	17%	1%	6%	18%	55%	4%
2007	7%	2%	7%	7%	73%	5%
2008	8%	3%	8%	5%	73%	3%
2009	8%	8%	6%	4%	69%	4%
2010	21%	5%	3%	15%	54%	2%
2011	19%	10%	5%	12%	52%	2%
Age (yrs)						
18-39	167	56	31	89	536	2
40-59	1027	546	256	656	3415	16
60-79	1458	526	256	656	3415	16
80+	170	26	25	126	547	167
Inpatient	1963	726	644	1056	5919	232
Outpatient	859	428	38	835	2883	97

Objectives: To determine the trends in surgery for pelvic organ prolapse (POP) as well as characterize the use of mesh in the surgical management of POP.
Materials and Methods: Using the American College of Surgeon's National Surgical Quality Improvement Program (ASC-NSQIP) registry, we identified patients who underwent surgery for POP from 2006-2011. Identification was based on Current Procedural Terminology (CPT) codes specific to urogynecologic surgery.
Results: Fifteen thousand six hundred eighty surgical procedures for POP were performed during this time period on 11,743 women. The majority of the procedures performed were anterior and posterior colporrhaphies. In terms of apical repairs, most repairs utilized a vaginal approach followed by a minimally invasive approach and finally abdominal approach (Table 1). When stratified by year, vaginal mesh procedures peaked in 2006, with a dramatic decrease in 2007, 2008, and 2009. However, vaginal mesh procedures showed a significant increase in 2010, contributing 15% of all POP surgeries (Figure 1). The majority of cases were performed on women aged 60-79 (49.9%), however, a significant amount of procedures were performed in the elderly population. Inpatient hospital admission predominated, but one third of cases were performed in the outpatient setting (Table 2).
Conclusion: Anterior and posterior repairs dominate POP surgery and vaginal apical procedures are still preferred over minimally invasive or open abdominal apical procedures. Vaginal mesh surgery still accounts for a significant proportion of POP surgery.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Margaret Mueller: Nothing to disclose
Francis C. Lovecchio: Nothing to disclose
Tatiana Catanzarite: Nothing to disclose
John Y. Kim: Nothing to disclose
Kimberly Kenton: Nothing to disclose

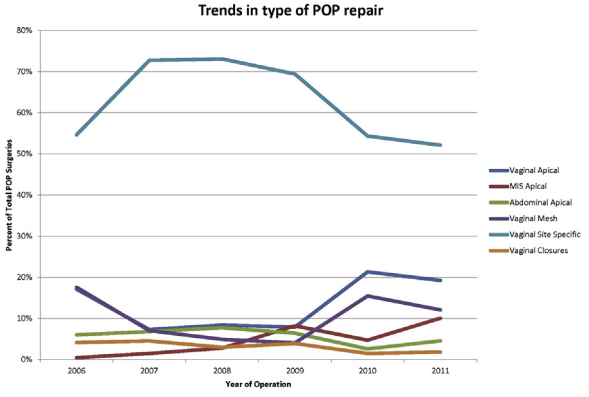


Figure 1.

NON-ORAL POSTER 29

Concomitant Apical Prolapse Repair and Incontinence Procedures: Trends from 2001-2009 in the United States

Raman S, Raker CA, Sung V. Brown University: Women and Infants, Providence, Rhode Island

Objectives: Recent evidence supports improved outcomes in women who undergo an incontinence procedure at the time of apical prolapse repair compared to apical repair alone. Our primary objective was to describe national trends in concomitant apical repair and incontinence procedures performed in the United States from 2001-2009. A secondary objective was to describe the effect of geographic location, hospital setting, and age group on the number of concomitant procedures performed.
Materials and Methods: We used the Nationwide Inpatient Sample (NIS) to collect data on hospital discharges for women who had inpatient apical prolapse surgery between 2001 and 2009. The NIS is a stratified, random sample of discharge data from academic and community hospitals and is the largest publicly available inpatient care database in the United States. This database is maintained by the Agency for Healthcare Research and Quality. We included women with International Classification of Disease-9 Clinical Modification (ICD-9CM) procedure codes for apical procedures with and without incontinence procedures. We abstracted data on age, hospital setting, and geographic location. Survey weights were applied to obtain national estimates. We examined annual trends in the proportion of concomitant procedures using chi-square and multiple logistic regression.
Results: Between 2001 and 2009, there were 332,181 apical repairs performed. Of those, the percentage of concomitant incontinence procedures performed increased from 37.9% in 2001 to 47% in 2009 ($p = 0.0002$). The group of women who had a concomitant incontinence procedure had a slightly longer length of stay (2.47 vs. 2.36 days, $p = 0.004$). All geographic regions had increasing trends of concomitant incontinence procedures with no difference between regions ($p > 0.05$ for all). Within each region, the Northeast and Midwest showed significant increasing trends ($p = 0.03$ for both). Both community and academic institutions had increasing trends of concomitant procedures over the study period, with no difference between the types of institutions. Age was not associated with increasing trends in concomitant procedures.
Conclusion: The proportion of concomitant apical and incontinence procedures increased in the United States between 2001 and 2009. The length of stay was slightly longer in the concomitant group. Geographic location, hospital setting, and age were not associated with increasing trends.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Sonali Raman: Nothing to disclose

Christina A. Raker: Nothing to disclose
Vivian Sung: Nothing to disclose

NON-ORAL POSTER 30

Surgically Relevant Relationships of the Ureter in the Retropubic Space

Chin K, Smith BC, Maldonado PA, Schaffer JI, Corton M. OB/GYN, UT Southwestern, Dallas, Texas

Objectives: Distal ureteral injuries may occur during reconstructive or radical pelvic surgeries, but also during benign gynecologic and obstetric procedures. Pelvic surgeons can clearly visualize the course of the ureter from the pelvic brim until it crosses below the uterine artery. However, distal to this point the ureter is not visualized during benign gynecologic procedures. With ureteral reimplantation, understanding the anatomy of the ureter distal to the uterine artery may be beneficial for surgical planning. The objectives of this study were to measure the distance (1) from each ureteral orifice to the uterine artery at its crossover point with the ureter, and (2) from each ureteral orifice to the arcus tendineus fascia pelvis.

Materials and Methods: Detailed dissections were performed in ten unembalmed female cadavers with uteri. Ureters were catheterized at the pelvic brim in an anterograde fashion. The location where the ureter crosses underneath the uterine artery was identified as the "crossover point," and marked with a pin. The anterior and superior portions of the bladder wall were resected to expose the trigone. A horizontal measurement from the ureteral orifice to the ipsilateral arcus tendineus fascia pelvis was obtained with calipers (Figure).

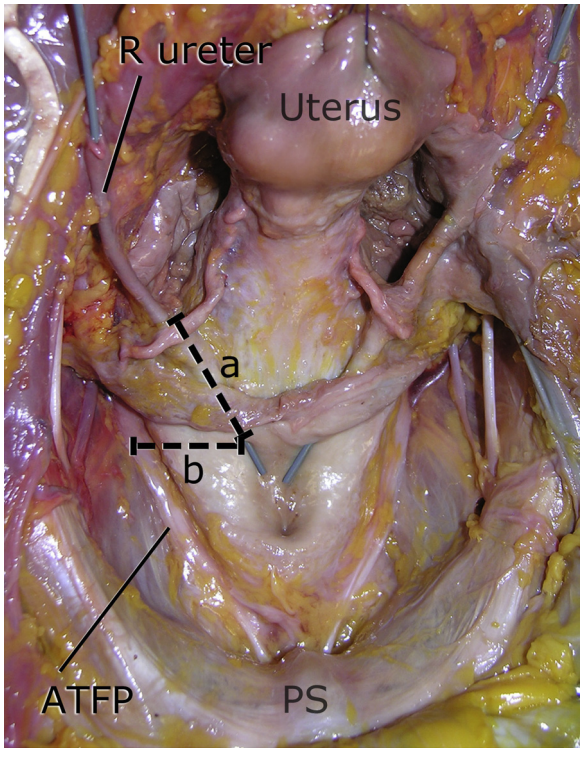


Figure. Superior view of retropubic space. Gray stents shown in ureters. (A) Ureteral orifice to crossover, medial ureter, and superior border of uterine artery; (B) ureteral orifice to arcus tendineus fascia pelvis (ATFP); PS = pubic symphysis.

Distances from the ureteral orifice to the uterine artery at its crossover point with the ureter were recorded (Figure). The transverse distance between the two ureters at the level of the crossover was also recorded. All measurements were obtained twice and the median distances were used for analyses.

Results: The majority of cadavers were white (90%), with a median age of 77 years (range, 33-90 years) and median body mass index of 23.2 (range, 18.5-32.6). The median distance from the ureteral orifice to the uterine artery at its crossover with the ureter was 36 mm (range, 34-51.5 mm) on the right and 36 mm (range, 31-43 mm) on the left side. Median distance from the ureteral orifice to the arcus tendineus fascia pelvis was 33.5 mm (range, 19-41 mm) on the right, and 29.3 mm (range, 20.5-41 mm) on the left. At the level of the crossover the median distance between the two ureters was 59 mm (range, 54.5-91 mm).

Conclusion: Ureteral compromise can occur with paravaginal repair as the ureteral orifice was found as close as 2 cm to the arcus tendineus. If ureteral obstruction is encountered 3 to 5 cm proximal to the ureteral orifice during retrograde stenting or imaging studies, the location of the injury was likely during ligation of the uterine artery.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Kathleen Chin: Nothing to disclose
Benjamin C. Smith: Nothing to disclose
Pedro A. Maldonado: Nothing to disclose
Joseph I. Schaffer: Nothing to disclose
Marlene Corton: Nothing to disclose

NON-ORAL POSTER 31

Effect of TVT-O Abbrevo on Post-Operative Groin Pain

Shaw J, Jeppson PC, Rardin C. Urogynecology, Brown University, Providence, Rhode Island

Objectives: The primary objective of this study was to compare the incidence of post-operative thigh pain following placement of the full length Gynecare TVT Obturator System (TVT-Obturator) versus the shorter Gynecare TVT Abbrevo Continence System (TVT Abbrevo). Our secondary objective was to compare the efficacy between both devices 6 months after surgery.

Materials and Methods: This is a retrospective cohort study of all women who underwent a transobturator midurethral sling by the division of urogynecology at one institution between January 1, 2007, and December 31, 2012. Patient charts were identified by surgical device codes. Charts were then reviewed for complaint of post-operative thigh pain, interventions for thigh pain, removal of mesh for thigh pain, exposure/erosion, and reoperation for exposure at any stage of follow-up. Patient demographics were recorded including age, race, parity, and prior surgery for urinary stress incontinence. The incidence of post-operative thigh pain was dichotomized as present or absent and compared between groups using a chi-square test. Preoperative and 6-month postoperative Incontinence Severity Index (ISI), Urodynamic Distress Inventory-6 (UDI-6), and Pelvic Floor Impact Questionnaire-7 (PFIQ-7) scores were compared between groups using T-tests. Demographic information will be reported with descriptive statistics using a T-test for continuous data and chi-square test for categorical data.

Results: There were 125 patients who received TVT Obturator and 80 patients who received TVT Abbrevo. No differences in demographic data were present between groups. Mean follow-up for TVT Obturator and TVT Abbrevo was 6.2 months (range, 1-24 months) and 5.9 months (range, 1-20 months). Twelve (9.6%) patients in the TVT Obturator group and 1 (1.3%) patient in the TVT Abbrevo group experienced bothersome thigh pain (P value = 0.02). Three patients required mesh excision for persistent groin pain following TVT Obturator. The complete pre-operative and post-operative ISI, UDI-6, and PFIQ-7 scores were available for 76 (61%), 47 (38%), and 45(36%) patients following TVT Obturator and 48 (60%), 26 (33%), and 25 (31%) following TVT

Table 1
Incidence of post-operative groin pain

Post-op groin pain	Post-op groin pain	TOT Abbrevo	p value
No. of patients at 6 months No pain Pain	(n = 86) 79 (91.9) 7 (8.1)	(n = 50) 50 (100) 0	0.047
No. of patients at any stage of follow-up No pain Pain	(n = 125) 113 (90.4) 12 (9.6)	(n = 80) 79 (98.8) 1 (1.3)	0.02

Table 2
Secondary outcomes; incontinence severity scores. Data are mean (SD); N

	TVT Gynecare	TVT Abbrevo	p value
Incontinence severity index (Sandvik) Baseline 6 month average change within-patient	7.1 (3.3); n = 113 1.5 (2.2); n = 79 5.0 (3.3); n = 76	6.2 (3.6); n = 76 0.7 (2.0); n = 50 5.1 (3.4); n = 48	0.08 0.04 0.8
Urogenital Distress Inventory score Baseline 6 month average change within patient	14.5 (5.8); n = 106 4.9 (5.3); n = 50 8.3 (6.8); n = 47	12.9 (6.7); n = 75 3.6 (4.5); n = 26 8.5 (6.5); n = 26	0.08 0.3 0.9
Incontinence Impact Questionnaire score Baseline 6 month average change within patient	8.5 (6.1); n = 105 2.5 (3.9); n = 48 4.8 (5.8); n = 45	8.0 (6.2); n = 75 0.7 (2.1); n = 25 6.7 (6.4); n = 25	0.6 0.02 0.2

Abbrevo. At 6 months, the mean improvement in questionnaire scores within individuals for TVT Obturator and TVT Abbrevo were as follows: 5.0 and 5.1 for ISI (P value = 0.8), 8.3 and 8.5 for UDI-6 (P value = 0.9), and 4.8 and 6.7 for PFIQ-7 (P value = 0.2).

Conclusion: The use of TVT Abbrevo significantly decreases post-operative groin pain when compared to TVT Obturator, without any decrease in efficacy.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Jonathan Shaw: Nothing to disclose
Peter C. Jeppson: Nothing to disclose
Charles Rardin: Nothing to disclose

NON-ORAL POSTER 32

Knot Integrity as Function of Suture Length: Longer does not Mean Stronger

Jiang S,[1] Kahn E,[2] Sheeder J,[3] Davis K,[1] Connell K,[1] Muffly T.[1]
[1]Division of Female Pelvic Medicine and Reconstructive Surgery, University of Colorado, Aurora, Colorado; [2]University of Missouri-Kansas City School of Medicine, Kansas City, Missouri; [3]Family Planning and Adolescent Medicine, University of Colorado, Aurora, Colorado

Objectives: To evaluate how length of suture affects integrity of knots for four commonly used sutures.

Materials and Methods: Size 0-0 gauge silk, polypropylene, coated glycolide/lactide, and polyglyconate were tested for tensile strength and for rates of untying. The knots were randomly tied by the same surgeon using three different lengths suture (12 cm, 15 cm, and 20 cm). We compared individual knot strength via tensiometer at the point of knot failure.

Results: Four commonly used sutures in gynecologic surgery along with silk were were divided into three groups based on suture length at the start of knot tying (12 cm, 15 cm, and 20 cm). Six hundred knots were tied. Of the 600 knots tested for tensile strength, 43 untied (7.2%). Coated glycolide/lactide and polyglyconate were significantly more likely to untie than silk ($p < 0.001$ for both). Suture length of 20 cm was more likely to untie than 12 cm ($p = 0.005$). Please see the Table. In logistic regression, only suture length was a significant predictor of untying ($p = 0.007$).

Conclusion: Based on our laboratory experiment, longer suture does not mean stronger knots. For coated glycolide/lactide and polyglyconate sutures, tying with longer suture created knots that are more likely to untie.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Shan Shan Jiang: Nothing to disclose
Emily Kahn: Nothing to disclose
Jeanelle Sheeder: Nothing to disclose
Karlotta Davis: Nothing to disclose
Kathleen Connell: Nothing to disclose
Tyler Muffly: Nothing to disclose

Table
Suture Length and Risk of Untying

Suture Length	Untied	OR: 95% CI	p Value
12 cm (n = 200)	18.6%	Ref	–
15 cm (n = 200)	27.9%	1.53; 0.6-3.8	0.36
20 cm (n = 200)	56.6%	3.1; 1.4-7.2	0.005

NON-ORAL POSTER 33

Validation of a Pragmatic Instrument to Measure Adherence to an Anticholinergic Drug in Women with Overactive Bladder

Andy UU,[1] Harvie HS,[1] Smith AL,[2] Propert KJ,[3] Arya LA.[1] [1]Division of Urogynecology, Department of OB/GYN, University of Pennsylvania, Philadelphia, Pennsylvania; [2]Urology, University of Pennsylvania, Philadelphia, Pennsylvania; [3]Biostatistics and Epidemiology, University of Pennsylvania, Philadelphia, Pennsylvania

Objectives: Current methods to measure adherence to anti-cholinergic drugs, such as pill counts and monitoring caps, are not practical for use in clinical settings. Our goal was to validate a brief self-administered instrument to measure adherence to anti-cholinergic medication for overactive bladder in the clinic.

Materials and Methods: We conducted a prospective study in women with overactive bladder treated with flexible-dose fesoterodine therapy 4-8 mg for 12 weeks. Adherence was measured at 8 and 12 weeks using three instruments: (1) the four-domain interviewer administered validated Brief Medication Questionnaire (BMQ) that assesses for the presence of non-adherence as well as belief/motivational, recall and access barriers to non-adherence, (2) a self-administered validated instrument, the Medication Adherence Self-Report Inventory (MASRI) that measures the non-adherence rate, and (3) pill count. Non-adherence was defined as

adherence rate of <80%. Construct validity was assessed by determining the relationship between non-adherence as measured by the MASRI and belief/motivational barrier to taking medication as measured by the BMQ. We hypothesized that non-adherent women were more likely to report belief/motivational barriers to taking medications. Concurrent validity was assessed by determining the relationship between non-adherence as measured by the MASRI, BMQ, and the pill count. Receiver operating characteristic (ROC) curve analysis was performed to determine the ability of the MASRI to distinguish between subjects that were adherent or non-adherent using the BMQ as the external standard.

Results: Of 131 women, adherence data was available for 101 (77%) and 99 women (76%) at 8 and 12 weeks, respectively. Mean age of the cohort was 61 years (IQR, 52-70) and 55% had a history of prior anti-cholinergic use. Based on the BMQ, 44% and 48% women were non-adherent at 8 and 12 weeks, respectively. At 8 weeks, 80% women diagnosed as non-adherent by the MASRI reported a positive belief/motivational barrier on the BMQ as compared to 38% of adherent women ($p < 0.001$). Similar findings were noted at 12 weeks (70% vs. 40%, $p = 0.003$). The MASRI was highly predictive of non-adherence as measured by the BMQ at 8 weeks (AUC = 0.960, 95% CI, 0.92-0.99) and 12 weeks (AUC = 0.953, 95% CI, 0.91-0.99). The sensitivity, specificity and positive likelihood ratio of the MASRI for predicting non-adherence was 91%, 82%, and 5.1 at 8 weeks, and 90%, 85%, and 6.1 at 12 weeks. Only 21% women at 8 weeks and 15% women at 12 weeks brought in their containers for pill counts; adherence rate as measured by pill count correlated moderately with the MASRI at 8 weeks ($r = 0.489$, $p = 0.02$) but not at 12 weeks ($r = 0.045$, $p = NS$).

Conclusion: The MASRI is a valid tool for measuring adherence to anti-cholinergic drugs in women with overactive bladder. Pill counts are not useful for measuring adherence in women with overactive bladder in a clinical setting.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Uduak U. Andy: Nothing to disclose
Heidi S. Harvie: Nothing to disclose
Ariana L. Smith: Nothing to disclose
Kathleen J. Propert: Nothing to disclose
Lily A. Arya: Nothing to disclose

NON-ORAL POSTER 34

To Find out the Role of Anti-Mullerian Hormone (AMH) in Ovarian Reserve

Gorkemli H, Simsek EU. Department of Obstetrics and Gynecology, Konya Meram Medical School, Konya, Turkey

Objectives: Infertility is a social problem related to many part of the society in recent years, with social and psychological dimensions. As a result of especially changing role models of women nowadays, an increase in professional and educational levels and the delay in the ages of marriage and giving birth, demands have been increased for treatment, and new diagnostic criteria and treatment modalities are needed to be performed in a quicker way. Therefore, overian reserve tests have been introduced in literature as a novel scanning and diagnostic method becoming increasingly important for counselling infertile patients and planning appropriate treatment. Used among ovarian reserve tests, antimullerian hormone (AMH) (or called with another name as mullerian inhibiting substance) was showed to be produced from granulosis cells in primary and preantral folliculles, to stay stable during menstrual cycle, to indicate no changes and not to be affected by endogenous hormonal changes. So, in the present study, so as to define ovarian reserves, we aimed to compare AMH with other traditional changes, age, serum follicule stimulating hormone (FSH), estradiol (E2), lutenizian hormone (LH) tested on day 2 after menstrual bleeding and antral follicule counts.

Materials and Methods: Admitted to the IVF Department of Meram Medical School of Necmettin Erbakan University between January 2012 and March 2013 and enrolled into IVF/ICSI program, 38 cases at the ages of 24-42 were included in to the study. On day 3 of the menstrual cycle, levels of serum FSH, LH, estradiol, and AMH, and via ultrasonography, antra follicle count (range, 2-6 mm) were performed. Inclusion criteria were composed as follows: age <42 years; regular menstrual cycles; basal serum FSH concentration <12 IU/L, and with two ovaries, and transvaginal ultrasound scan were performed. All women included in our study underwent FSH stimulation and pituitary suppression (GnRH-agonist/GnRH-antagonist protocols). Women were considered poor-responders if they had <5 oocytes, and p value < 0.05 was considered statistically significant.

Results: In the study, oocyte number >5 was accepted as successful. Compared collected oocytes with age, levels of FSH LH, estradiol, and AMH on day 2 of the menstrual cycle, a significant association was found only with AMH. Mean AMH values were found to be 2.41 ± 0.43 among unsuccessful patients and 0.55 ± 0.27 ($p < 0.05$) in successful patients, and this rate is statistically significant. Also, a strong correlation was found between serum AMH and antral follicle numbers ($p < 0.05$, $p = 0.00$).

Conclusion: Antral follicle count and AMH are predictors of high ovarian response, and AMH measurement can be a valuable contribution to traditionally designed fecundability and ovarian reserve studies.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Huseyin Gorkemli: Nothing to disclose
Elif U. Simsek: Nothing to disclose

NON-ORAL POSTER 35

Obesity, New Over-Active Bladder Symptoms, and Complete Mesh Excision are Associated with Better Patient-Reported Outcomes after Mesh Excision Surgery for Vaginal Mesh-Related Complications: A Follow-Up Survey

Hokenstad ED, El-Nashar SA, Occhino JA, Trabuco E, Gebhart J, Klingele C. Obstetrics and Gynecology, Mayo Clinic, Rochester, Minnesota

Objectives: To identify independent predictors of successful outcomes after mesh excision surgery for treatment of vaginal mesh related complications.

Materials and Methods: A historical cohort study followed by a follow-up telephone survey. Patients who had surgery for treatment of vaginally placed mesh-related complications from January 1, 2003, through December 31, 2011, were identified. Successful outcome was defined as patient response "very much better" or "much better" on the Patient Global Impression of Improvement Scale. Univariable and multivariable logistic regression models were used to identify independent risk factors for successful treatment. Statistical analysis was performed using JMP 9.0 software (SAS Inc., Carey, NC).

Results: Of 68 patients who had surgery for vaginal mesh-related complications, 41 (60.3%) patients responded to our survey and approved participation in this study. The mean age was 56.4 (±11.6) years. Median duration from the original surgery was 15.3 (range, 1.2-108.9) months. Of 41 responders, 22 (53.7%) reported successful outcome after mesh excision. In the univariable analyses, BMI >30 kg/m2, new over-active bladder (OAB) symptoms, and complete excision of mesh were associated with successful outcome with unadjusted odds ratios (ORs) of 4.85 (0.88-26.74), 4.00 (0.72-22.28), and 2.76 (0.73-10.46), respectively (Table). These associations remained significant in the multivariable analysis with adjusted ORs of 8.41 (1.35-92.41), 7.76 (1.18-89.55), and 5.46 (1.10-41.59), respectively. The area under the curve of the receiver operator characteristic was 0.781 (Figure).

Conclusion: Obesity, new onset OAB symptoms, and complete mesh excision are independent predictors of patient reported successful outcomes after surgical management of vaginal mesh-related complications.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Erik D. Hokenstad: Nothing to disclose
Sherif A. El-Nashar: Nothing to disclose
John A. Occhino: Nothing to disclose
Emanuel Trabuco: Nothing to disclose
John Gebhart: Nothing to disclose
Christopher Klingele: Nothing to disclose

Table
Logistic Regression Models for Predictors of Successful Outcome after Surgical Management for Complications Related to Vaginal Mesh Placement

	Univariable Analysis Unadjusted OR (95% CI)	p value	Multivariable Analysis Adjusted OR (95% CI) †	p value
Age >60 years	0.95 (0.25-3.61)	0.943		
Duration from original mesh surgery <6 months	1.56 (0.25-9.75)	0.635		
BMI >30 kg/m2	4.85 (0.88-26.74)	0.057*	8.41 (1.35-92.41)	0.021
Smoking vs. never	1.20 (0.33-4.36)	0.782		
Mesh Kit vs. Mesh Augmentation	1.04 (0.20-5.45)	0.964		
New discharge or bleeding	1.75 (0.47-6.48)	0.401		
New pain or dyspareunia	0.42 (0.04-4.48)	0.464		
New OAB symptoms	4.00 (0.72-22.28)	0.099*	7.76 (1.18-89.55)	0.032
New bowel symptoms	1.56 (0.25-9.76)	0.635		
Complete vs. partial excision of mesh	2.76 (0.73-10.46)	0.132*	5.46 (1.10-41.59)	0.037

BMI, body mass index; OAB, overactive bladder; CI, confidence interval; OR, odds ratio.
*Risk factors with univariable analysis odds ratio with p value < 0.2 were included in the multivariable analysis.

†The area under the curve for receiver operator characteristic for the multivariable regression model was 0.781.

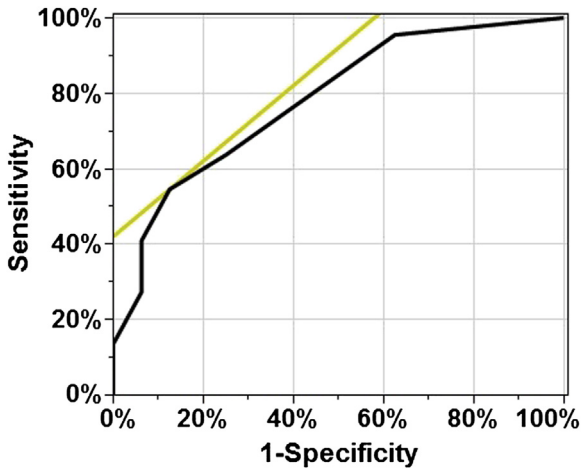


Figure. Receiver Operator Characteristics for Multivariable Model.

NON-ORAL POSTER 36

Medicated Vaginal Packing following Surgery for Vaginal Prolapse: Description of Current Practices

Adams-Piper E,[1] Postlethwaite D,[2] Lyon L,[2] Castillo P.[1] [1]OB/GYN, Kaiser Santa Clara, Santa Clara, California; [2]Division of Research, Kaiser Permanente, Oakland, California

Objectives: Vaginal packing is routinely placed following vaginal surgery, particularly after procedures that extensively incise the vaginal mucosa such as anterior and/or posterior colporrhaphy. There are many options with regards to packing types, including plain packings and medicated packings, with multiple types of medications used. Despite its common use, there are few studies that have examined the use of vaginal packing after colporrhaphy. Our literature review found no recent studies that evaluated rate of packing use, types of packing used, or postoperative outcomes that could support the use of one type of medicated packing over another. The aim of this study was to describe the use and documentation of vaginal packing following anterior and/or posterior vaginal repair in a large health care system. Specifically, we wanted to examine how often vaginal packing is placed, types of medication used, and the documentation of packing and medication following vaginal repair surgery.

Materials and Methods: This study is a retrospective review utilizing the electronic health record of the Kaiser Permanente Northern California (KPNC) Region. Subjects were identified based on ICD-9 or CPT coding for anterior and/or posterior colporrhaphy between 2008 and 2011. A computer-generated, random selection of subjects with relevant procedures during this time period was created and the electronic medical records of identified subjects were extensively reviewed. Demographic data was abstracted and surgical records were reviewed for vaginal packing use and medication type. Postoperative outcome data, including infection, hematoma, and defects in wound healing, were individually collected.

Results: We reviewed charts of 530 subjects. Seventeen were excluded for miscoded procedures or incomplete operative documentation. Three hundred ninety-nine (77.8%) subjects had placement of a vaginal packing at the completion of surgery documented by the surgeon. Five subjects had documentation that no packing was placed. Twelve (3.0%) subjects with recorded packing had unmedicated packing placed. One hundred ninety-two of the subjects with documented packing (48.1%) had no surgical record of the medicated or unmedicated status of the packing. In subjects with documented medicated vaginal packing, estrogen based creams were most commonly employed with 144 (73.8%) subjects receiving an estrogen impregnated packing. Other medications used include iodoform, metrogel, cleocin, and bacitracin. Subspecialty-trained surgeons were no more likely to document medication use than were general gynecologists. One hundred twenty-three (38%) of the subjects with any vaginal packing had an outcome of interest at their postoperative visit. However, the majority of these outcomes have limited long-term clinical significance.

Conclusion: Although vaginal packing is frequently used following vaginal repair, there are no standard practices. Although there are limitations to this study (including inconsistencies regarding documentation), we feel it contributes to the general description of current practice and may spur interest in future research of this topic.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Emily Adams-Piper: Nothing to disclose
Debbie Postlethwaite: Nothing to disclose
Liisa Lyon: Nothing to disclose
Peter Castillo: Nothing to disclose

NON-ORAL POSTER 37

Abdominal Wall Endometriosis: A 12-Year Experience at a Large Academic Institution

Ecker A, Donnellan NM, Shepherd JP, Lee T. OB/GYN, Magee Women's Hospital UPMC, Pittsburgh, Pennsylvania

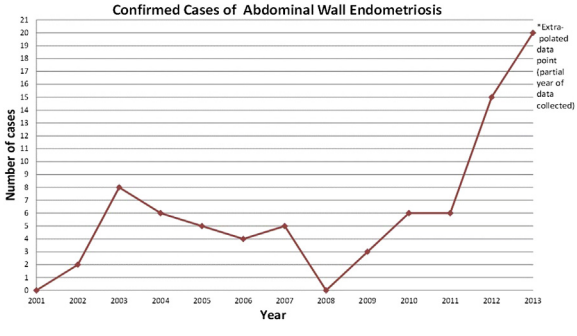
Objectives: To provide a comprehensive review of patient characteristics, clinical presentation, surgical findings, and natural history for cases of surgically excised abdominal wall endometriosis (AWE) from a gynecologist's perspective.

Materials and Methods: A medical record search was performed for all cases of excised cutaneous endometriosis at an academic tertiary care center between 2001 and 2013. The acquired cases were cross-referenced with the pathology database to confirm diagnosis of extra-peritoneal endometriosis. A total of 65 women met inclusion criteria and their charts were reviewed. Descriptive data was collected and analyzed.

Results: Of 65 patients with a mean age of 35 years, the most prevalent clinical presentations were abdominal pain (73.8%) and/or a mass/lump (63.1%). A total of 81.5% of the study participants had a history of cesarean section and 6 patients had never had any prior surgery. Five patients (7.7%) underwent a repeat excision of AWE during the course of this study and those patients were more likely to have had a higher number of prior cesarean sections ($p = 0.007$) or laparoscopies (for any indication; $p = 0.002$). Intraoperatively, the prevalence of tissue planes affected included: 18.8% skin, 96.9% adipose, 67.2% fascia, 17.2% rectus muscle, and 20.3% peritoneum. We were unable to demonstrate a correlation between increasing numbers of open abdominal surgeries (including cesarean section) and time to presentation or depth of involvement. Age, BMI, and parity were also not predictive of depth of involvement. There was an increase in pain at the umbilicus (66.7% vs. 2.1%, $p < 0.001$) and umbilical lesions (75% vs. 5.6%, $p < 0.001$) in nulliparous women as compared to parous women. Additionally, patients with a prior cesarean section were much more likely to have a lesion at or near their prior incision (98.04% vs. 27.27%, $p < 0.001$) as opposed to at the umbilicus (1.96% vs. 72.73%). Time from initial surgery to presentation ranged from 1-32 years (median 7.0; IQ range, 4-11.5) and time from most recent relevant surgery ranged from 1-32 years (median 4.0; IQ range, 3-7). 75.4% of AWE excisions were performed with an open incision, 7.7% were performed laparoscopically, and 16.9% used a combination of both methods. Seventy-seven percent of the cases were performed by gynecologists and there was no difference in surgical approach based on lesion location or surgeon type. Over the 12-year case series, there appeared to be a trend toward increasing case numbers of AWE (Figure 1).

Conclusion: In women presenting with a mass or pain at a prior abdominal incision, the differential diagnosis should include AWE. We were unable to demonstrate any patient characteristics that can function as predictors for development of AWE other than a history of cesarean section. A large percentage of our case series were performed by gynecologists and we noted very low recurrence rates, indicating that this disease is appropriate for gynecologists to surgically manage. The rising numbers of cases may be due to increased numbers of repeat cesareans or merely an increased awareness of this disease entity.

Figure 1: 12-Year Trend at Magee Womens Hospital - Pathologically Confirmed Cases of Abdominal Wall Endometriosis



DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Amanda Ecker: Nothing to disclose
Nicole M. Donnellan: Nothing to disclose
Jonathan P. Shepherd: Nothing to disclose
Ted Teh MIn Lee: Ethicon endosurgery, Consulting, Consulting fee

NON-ORAL POSTER 38

Patient Outcomes and Morbidity in the Management of Pain following Incontinence Surgery using Synthetic Grafts

Lazare D, Kaye S, Hyakutake M, Geoffrion R, Koenig N, Cundiff GW. University of British Columbia, Vancouver, British Columbia, Canada

Objectives: The purpose of this study is to describe outcomes and morbidity related to the different approaches to managing groin pain and identify patient variables associated with poor outcomes. The primary outcome is subjective improvement in pain on the McGill Pain Questionnaire. Secondary outcomes include morbidity associated with management of graft complications, including the number of surgeries, surgical blood loss and complications, postoperative complications, including erosion, chronic sinus tracts, fistula, sexual function, and recurrent urinary incontinence.

Materials and Methods: The present study is a descriptive multi-centered retrospective cohort study of women with graft complications, including groin pain following mid-urethral slings for urinary incontinence. This analysis will include all women with groin pain following a mid-urethral sling. Subjects are stratified based on the method of management, including; incision, or complete excision of graft. We describe outcomes and morbidity for these different approaches and identify patient variables associated with poor outcomes. Recurrent stress urinary incontinence will be defined as symptoms of stress urinary incontinence based on a score of >3 on question #17 of the PFDI 20 and repeat surgery for stress urinary incontinence. The study subjects are drawn from the Management of Graft Erosions Following Pelvic Reconstructive Surgery (GEM) study, a collaborative multi-disciplinary study of complications associated with surgical mesh in the practices of members of the Western Society of Pelvic Medicine. Inclusion criteria: a mid-urethral sling involving a synthetic or biological graft with groin pain. Exclusion criteria: inability to comprehend written/spoken English.

Results: Nineteen subjects met inclusion criteria and were stratified based on the method of treatment. Nine patients underwent complete excision of mesh, 6 had the graph trimmed, and 4 patients were treated with mucosal closure or graft trimming followed by complete excision. With respect to resolution of groin pain at 6 weeks post-operative, 6 patients experienced complete resolution, 9 patients experienced partial resolution, and 4 patients experienced no resolution of their pain. Associated morbidity amongst both treatment groups was low. One patient from the complete excision group experienced a urinary tract infection and 1 patient from the graft trimming group experienced a surgical site infection. In addition, 4 patients experienced recurrent incontinence requiring a subsequent surgical intervention.

Conclusion: The current study provides descriptive information concerning the outcomes and morbidity of a cohort of patients with pelvic pain related to grafts employed to treat stress urinary incontinence. Patients in both groups demonstrated improvement or resolution in groin pain symptoms regardless of trimming or complete excision of mesh. Associated morbidity amongst both treatment groups was low. A follow-up prospective study is planned to determine which approach offers superior results with respect to resolution of groin pain.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Darren Lazare: Nothing to disclose
Stephen Kaye: Nothing to disclose

Momoe Hyakutake: Nothing to disclose
Roxana Geoffrion: Nothing to disclose
Nicole Koenig: Nothing to disclose
Geoffrey W. Cundiff: Nothing to disclose

NON-ORAL POSTER 39

Comparative Outcomes of Augmented versus Non-Augmented Anterior Defect Repair in Patients with Symptomatic Pelvic Organ Prolapse

Buscaglia N,[1] March W,[4] Amey A,[2] Postlethwaite D,[2] Cho M,[3] Morrill M.[3]
[1]Women's Health, Kaiser Permanente Northern California, Vallejo, California; [2]Division of Research, Kaiser Permanente Northern California, Oakland, California; [3]Women's Health, Kaiser Permanente Northern California, San Francisco, California; [4]Women's Health, Kaiser Permanente Northern California, Santa Clara, California

Objectives: To determine if patients with anterior support defects who underwent augmented, arcus to arcus anterior suspension with cadaveric dermis graft had decreased rates of failure compared to native tissue repair.
Materials and Methods: Retrospective medical record review identified 1699 Kaiser Permanente Northern California (KPNC) female members who underwent surgical correction of anterior segment prolapse between 2004 and 2011 using KPNC's electronic medical record data. Subjects were identified from electronic databases via ICD-9 codes/CPT procedure codes. Chi-square tests and t-tests were used to compare differences in demographic and clinical characteristics (age, race, subsequent pessary use, reoperation, surgical complications, and morbidities). Failure rates were defined as reoperation or post-operative pessary use. Multivariable regression was used to evaluate risk factors for failure. Cox proportional hazard's models were used to compare differences in hazard ratios of failure.
Results: Of 1699 records reviewed, 259 underwent repair with cadaveric dermis graft augmentation and 634 with native tissue only. A total of 806 records were excluded due to repair with a non-study graft or surgery that did not involve vaginal repair of the anterior segment. There were no statistically significant differences in the demographic characteristics of each repair group. The cadaveric dermis group was 70% less likely to use a pessary postoperatively, (CI, 0.14-0.77, p = 0.01). The cadaveric dermis group was 59% less likely to fail the index surgery (CI, 0.21-0.81, p = 0.001). Regression analysis shows that women with a cadaveric dermis augmented anterior defect repair were 52.8% less likely to have the hazard of failure compared with women who underwent a native tissue repair (CI, 0.23-0.87, p = 0.025). There were no statistically significant differences in morbidity or reoperation rates for graft removal between the two groups.
Conclusion: Cadaveric dermis augmented anterior defect repair had statistically significant lower rates of postoperative pessary use and anterior segment failure when compared to native tissue repair.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Nicole Buscaglia: Nothing to disclose
Whitney March: Nothing to disclose
Annette Amey: Nothing to disclose
Debbie Postlethwaite: Bayer HealthCare Pharmaceuticals Inc., Investigator, Research funding support
Maureen Cho: Nothing to disclose
Michelle Morrill: Nothing to disclose

NON-ORAL POSTER 40

Geographic Catchment Area for Tertiary Medical Center is the Same for Urogynecology Patients with and without Mesh Concerns

Rice NT, Ward RM. Female Pelvic Medicine and Reconstructive Medicine, Vanderbilt University Medical Center, Nashville, Tennessee

Objectives: The objective of this study was to determine if women with mesh complaints travel greater distances than women without mesh complaints when presenting for initial Urogynecology care at a tertiary medical center.
Materials and Methods: Our patient population encompasses a large geographic area, in part due to the small density of tertiary medical centers in the Southeast. This retrospective cohort study included all new urogynecology patients seen at our center between July 1, 2010, and January 13, 2012. These were identified using CPT codes 99201-99205 and 99241-99245. Each patient's medical record was reviewed for demographic information, comorbidities, purpose of new patient visit, number of prior pelvic reconstructive surgeries and/or incontinence procedures, and history of prior pelvic mesh. The distance traveled for each patient was determined using the patient's home zip code, our institution's unique zip code, and Google Maps to calculate the intervening road distance. For standardization, the first route option generated by Google Maps was used for analysis. Descriptive statistics were performed and the Mann-Whitney test used for comparative evaluations.
Results: A total of 1367 new patient visits were identified, of which 207 women had prior mesh placement and 79 had a mesh complaint. The remaining 1288 women were seen for other urogynecologic indications. Age, race, parity, and BMI were similar between patients with a perceived mesh complication and patients seen for other reasons. An overall healthy patient population was observed with a median Charlson Comorbidity Index score of 0 (25th percentile) and 1 (75th percentile) for both groups. Patients with mesh complaints had undergone more pelvic reconstructive and/or incontinence surgeries than patients seeking care for other reasons, median 1 (1.2) versus 0 (0.0), respectively. The median distance traveled was the same for patients with and without mesh complaints: 37 miles (15-74), IQR 59 versus 37 miles (16-75), IQR 59, p = 0.922, respectively. Broken down by month, there was no change in distance traveled following July 13, 2011, FDA mesh notification (see Figure 1). Among women with mesh complaints, the median distance traveled after the FDA notification was the same, but the interquartile range increased from 47 to 73 miles (pre FDA notification 36 miles [13-60], IQR 47 versus post-FDA notification 37 miles [16-89], IQR 73, p = 0.559). Thus, a quarter of these women traveled >60 miles before the FDA notification and a quarter traveled >89 miles following the notification.
Conclusion: In conclusion, the distance traveled for urogynecology care at this tertiary center was the same for women with mesh complaints and women seen for other reasons. Among women with mesh complaints, greater travel distances were seen for the top quartile after the FDA notification was released.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Nicklaus T. Rice: Nothing to disclose
Renee M. Ward: Nothing to disclose

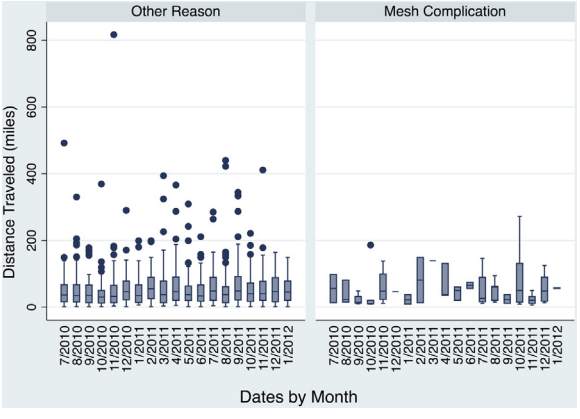


Figure. Box plots of distance traveled by new patients with and without a mesh complaint by calendar month. FDA mesh notification was July 2011.

NON-ORAL POSTER 41

Urethral Diverticulectomy and Urinary Incontinence

Ezzell A, Sokol AI, Gutman RE, Iglesia CB, Park A. Obstetrics and Gynecology, Washington Hospital Center, Washington, DC

Objectives: The primary aim was to determine the rate of concomitant and subsequent surgeries for stress urinary incontinence among women undergoing urethral diverticulectomy. A secondary aim was to determine the rate of repeat urethral diverticulectomy.

Materials and Methods: This study was a retrospective review using the Explorys database, a de-identified data repository of 13 health systems, between January 1, 2004, and April 20, 2013. These data are estimated to the nearest 10 patients. A search was performed to determine how many women were diagnosed with urethral diverticulum, and those women who underwent urethral diverticulectomy using ICD-9 and CPT codes, respectively. A search was also performed to determine how many women were diagnosed with stress incontinence using ICD-9 codes and those patients who underwent a procedure for incontinence prior to, concomitantly or any time after initial diverticulectomy using CPT codes. The rate of repeat urethral diverticulectomy was also queried.

Results: A total of 13,274,280 male and female patients were identified in the database during the study period. Of those, 2050 women were diagnosed with urethral diverticulum and 470 of those had both stress urinary incontinence and urethral diverticulum. Less than 10 patients had an incontinence procedure prior to the diverticulectomy. Two hundred thirty urethral diverticulectomies were performed over the study period, and 20 (8.7%) women had a concomitant anti-incontinence procedure. Of the patients who had a diverticulectomy, 70 (30.4%) had urinary incontinence at the time of the diverticulectomy, 30 (13%) had a new diagnosis of stress urinary incontinence at any time 30 days after the surgery, and 10 of those women with de novo urinary incontinence underwent a subsequent anti-incontinence procedure after the diverticulectomy. Less common complications included urethrovaginal fistula (<10 of the 230 patients) and urethral stricture (<10 of the 230). The rate or repeat urethral diverticulectomy was 26.1%.

Conclusion: Of those diagnosed with urethral diverticulum, 11.2% underwent a diverticulectomy. There was a higher rate of concomitant urinary incontinence in women with a diverticulum undergoing a diverticulectomy compared to the overall group (30% vs. 23%). The most common complication from a diverticulectomy was stress urinary incontinence, and 30% of patients with de novo stress incontinence underwent a subsequent stress incontinence surgery. The 26.1% rate of repeat diverticulectomy is higher than previously reported (2.8% to 17.2%).

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Ann Ezzell: Nothing to disclose
Andrew I. Sokol: Nothing to disclose
Robert E. Gutman: Nothing to disclose
Cheryl B. Iglesia: Nothing to disclose
Amy Park: Nothing to disclose

NON-ORAL POSTER 42

Sacrocolpopexy without Synthetic Mesh

Reagan KM,[1] Tulikangas P,[1] O'Sullivan D.[2] [1]Female Pelvic Medicine and Reconstructive Surgery, Hartford Hospital, Hartford, Connecticut; [2]Research Administration, Hartford Hospital, Hartford, Connecticut

Objectives: Pelvic organ prolapse is a common problem and is often managed surgically with the use of synthetic mesh. Many women have concerns regarding the use of mesh because of recent reports of mesh related complications. Abdominal sacrocolpopexy using autologous rectus fascia may provide an alternative to sacrocolpopexies using synthetic mesh. The aim of this study was to evaluate the safety of abdominal sacrocolpopexy with autologous rectus fascia.

Materials and Methods: This study is a descriptive case series. After IRB approval, the preoperative and postoperative charts of 37 consecutive women who elected to undergo abdominal sacrocolpopexy using autologous rectus fascia between January 2010 and August 2013, inclusive, were reviewed. Adverse events (AEs) were recorded. Prevalence of these AEs (Table 1) was compared with the prevalence available in the literature from recent multicenter randomized controlled trials (CARE trial and SISTEr trial).

Results: Women were followed for a median of 4.03 months with a range of 2.3 weeks to 30.9 months. Seven of the thirty-seven (7/37, 18.9%) women had an infectious complication following surgery. Three of the seven (3/7, 8.1%) involved superficial wound infections or separations. One of these three cases was confounded by a concurrent abdominoplasty. Two of the 2 patients (2/7, 5.4%) were diagnosed with pneumonia and two were diagnosed with urinary tract infections in the immediate postoperative period. One of the thirty-seven (1/37, 2.7%) required a transfusion of two units of packed red blood cells. This patient underwent a concurrent rectopexy with rectosigmoid resection at the time of her sacrocolpopexy and bled at her colonic anastomosis. Three of the thirty-seven patients (3/37, 8.1%) were readmitted; one for postoperative ileus and two for poorly controlled postoperative pain. There were no cases of incisional hernias. In the SISTEr trial, hernias occurred in 1.2% of patients who underwent a rectus fascia pubovaginal sling for the treatment of incontinence. There were no cases of deep vein thrombosis, venous thromboembolism, or small bowel obstruction reported.

Conclusion: Abdominal sacrocolpopexy with rectus fascia is a safe alternative to abdominal sacrocolpopexy with synthetic mesh for women who wish to avoid the complications associated with surgical prolapse repair using mesh.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Krista M. Reagan: Nothing to disclose
Paul Tulikangas: Nothing to disclose
David O'Sullivan: Nothing to disclose

Table

Adverse Event (AE)	Frequency of AE in this study	Frequency of AE in mesh SCP
Mesh Erosion	0/37 (0%)	10.5%
Infectious	7/37 (18.9%) 3/37 (8.1%)	4.6% 10.9%
complication	2/37 (5.4%) 2/37 (5.4%)	
-wound infection		
-pneumonia		
-urinary tract infection		
Transfusion	1/37 (2.7%)	4.4%
Readmission -pain	3/37 (8.1%) 2/37 (5.4%)	3.6%
-ileus	1/37 (2.7%)	
DVT or VTE	0/37 (0%)	3.3%

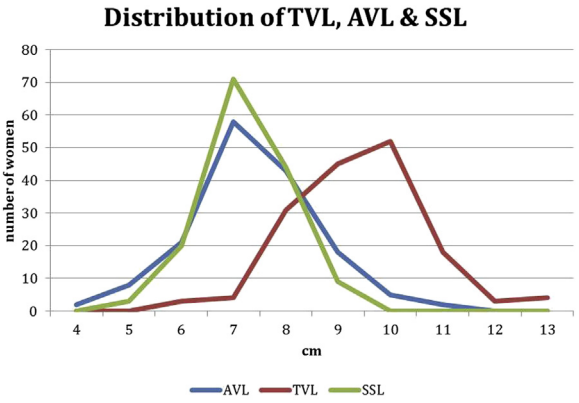
NON-ORAL POSTER 43

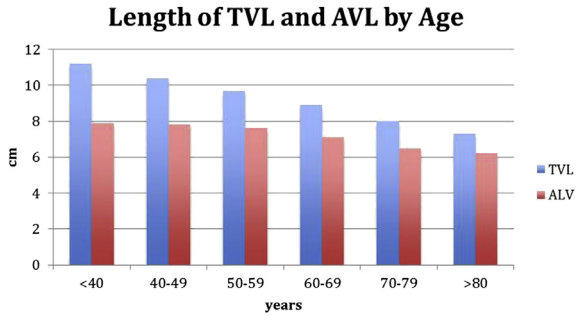
Variability of Anterior Vaginal Wall and Total Vaginal Length

Vilasagar S, Doyle PJ, Buchsbaum GM. OB/GYN, University of Rochester Medical Center, Rochester, New York

Objectives: To assess on vaginal examination the variability of anterior vaginal wall, total vaginal length and distance to sacrospinous ligament.

Materials and Methods: The IRB granted exempt status for this study. POP-Q measurements were obtained as part of initial pelvic evaluation of





women presenting to a urogynecologic outpatient practice. In addition to POP-Q measurements, the length of the anterior vaginal wall (AVL = distance from hymeneal ring to cervix) and distance from hymeneal ring at 9'oclock to right sacrospinous ligament (SSL) were obtained. These additional measurements were not obtained in women who had undergone prior vaginal surgery or hysterectomy. From the records, patient age, TVL, AVL, and SSL were extracted and entered into a database. Descriptive data analysis was performed.

Results: Data was collected on 161 subjects with a mean age of 59 years, ranging from 29 to 90 years.

The average TVL was 9.4 cm (range, 6-13 cm)

The average AVL was 7.3 cm (range, 4-11 cm)

The mean difference between TVL and AVL was 2.1 cm (range, 0-6 cm)

The average distance from hymeneal ring to SSL was 8.1 cm (range, 5-9 cm) (Table 1).

TVL and AVL decrease with age from mean TVL and AVL of 11.2 cm and 7.9 cm in women less than 40 to TVL and AVL of 7.3 and 6.2 in women over the age of 80, respectively (Table 2). In most women the AVL is equal to the distance to the SSL.

Conclusion: There is a great variation in length of vagina as well as the anterior vaginal wall in women of all ages. In most women, the anterior vaginal wall is an average of 2 cm shorter than the TVL and reaches to the level of the sacrospinous ligament. This is important when considering an apical suspension to the SSL without concomitant hysterectomy. In addition, in some women the anterior vaginal wall is markedly shorter than the TVL, resulting in a distal location of the cervix in the absence of an apical defect or cervical elongation. Last, the length of the vagina decreases with advancing age.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Smitha Vilasagar: Nothing to disclose
Paula J. Doyle: Nothing to disclose
Gunhilde M. Buchsbaum: Nothing to disclose

NON-ORAL POSTER 44

Risk Factors for Perioperative Complications after Le Fort Colpocleisis

Catanzarite T,[1] Rambachan A,[2] Mueller M,[1] Pilecki M,[2] Kim JY,[2] Kenton K.[1] [1]OB/GYN, Northwestern University Feinberg School of Medicine, Chicago, Illinois; [2]Surgery, Northwestern University Feinberg School of Medicine, Chicago, Illinois

Objectives: To identify factors associated with complications following colpocleisis using the National Surgical Quality Improvement Program (ACS-NSQIP) database and to determine whether complications differed with and without concomitant sling procedure at the time of colpocleisis.

Materials and Methods: Women undergoing Le Fort colpocleisis procedures from 2006 to 2012 were identified in the ACS-NSQIP database utilizing Current Procedural Terminology (CPT) codes for Le Fort colpocleisis (57120) and sling (57288). The Institutional Review Board determined that the study did not require formal review, as it was a retrospective review of de-identified data. Primary outcomes were 30-day complication rates after colpocleisis, categorized as medical, surgical, and overall complications. Secondary outcomes were risk factors for perioperative complications after Le Fort colpocleisis as well as impact of age, operative time, and concomitant sling procedures on perioperative morbidity. Demographics, clinical characteristics, comorbidities, and procedural variables were investigated as potential risk factors for complications.

Results: Two hundred eighty-three women in the ACS-NSQIP database underwent Le Fort colpocleisis from 2006 to 2012. Twenty-three patients (8.1%) experienced one or more complications, with 3 patients (1.1%) experiencing two distinct complications, for a total of 2 surgical complications and 24 medical complications. Two patients experienced two medical complications (UTI/stroke and UTI/sepsis) and the third had one medical and one surgical complication (UTI/organ space infection). The most common complication was UTI (18/283, 6.4%). Mortality rate was 0.4%. Increased complications were associated with age <75 years ($p = 0.03$), COPD ($p = 0.029$), disseminated cancer ($p = 0.03$), and open wound infection at the time of surgery ($p = 0.022$). Complication rates did not differ based on operative time ($p = 0.783$), inpatient status ($p = 0.236$), resident physician involvement ($p = 0.352$), or concomitant sling procedure ($p = 0.808$). Women >75 years old had a trend toward fewer overall complications (7% versus 15.7%, $p = 0.086$) and decreased rates of UTI (4.7% versus 11.4%, $p = 0.045$). There was no difference in baseline characteristics between women who underwent colpocleisis without sling (n = 191) versus colpocleisis with sling (n = 92). Patients who underwent colpocleisis without and with concomitant sling had similar rates of overall complications (8.9% versus 9.8%, $p = 0.969$), medical complications (7.9% versus 9.8%, $p = 0.84$), surgical complications (1% versus 0%, $p = 0.325$), and UTI (5.8% versus 7.6%, $p = 0.55$).

Conclusion: Mortality and complication rates after colpocleisis are low, with UTI being the most common postoperative complication. In our cohort, undergoing a concomitant sling procedure did not increase complication rates.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Tatiana Catanzarite: Nothing to disclose
Aksharananda Rambachan: Nothing to disclose
Margaret Mueller: Nothing to disclose
Matthew Pilecki: Nothing to disclose
John Y. Kim: Nothing to disclose
Kimberly Kenton: Nothing to disclose

NON-ORAL POSTER 45

Impact of Operative Time on Perioperative Morbidity in Abdominal Myomectomy

Catanzarite T,[1] Saha S,[2] Rambachan A,[2] Kim JY,[2] Milad M.[1] [1]OB/GYN, Northwestern University Feinberg School of Medicine, Chicago, Illinois; [2]Surgery, Northwestern University Feinberg School of Medicine, Chicago, Illinois

Objectives: Operative time has been identified as an independent risk factor for perioperative complications in the general surgery literature, but this relationship has not been explored in the gynecologic field. Our objective was to examine the impact of operative time on risk of perioperative morbidity following abdominal myomectomy.

Materials and Methods: Data from the National Surgical Quality Improvement Program (ACS-NSQIP) Database were reviewed for patients undergoing abdominal myomectomy between 2006 and 2011. The Institutional Review Board determined that the study did not require IRB review as it utilized de-identified data. Primary outcomes of interest were 30-day medical, surgical, and overall complications. Operative times were divided into 60-minute intervals and complication rates were analyzed. Demographics and comorbidities were compared for patients with excessive operative times. Bivariate analysis was performed to assess the association between operative time and complications. A regression analysis was then performed to adjust for preoperative variables.

Results: A total of 1271 patients were identified who underwent abdominal myomectomy between 2006 and 2011. Examination of primary outcomes revealed an incremental increase in complications as surgical duration increased. Patients with operative times above and below 180 minutes were compared. There was no difference in smoking status, alcohol use, steroid use, previous operation within 30 days, medical comorbidities, or ASA classification between the two groups. Obese patients were more likely to have operative times over 180 minutes ($p = 0.049$). Operative times greater than 180 minutes were associated with increases in composite complications (24.1% versus 8.4%, $p < 0.001$), overall medical complications (22.3% versus 7.2%, $p < 0.001$), reoperations (4% versus 0.8%, $p < 0.001$), organ space surgical site infections (1.3% versus 0.2%, $p = 0.013$), pneumonia (0.9% versus 0.1%, $p = 0.026$), unplanned intubation (0.9% versus 0%, $p = 0.002$), pulmonary embolism (1.3% versus 0%, $p < 0.001$), mechanical ventilation over 48 hours (0.9% versus 0%, $p = 0.002$), need for blood transfusion (18.3% versus 5.3%, $p < 0.001$), and sepsis (1.8% versus 0.2%, $p = 0.002$). Urinary tract infection rates increased with longer operative times but not to a statistically significant degree (3.1% versus 1.6%, $p = 0.134$). There were no deep vein thrombosis events or deaths in the cohort. Multivariate regression analysis revealed an independent and significant impact of operative time on the risk of complications. For every additional 10 minutes of operative time, the likelihood of blood transfusion, pulmonary embolism, medical, and overall complications increased by 8.29% (OR = 1.008; 95% CI = 1.006-1.010) and the likelihood of reoperation rose by 7.22% (OR = 1.007; 95% CI = 1.003-1.011).

Conclusion: We have demonstrated a direct, independent correlation between increased operative time during abdominal myomectomy and increased perioperative morbidity. Patient- and disease-related risk factors for excessive operative time should be identified in order to select appropriate candidates for myomectomy and maximize surgical efficiency.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Tatiana Catanzarite: Nothing to disclose
Sujata Saha: Nothing to disclose
Aksharananda Rambachan: Nothing to disclose
John Y. Kim: Nothing to disclose
Magdy Milad: Nothing to disclose

NON-ORAL POSTER 46

Safety and 12-Month Outcomes of Laparoscopic Sacrocolpopexy for Post Hysterectomy Recurrent Anterior Vaginal Wall Prolapse

Fayyad AM. Urogynaecology, Luton and Dunstable University Hospital, Luton, United Kingdom

Objectives: To assess the anatomical and functional outcomes following laparoscopic sacrocolpopexy for recurrent anterior vaginal wall prolapse.

Materials and Methods: One hundred consecutive post hysterectomy women with recurrent anterior vaginal wall prolapse and stage 1 vault prolapse who underwent laparoscopic sacrocolpopexy with Y shaped mesh between the bladder and vagina after bladder dissection were prospectively evaluated. Patients were assessed at 12 months using the Prolapse Quality of Life (P-QOL) questionnaire; Patient Global Impression of Improvement (PGII) and were examined using the Pelvic Organ Prolapse Quantification system (POP-Q).

Results: Ninety-five percent of patients reported complete cure of vaginal bulge symptoms. Ninety-two percent reported feeling "much better" or "very much better" on PGII. Fifteen percent had recurrent anatomical prolapse defined as point Ba $\geq$ -1, which were asymptomatic apart from two patients that underwent further surgery. Postoperatively, vault support (point C) was at stage 0 in all patients. One patient developed vaginal mesh extrusion.

Conclusion: Sacrcolpopexy with Y shaped mesh placement is safe and effective treatment for recurrent anterior vaginal wall prolapse, with minimum complications and should be considered the gold standard in recurrent prolapse.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Abdalla M. Fayyad: Nothing to disclose

NON-ORAL POSTER 47

Is Robotic Assisted Myomectomy Safe for Large Uterine Fibroids?

Gunnala V,[1] Setton R,[1] Huang J.[2] [1]Obstetrics and Gynecology, Weill Cornell Medical College, New York, New York; [2]Obstetrics and Gynecology, New York Hospital Queens, Division of Minimally Invasive Surgery, Flushing, New York

Objectives: Many physicians continue to favor an open myomectomy for surgical management of large myomas. Our objective is to determine if robotic assisted myomectomy is a safe surgical approach for women with a markedly enlarged fibroid uterus.

Materials and Methods: This study was approved by the New York Hospital Queens Institutional Review Board. This was a retrospective chart review including all of the robotic myomectomies under one practicing surgeon from May 5, 2010, through July 31, 2013. A markedly enlarged fibroid uterus was defined as a leading myoma size $\geq$9 cm, as determined by pre-operative pelvic MRI. This patient population was then matched to those with a leading myoma <9 cm for age, parity, BMI,

Table 1
Demographic characteristics

	Leading myoma <9 cm (n = 141)	Leading myoma $\geq$9 cm (n = 66)	p value
Age	35.6 ± 5.8	36.9 ± 5.4	NS
Body mass index	26.3 ± 6.1	24.7 ± 6.0	NS
Parity (median)	0	0	NS
% with previous abdominal surgery	53.5%	25.8%	0.0002
% with >5 myomas	34.8%	26.2%	NS
% intramural	86.5%	86.2%	NS

Table 2
Peri-operative outcomes by leading myoma size

	Myoma <9 cm (n = 141)	Myoma $\geq$9 cm (n = 66)	p value
Operative time (minutes) median (25-75%)	92 (70-141)	130 (92-188)	< 0.0001
EBL (mL) median (25-75%)	25 (15-50)	100 (25-200)	< 0.0001
Duration of hospital stay (days)	0	0	NS

previous abdominal surgery, and number/location of myomas. Perioperative outcomes, defined as operative time (skin-to-skin time), estimated blood loss (EBL), and duration of hospital stay, were compared between the two groups. Major adverse outcomes were defined as conversion to laparotomy, blood transfusion, post-op pelvic abscess, and hospital readmission. SPSS software was utilized to perform all data analyses. In all cases, $p < 0.05$ was considered to be statistically significant.
Results: Of the 207 patients who met inclusion criteria, 66 patients (32%) had a leading myoma ≥ 9 cm. The leading myoma <9 cm group had more previous abdominal surgery (53% vs. 26%, p = 0.0002), but there were no other demographic differences between groups. The median pathology specimen weight was 192 g and 172 g for the <9 cm and ≥ 9 cm group, respectively. There were statistically significant increases in operative time (130 minutes vs. 92 minutes, $p < 0.0001$) and EBL (100 mL vs. 25 mL, $p < 0.0001$) for the group with a leading myoma ≥ 9 cm vs. leading myoma <9 cm. However, there were no significant differences in the major adverse outcomes between the two groups. No patients in either group had conversion to laparotomy. One patient in each group received a blood transfusion. One patient in the myoma <9 cm group developed a post-operative pelvic abscess and was readmitted. Five percent (n = 10) of patients had a leading myoma measuring ≥ 15 cm, and 18% (n = 36) had a specimen weight >500 g, of which none had any major adverse outcomes.
Conclusion: Although robotic assisted myomectomy for a large fibroid uterus, defined as leading myoma ≥ 9 cm, was associated with increased operative time and EBL, this was not clinically significant as there were no differences observed in major adverse outcomes. Thus, robotic-assisted myomectomy may be a safe surgical approach for markedly enlarged uterine fibroids.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

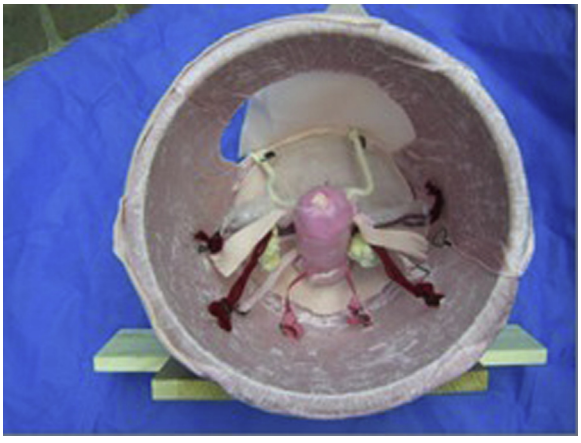
Vinay Gunnala: Nothing to disclose
Robert Setton: Nothing to disclose
Jianqun Huang: Nothing to disclose

NON-ORAL POSTER 48

Validation of a Low-Cost Vaginal Hysterectomy (VH) Simulation Model for Surgical Education

Fashokun TB,[1] Paka C,[1] Chen C,[1] Blomquist J,[2] Wilbur MB,[1] Memon H,[1] Altman K.[1] [1]Gynecology and Obstetrics, Johns Hopkins University, Baltimore, Maryland; [2]Obstetrics and Gynecology, Greater Baltimore Medical Center, Baltimore, Maryland

Objectives: To validate a low cost vaginal hysterectomy (VH) model for use in simulation surgical education.
Materials and Methods: A low cost VH simulation model was created and validation was performed in two phases. In the first phase face validity was performed using a convenience sample of Gynecology and Obstetrics Resident Physicians and Faculty. The model was rated in terms of anatomic accuracy and tactile realism by the surgeons using a 5-point Likert scale; as well as their opinion on the educational usefulness of the model. In the second phase, the construct validity of the VH model for simulating critical steps of a VH was assessed when the videotaped performances of the Gynecology resident and attending physicians performing VH on the model were evaluated by two blinded expert vaginal surgeons using the Reznick's validated Global Rating Scale of Operative Performance (GRS). The inter-rater reliability of the GRS was measured by comparing the GRS scores of the two-blinded faculty members using the intraclass correlation coefficient. Due to the small sample size construct validity of the model was evaluated by comparing the mean GRS scores between two groups; more junior residents (PGY1-3) and the chief resident (PGY-4) and faculty attendings using the independent sample t-test.



Results: A total of six participants (one resident each from PGY1-4 and two attending physicians) from 2 academic centers rated the VH model and performed a vaginal hysterectomy using the simulation model. Phase 1 result (face validity). The surgeons' average rating of anatomic accuracy and tactile realism (of possible 5 points) were 3.7 and 2.5, respectively. Overall, participants found the VH model to be at least a "very valuable" educational tool for novice surgeons, particularly for junior and senior residents. Phase 2 (construct validity). The inter-rater reliability for the blinded faculty in this study was 0.65 (good agreement). The average VH experience of the group of more experienced surgeons PGY-4 and faculty attendings prior to performing the simulation was 21 (4-50) compared to the group of less experienced surgeons (PGY1-3) less than 1 (0-2). The mean Global Rating Scale score of more experienced surgeons performing vaginal hysterectomy on the model was 25.9 +/- 6.14 was significantly higher than that of less experienced surgeons 8.83 +/- 2.02 ($p = 0.01$).
Conclusion: A low cost anatomically accurate and realistic VH model was created, which is sensitive to VH experience. All participants found it to potentially be a very valuable educational tool for training novice surgeons.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Tola B. Fashokun: Nothing to disclose
Chandhu Paka: Nothing to disclose
Chi Chiung Grace Chen: Nothing to disclose
Joan Blomquist: Nothing to disclose
MaryAnn B. Wilbur: Nothing to disclose
Hafsa Memon: Nothing to disclose
Kristiina Altman: Nothing to disclose

NON-ORAL POSTER 49

A Comparison of Risk Factors for Recurrent Stress Urinary Incontinence Surgery in Patients with and without a History of Tobacco Abuse

Sheyn D,[1] Taylor A,[2] James R,[1] Mahajan ST.[1] [1]OB/GYN, University Hospitals Case Medical Center, Cleveland, Ohio; [2]Urology, University Hospitals Case Medical Center, Cleveland, Ohio

Objectives: The impact of tobacco abuse on the surgical management of stress urinary incontinence (SUI) is unclear. While tobacco use has been associated with delayed healing, increased post-operative complications such as MI, VTE, and decreased quality of life after incontinence surgery, data from a small case control study suggest a possible protective effect against repeat surgery within 1 year of initial surgery. Our primary purpose was to examine the effect of tobacco use on known and unknown potential risk factors of repeat surgery for SUI in a large cohort of women.
Materials and Methods: Using de-identified clinical data from a large multi-institution electronic health records HIPPA-compliant data web application Explorys Inc, data from 32,750 patients aged ≥ 30 who underwent SUI surgery from 1999-2013 were reviewed. Patients were stratified into tobacco use and non-tobacco use groups. The primary outcome examined was need for repeat surgery within 1 year of initial procedure. Individual risk factors for SUI in each group including: diabetes mellitus (DM), pelvic organ prolapse, age, race, BMI, asthma,

and alcohol abuse were examined. Odds ratios and confidence intervals were calculated using standard statistical formulas. A chi-square test was run with a significance set at 0.05 to assess for differences between groups.

Results: Of 32,750 patients who underwent SUI surgery, 6880 patients (21%) demonstrated tobacco abuse while 28,750 (79%) did not. A total of 2900 patients underwent repeat surgery within 1 year; 850 (12.3%) in the tobacco group vs. 2050 (8%) in the non-tobacco group. There was a statistically significant increased risk of repeat surgery within 1 year, (OR, 1.64, $p < 0.001$) in the tobacco group. When comparing tobacco to non-tobacco patients, respectively, patients had a decreased risk for repeat surgery if they had concomitant DM neuropathy (OR, 1.66, $p = 0.03$) vs. (OR, 2.35, $p < 0.001$), cystocele (OR, 2.38, $p < 0.001$) vs. (OR, 3.41, $p < 0.001$), and hysterectomy (OR, 1.5, $p < 0.001$) vs. (OR, 1.91, $p < 0.001$). An increased risk of repeat surgery in the tobacco group was seen in patients with a concomitant history of asthma (OR, 2.49, $p < 0.001$) vs. (OR, 1.81, $p < 0.001$). In the tobacco group, alcohol abuse was associated with an increased risk of repeat surgery (OR, 2.00, $p < 0.001$), but no such relationship was noted in the non-tobacco use group, (OR, 1.29, $p = 0.54$). Advanced age and high BMI were not associated with a difference in risk of reccurent surgery in either group.

Conclusion: Our findings suggest that there is a complex relationship among risk factors for repeat surgery for SUI within 1 year of the initial surgery. While tobacco use appears to increase the risk of repeat surgery in patients with asthma and alcohol abuse, it appears to decrease the risk in patients with other comorbidities including cystocele and DM neuropathy. Consistent with previous small-scale studies, our findings suggest a possible protective effect of tobacco use on recurrent incontinence surgery risk among specific subgroups. Further exploration of these associations may help to improve our ability to counsel patients regarding tobacco use and surgical risk stratification.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

David Sheyn: Nothing to disclose
Aisha Taylor: Nothing to disclose
Rebecca James: Nothing to disclose
Sangeeta T. Mahajan: Nothing to disclose

NON-ORAL POSTER 50

Subcutaneous Venous Access Device Removal: A Cost Analysis

Woodard B, Burke J. Obstetrics and Gynecology, Memorial Health University Medical Center, Savannah, Georgia

Objectives: Most patients being treated for gynecologic malignancies have vascular access devices for chemotherapy administration. Once the prescribed treatment is completed and/or the patient has surpassed a certain time endpoint, the device is removed. However, the ideal setting (outpatient-clinic versus outpatient- operating room) for removal has not been shown. The current study performed a cost analysis of outpatient-clinic removal, with local anesthesia, versus outpatient-operating room removal, with various forms of sedation, while controlling for post-procedure complications.

Materials and Methods: All patients with vascular access devices removed by active physician members of Memorial University Medical Center, Savannah, Georgia, from January 1, 2010, to June 1, 2013, were identified. We matched the number of the solo practitioner's removal in the outpatient setting to one of the provider's in the other surgical setting in the hospital. Patient demographic information, including age, sex, race, BMI, comorbidities, type and stage of cancer, location of port removal, and complications were obtained. Charges from the outpatient and hospital settings were collected. Using statistical software SPSS (IBM Corp. Released 2012. IBM SPSS Statistics for Windows, version 21.0. Armonk, NY) descriptive statistics were used to examine the distributions of patient characteristics for both patient populations (outpatient clinic and outpatient hospital settings). Comparability of the two patient groups as well as any cost differences was examined using t-test. Statistical significance was assessed at the 0.05 level.

Results: Regardless of the setting for removal of the vascular access device, no differences in complications were seen when controlled for age, BMI, comorbid status, or cancer stage. However, removing the devices in the outpatient clinical setting was more cost effective than removing the devices in the operating room ($700 versus $1485-$3325, respectively).

Conclusion: This study is the first economic evaluation of venue for the removal of a vascular access device, showing that not only is the clinic-outpatient location safe, but performing these removals in this setting provides a significant cost savings over the outpatient-operating room location.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Brandon Woodard: Nothing to disclose
James Burke: Nothing to disclose

NON-ORAL POSTER 51

To Assess Clinical Response to a 4-Week Program of Pelvic Floor Rehabilitation using Pilates-Based Movements in Combination with Video-EMG Synchronization for Optimization of Each Patients Home Exercise Program

Crawford BS. Center for Pelvic Floor Medicine, Reno, Nevada

Objectives: To assess clinical response to a 4 week program of pelvic floor rehabilitation using the Pilates Method in combination with Video-EMG Synchronization for optimization of each patients home exercise program.

Materials and Methods: Retrospective chart review of patients with pelvic floor disorders including stress urinary incontinence, overactive bladder, and pelvic organ prolapse participating in pelvic floor rehabilitation through the Center for Pelvic Floor Medicine between 2012 and 2013. Patients completed pre and post-IIQ 7, and UDI-6 questioners. Each patient received the pilates DVD at least 1 week prior to the start of the program. Patients underwent an initial, seated, two channel, pelvic floor biofeedback session to determine their ability to perform a voluntary pelvic floor contraction. Subsequently, patients underwent baseline pelvic floor manometry using a vaginal balloon probe. Each subject then participated in a VESy session consisting of 4 channel wireless EMG (pelvic floor, gluteals, abdominals, lower extremity adductors) synchronized to video. Ten video-EMG clips were recorded (one for each of the 10 Pilates movements) and analyzed to determine the three movements that provided the greatest pelvic floor engagement and coordination. These three clips were made available to patients online and "reminder" emails were sent on days 1, 3, 5, 10, and 18. Patients followed up after 4 weeks for a final manometry and questioner assessment.

Results: Thirty-eight charts were selected for review. One hundred percent of patients completed the first three visits and 69% returned at the end of 4 weeks for a final assessment. Twenty-five patients completed pre and post-pelvic floor manometry. Eighteen patients completed pre and post-bladder symptom questionnaires (UDI-6). Twelve patients provided an estimate of global improvement in lower urinary tract function. The mean improvement in pelvic floor strength, as estimated using vaginal balloon manometry, was 33% (13.2-16.9 cm H2O, $p = 0.006$). The mean improvement in UDI-6 score was 33% (9.3-6.3, $p = 0.001$). Among patients with a score greater than 0 on pre UDI-6 ($n = 10$) the average improvement in overall bladder symptoms was 74% at the 4-week follow up visit.

Conclusion: Completion of the VESy/Pilates program of pelvic floor rehabilitation is associated with short-term improvement in pelvic floor strength and bladder symptoms.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Bruce S. Crawford: Insight Biodesign LLC, CEO, ownership interest

NON-ORAL POSTER 52

Sequential Compression Device Compliance in Post-Operative Obstetric and Gynecology Patients

Brady MA,[1] Carroll A,[1] Cheang KI,[2] Straight C,[1] Chelmow D.[1]
[1]Department of Obstetrics and Gynecology, Virginia Commonwealth University Health Sciences, Richmond, Virginia; [2]Department of Pharmacotherapy & Outcomes Science, Virginia Commonwealth University Health Sciences, Richmond, Virginia

Objectives: The purpose of our study was to assess the effects of patient and nursing education on sequential compression device (SCD) compliance in post-operative patients on obstetrics and gynecology services.

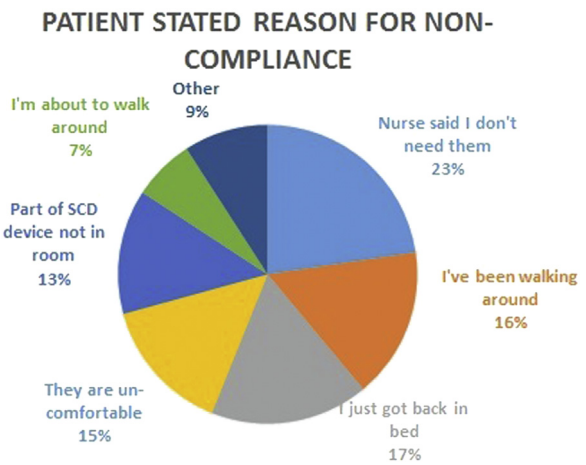
Materials and Methods: We performed a prospective observational study. The study population included all patients who underwent a cesarean delivery or benign gynecologic surgery and were prescribed to wear SCDs post-operatively. The 4-month study was divided into 1-month segments. The first month consisted of baseline observations of compliance. During the second month, ACOG patient pamphlets on DVT prevention were distributed and explained to each patient by an investigator. The third month's observations took place after nurses and nursing assistants individually viewed an educational PowerPoint presentation about thromboembolism and prevention methods. The final month included both interventions. Two investigators made twice daily patient observations. If SCDs were not being worn appropriately, the observer asked the patient for a reason and then offered to assist with proper application of the device. She was noted to be compliant if she was lying in bed with SCDs applied, tubing attached, and machine powered on, or, ambulating or sitting in a chair without SCDs.

Results: A total of 859 observations were recorded on 228 patients. Race, age, BMI, insurance type, and surgery type were not different among the 4 months. There was no difference in compliance among the months, with percent compliance found to be 60.87%, 54.12%, 55.96%, and 60.13% for each consecutive month (p = 0.4426). Combining all 4 months of data, non-compliance increased with each successive post-operative day (OR = 1.175 per day, 95% CI = 1.0655-1.2954). The effect of post-operative day on compliance was independent of interventions. After adjusting for the intervention months, post-operative day remained significantly associated with noncompliance (OR = 1.170, 95% CI = 1.062-1.289). Patients were also more likely to refuse reapplication of SCDs on each successive post-operative day with an odds ratio of refusal of 1.213 (95% CI = 1.0174-1.4459). The most common patient stated reason for non-compliance was "the nurse said I don't need them anymore" (22.6%). Overall, cesarean delivery was associated with the lowest rate of compliance when compared to gynecologic surgeries (36.2% vs. 45%, p = 0.0104).

Table
Compliance by Intervention Month

Month	Observations	Compliant
Baseline	230	60.87%
Patient Education	194	54.12%
Nursing Education	277	55.96%
Patient and Nursing Education	158	60.13%

p = 0.4426.



Conclusion: Compliance with post-operative use of SCDs is overall poor in our study and did not improve with our patient or nursing interventions. Providers should consider using alternate means of venous thromboembolism prevention, especially in high risk patients.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Megan A. Brady: Nothing to disclose
Ashley Carroll: Nothing to disclose
Kai I. Cheang: Nothing to disclose
Celeste Straight: Nothing to disclose
David Chelmow: Nothing to disclose

NON-ORAL POSTER 53

Trends in Urogynecologic Surgical Procedures before and after the 2011 FDA Public Health Notification about Transvaginal Mesh using the Prism Registry

LeBrun E E Weber,[1] Thomas SP,[1] Shuster J,[1] Bailey GJ,[3] Patterson D,[2] Flynn MK.[2] [1]OB/GYN, University of Florida, Gainesville, Florida; [2]Obstetrics & Gynecology, University of Massachusetts, Worcester, Massachusetts; [3]Women's Pelvic Health, Gainesville, Florida

Objectives: While transvaginal mesh complications have been the subject of many recent studies, little is known about surgical developments since the July 2011 FDA Public Health Notification (PHN). This study aims to describe the trends in surgical volume and case type in three urogynecology practices before and after the PHN, focusing on mesh implantation, revision, and excision.

Materials and Methods: This was an IRB-approved prospective study of all surgical cases performed at two academic urogynecology centers and a retrospective review from a private-practice surgeon from July 2010 to June 2013. The two academic centers prospectively entered patient demographics and surgical details for all surgical cases into the PRISM (Pelvic Reconstruction & Incontinence Surgery including Mesh) Registry. Due to changes in faculty at both academic centers from July to December 2010 resulting in low case volume, this time frame was not analyzed. The private practice surgical data was collected retrospectively and grouped by CPT billing codes. Since apical suspensions were routinely performed in almost all private reconstructive cases, this was used as a proxy for total case volume. Chi-square tests were performed to compare case counts before and after the FDA PHN, with additional analyses comparing the first and second years following the PHN.

Results: From the two academic centers, a total of 897 unique surgical cases were entered into PRISM during the study period. Independent hospital audit of surgical cases confirmed 100% case capture into PRISM. Pre-operative diagnoses included incontinence (n = 518), prolapse (n = 476), and mesh-related findings (n = 86), the last of which increased from 10 (5%) prior to the PHN to 76 (10.6%) after the PHN (p = 0.04). The percentage of patients who had already undergone a mesh excision prior to the index case increased from 0.56% to 6.56% over the study period (p = 0.003). From 2011-2013, there was no change in surgical approach, numbers of hysterectomy, sacral colpopexy, obliterative procedures, or

midurethral slings. There was also no change in the rate of implantation of vaginal mesh (total n = 15). The percentage of mesh excision/revision cases doubled (6% to 12%, p = 0.04) over the same time period. In the private practice setting, the total case volume (vaginal suspension as proxy) dropped in the first year following the PHN (177 to 137, p = 0.006)), and then remained constant in the second year (n = 125, p = 0.45). This pattern was seen across all pelvic floor case types including anterior/posterior repair, mesh implantation (total n = 730), and sling procedures. The number of mesh removal/revision cases increased four-fold in the first year after the PHN and then decreased by half the following year (25 to 99 to 45, both p = 0.0001), whether performed in the office or the OR.

Conclusion: This study observed an increase in mesh excision/revision in all three urogynecologic centers after the 2011 FDA PHN. While there are many potential factors influencing surgical trends in urogynecologic surgery, our findings may reflect differences in surgical practice and increased public awareness of mesh complications.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Emily E. Weber LeBrun: Nothing to disclose
Sarah P. Thomas: Nothing to disclose
Jonathan Shuster: Nothing to disclose
Gregory J. Bailey: AMS, Speaker, Proctor, stipend; Medtronic, Speaker, Proctor, stipend; Astellas, Speaker, stipend; Warner Chillcott, Speaker, stipend
Danielle Patterson: Nothing to disclose
Michael K. Flynn: Nothing to disclose

NON-ORAL POSTER 54

Caregiver Burden following Urogynecologic Surgery in Geriatric Patients: A Prospective Cohort

Oakley S,[1] Estanol MV,[2] Westermann L,[1] Ghodsi V,[3] Fellner A,[3] Crisp CC,[1] Kleeman SD,[1] Pauls RN.[1] [1]Female Pelvic Medicine and Reconstructive Surgery, Good Samaritan Hospital, Cincinnati, Ohio; [2]Division of Urogynecology, Beaumont Health System, Royal Oak, Michigan; [3]Hatton Institute for Research and Education, Good Samaritan Hospital, Cincinnati, Ohio

Objectives: Despite the growing volume of geriatric patients and their utilization of healthcare resources in the United States, little is known regarding level of burden on their caregivers in surgical subspecialties. Our aim was to characterize this burden following urogynecologic surgery.

Materials and Methods: This IRB-approved, prospective cohort study consented female patients aged 65 years or older, undergoing inpatient pelvic floor reconstruction, and their primary caregivers who anticipated providing 50% or more of their postoperative care. All participants answered questionnaires regarding demographics and expected responsibilities following surgery. Patients were administered the Short Form Health Survey-12 (SF-12) at baseline, and at 2 and 6 weeks postoperatively. Caregivers were administered the SF-12, Zarit Burden Inventory (ZBI), and Caregiver Burden Inventory (CBI) at the same intervals.

Results: Fifty patients and their caregivers have been enrolled in this study; preliminary data is available on 29 pairs. There was a significant difference in mean (SD) age, 73.9 (5.2) patient vs. 63.7 (12.2) caregiver (p = 0.001), and baseline SF-12 physical composite score (PCS), with caregivers reporting better overall health (p = 0.002). The majority of caregivers was white (96.6%), male (65.5%), non-smokers (51.7%), and reported an annual income over $33,500. Seventeen spouses (58.6%), 11 children (37.9%), and 1 parent (3.4%) reported being caregivers during the postoperative period. While 65.5% of caregivers lived with the patient before surgery, 41.4% of patients still considered their caregivers' schedule in timing their procedure. Regarding questionnaires, SF-12 PCS decreased in patients and their caregivers at 2 weeks following surgery (p < 0.001) with a return to baseline at 6 weeks (p = 0.001). Reflecting an inverse pattern, for caregivers median ZBI increased from 6 to 10 (p = 0.001) and CBI from 3 to 7 (p = 0.001) at 2 weeks following surgery, suggesting a greater burden on them at that time. Similarly, the patients reported sense of burden they imposed on their caregiver at 2 weeks correlated positively with the caregiver's perception of this (ZBI question 22; r = 0.53, p = 0.005). Greatest impact to caregiver was noted in questions assessing "less personal time" (p = 0.008), "co-dependency" (p = 0.017), and "emotional strain" (p = 0.025). Nevertheless, caregivers described feeling they "could be doing more" for the patient at 2 weeks (p = 0.049). Notwithstanding, improvements were noted by 6 weeks in median ZBI (6; p = 0.047) and CBI scores (4; p = 0.002) indicating resolution of these constraints. Among caregivers, there were no associations noted between total ZBI or CBI and demographics such as gender, income, or relationship to patient.

Conclusion: Caregivers for geriatric urogynecologic surgery patients report diminished physical health and increased burden at 2 weeks postoperatively, with a return to baseline by 6 weeks. Caregivers should be counseled about the anticipated burdens they may experience in the short term and be assured that these are likely to resolve during the postoperative period.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Susan Oakley: Nothing to disclose
Maria V. Estanol: Nothing to disclose
Lauren Westermann: Nothing to disclose
Vivan Ghodsi: Nothing to disclose
Angela Fellner: Nothing to disclose
Catrina C. Crisp: Nothing to disclose
Steven D. Kleeman: Nothing to disclose
Rachel N. Pauls: Nothing to disclose

NON-ORAL POSTER 55

The Feasibility of Clean Intermittent Self-Catheterization Teaching in an Outpatient Setting

Bickhaus JA, Drobnis EZ, Critchlow WA, Occhino JA, Foster RT. Obstetrics, Gynecology, and Women's Health, University of Missouri School of Medicine, Columbia, Missouri

Objectives: The purpose of this study is to evaluate the feasibility of teaching clean intermittent self-catheterization (CISC) in an outpatient setting to women planning surgery for pelvic organ prolapse (POP) and/or urinary incontinence (UI).

Materials and Methods: This was a prospective, observational, IRB approved study of 55 women who planned surgical correction of POP and/or UI. All women were taught CISC as part of their preoperative education. The ability to learn CISC and the amount of time needed to teach CISC to proficiency was recorded. As part of the postoperative voiding trial, patients were asked to perform CISC to obtain the postvoid residual volume. The patient's ability to successfully perform CISC after surgery and the amount of time that elapsed between the initial CISC training and the postoperative voiding trial were recorded. Medians were used instead of means when data was not normally distributed. Multivariate modeling evaluated the following potential confounders: patient age, BMI, arthritis diagnosis, depression diagnosis, postoperative day of voiding trial, having private insurance, CISC teaching time, and driving time to clinic. Chi-square, Fisher's exact test, and Kruskal-Wallis ANOVA were used as appropriate to detect the influence of each variable on teaching time and ability to perform voiding trial.

Results: Of the 55 subjects consecutively enrolled in the study, 51 subjects (93%) were able to learn CISC and demonstrate competency (p < 0.00001). Four subjects (7%) were unable to learn self-catheterization; 2 due to obesity, 1 due to obesity and spinal stenosis, and 1 for which no reason was noted. BMI values for these 4 subjects were 37, 39, 41, and 44 kg/m^2, respectively; interestingly, 10 subjects with BMI of 37 kg/m^2 or greater (range, 37-62) were able to learn CISC. The median teaching time to teach CISC and have the subject demonstrate proficiency was 3.7 minutes (range, 1.8-7.4 minutes). Only BMI was positively correlated with teaching time (p = 0.011) in a multiple regression model, indicating that subjects with higher BMI required a longer time to teach CISC.

Fifty-two subjects underwent surgery, 3 subjects cancelled surgery. Of the subjects who learned CISC and had surgery, the average time in days from preoperative teaching to the postoperative voiding trial was 16 days (± SD 11 days; range, 2-39 days). Forty-one subjects completed the postoperative voiding trial and had data recorded. Of these, 33 (80%) were able to self-catheterize without nurse assistance or with minimal verbal coaching during the voiding trial, while 8 (20%) subjects required hands-on nursing assistance or were unable to perform CISC ($p < 0.001$). Results were unavailable for 11 voiding trials: 4 subjects were unable to learn CISC preoperatively, 4 were not completed, 2 were completed but information not recorded, and 1 subject refused (see Figure).

Conclusion: CISC can be taught to the majority of patients undergoing POP/UI surgery in a short time (median, 3.7 minutes). The overwhelming majority of patients are able to retain the CISC skill weeks after being taught CISC in the clinic.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Jennifer A. Bickhaus: Nothing to disclose
Erma Z. Drobnis: Nothing to disclose
William A. Critchlow: Nothing to disclose
John A. Occhino: Nothing to disclose
Raymond T. Foster: Nothing to disclose

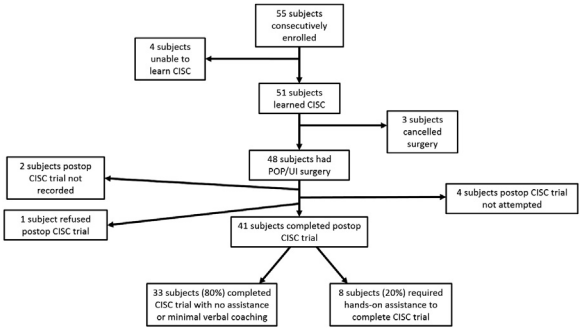


Figure. Subject flow.

NON-ORAL POSTER 56

Predictors of Successful Urethrolysis in Women with Obstructive Voiding after Sling Surgery: Follow-Up Mailed Survey Study

Kim-Fine S,[1] El-Nashar SA,[2] Casiano E,[3] Woelk JL,[4] Gebhart J,[2] Klingele C,[2] Trabuco E.[2] [1]Obstetrics and Gynecology, University of Calgary, Calgary, Alberta, Canada; [2]Female Pelvic Medicine and Reconstructive Surgery, Mayo Clinic, Rochester, Rochester, Minnesota; [3]Obstetrics and Gynecology, University of Texas Health Sciences Center, San Antonio, Texas; [4]Urogynecology and Continence Center, Methodist Physicians Clinic, Omaha, Nebraska

Objectives: To describe patient reported outcomes of after urethrolysis performed for obstructive voiding after stress-incontinence sling surgery.

Materials and Methods: This is a cohort study using the Mayo Clinic surgical index and followed by a mailed survey. The main outcomes of interest were patient-reported global improvement and satisfaction. Logistic regression models were used to identify predictors for the primary outcome and to adjust for confounders.

Results: During the study duration, 101 patients presented with complaints of obstructed voiding after prior sling surgery and underwent urethrolysis for this indication (62 synthetic and 39 biologic slings). Median time since surgery at the time of survey was 38.8 months (7.9-106.4). Of 98 women who received the survey, 55 responded (56.1%). Both responders and non-responders were comparable in their clinical characteristics. Twenty-three patients (42.6%) reported both improvement and satisfaction and were considered to have met our definition of success after surgery and were included in the analysis for predictors. Multivariate analysis identified the following as independent predictors of patient-reported satisfaction and improvement: age ≤60 years with an adjusted odds ratio (aOR) of 4.22 (2.00-16.97), absence of OAB symptoms prior to urethrolysis with aOR of 3.99 (1.10-16.57), and surgical procedure including sling cut or loosening versus partial or complete excision with aOR of 3.78 (1.00-17.03).

Table
Clinical characteristics and patient reported outcomes in women who reported both satisfaction and improvement after urethrolysis

	Reported both improvement and satisfaction (N = 23)	Did not report either improvement or satisfaction (N = 32)	p value
Age ≤60	16	13	0.042
White	22	24	0.047
BMI ≥30 kg/m^2	12	20	0.292
Pre-menopausal	12	11	0.220
Smoker (ever or current)	11	11	0.362
History of pelvic surgery prior to index sling surgery	10	13	0.679
No OAB symptoms	12	8	0.047
Synthetic sling	13	22	0.273
Time since index sling surgery ≥12 months	5	9	0.543
Catheterized postvoid residual ≥150 mL	8	7	0.339

Conclusion: Urethrolysis performed for the indication of obstructed voiding after stress-incontinence sling surgery is associated with patient reported satisfaction and improvement in only half. However, predictors of success are younger age, lack of OAB symptoms, and performing urethrolysis by sling lysis or cut rather than partial or complete excision.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Shunaha Kim-Fine: Nothing to disclose
Sherif A. El-Nashar: Nothing to disclose
Elizabeth Casiano: Nothing to disclose

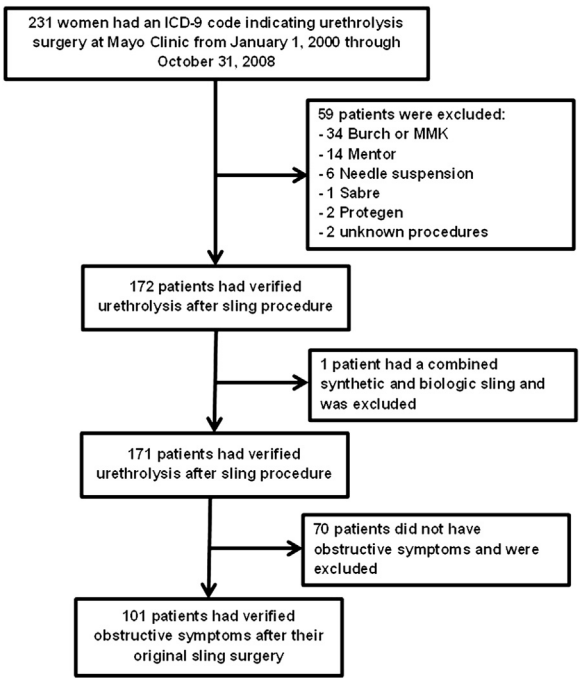


Figure. Study flow chart.

Joshua L. Woelk: Nothing to disclose
John Gebhart: Nothing to disclose
Christopher Klingele: Nothing to disclose
Emanuel Trabuco: Nothing to disclose

NON-ORAL POSTER 57

Laparoscopic-Assisted Vaginal Hysterectomy (LAVH) Re-Defined: Impact on Resident Surgical Case Log Reporting

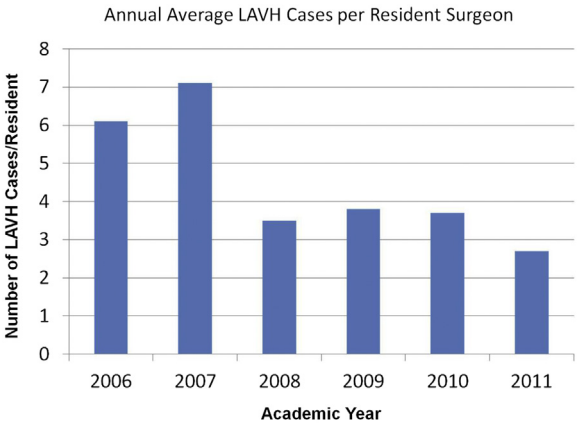
Chin K, Ripp ZT, Hamid CA, Balgobin S. Obstetrics & Gynecology, University of Texas Southwestern Medical Center, Dallas, Texas

Objectives: In 2012, the Accreditation Council for Graduate Medical Education (ACGME) established minimum surgical procedure thresholds for Obstetrics and Gynecology residency training programs. For surgical case reporting, LAVH was classified in the laparoscopic hysterectomy (LH) category. Recently, however, the ACGME re-defined LAVH as a vaginal hysterectomy (VH) and operative laparoscopy (OL). The purpose of this study was to examine institutional trends in LAVH procedures, and predict expected changes in resident surgical case numbers.
Materials and Methods: A retrospective chart review was performed from 2006-2012 examining all cases of LAVH by both general and subspecialty gynecology services at the three main teaching hospitals of the primary academic institution. The primary outcomes were the annual number of cases performed, and faculty distribution, and the secondary outcome was annual net expected change in operative log cases per resident.
Results: A total of 535 cases were included from six academic years from July 1, 2006, to June 30, 2012. Over this time period, cases were distributed among a total of 43 faculty surgeons, consisting of 34 general gynecologists (13 academic and 21 private), 4 female pelvic medicine and reconstructive surgeons (FPMRS), and 5 gynecologic oncologists (GYN ONC). After an initial rise, the total number of LAVH procedures has declined, with approximately one-half the number of cases performed in 2011 compared to 2006 (Table). The majority of cases (88.4%) were performed by general gynecologists. When stratified by surgeon, the 10 highest volume surgeons (8 General GYN, 2 GYN ONC) accounted for 383 (71.6%) of the total number of cases, with a single private generalist alone accounting for 112 (20.9%). Based on a third-year resident surgeon in a class of 20 residents, the estimated number of LAVH cases per resident each year declined from an average of 6.1 in 2006 to 2.7 in 2011 (Figure).
Conclusion: In our large academic institution, there is a decrease in the total number of LAVH procedures from 2006-2011. Although cases are distributed among a large number of faculty, the majority are performed by a few high volume surgeons. Currently, third year resident surgeons each record approximately three LAVH procedures, and can expect a net increase of three VH and three OL, at the expense of three LH. ACGME re-classification of LAVH may be beneficial to programs deficient in VH or OL, but detrimental to those struggling to meet minimal LH thresholds. Institutional surgical case analysis can guide programs in allocation of residents to rotations or faculty that can maximize surgical experience and volume.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Table
Number (%) of LAVH Cases for Academic Years 2006-2012

Academic year	General GYN (Academic)	General GYN (Private)	GYN ONC	FPMRS	TOTAL
2006-2007	41 (33.6)	63 (51.6)	14 (11.5)	4 (3.3)	122
2007-2008	59 (41.8)	56 (39.7)	25 (17.7)	1 (0.7)	141
2008-2009	20 (29.0)	41 (59.4)	6 (8.7)	2 (2.9)	69
2009-2010	28 (36.8)	45 (59.2)	1 (1.3)	2 (2.6)	76
2010-2011	25 (34.2)	45 (61.6)	1 (1.4)	2 (2.7)	73
2011-2012	26 (48.1)	24 (44.4)	3 (5.6)	1 (1.9)	54
TOTAL 2006-2012	199 (37.2)	274 (51.2)	50 (9.3)	12 (2.2)	535

Kathleen Chin: Nothing to disclose
Zachary T. Ripp: Nothing to disclose
Cherine A. Hamid: Nothing to disclose
Sunil Balgobin: Nothing to disclose



NON-ORAL POSTER 58

A Survey of Obstetrics and Gynecology Residents Assessing Perception of Training and Knowledge Regarding Pessaries

Kassis N, Hale DS, Heit M. Indiana University, Indianapolis, Indiana

Objectives: Pelvic Organ Prolapse (POP) is a common condition whose prevalence is expected to increase as the population ages. Many patients with POP can be managed successfully with pessaries as an alternative to minimally invasive surgery. Successful pessary care requires training and confidence by practitioners interested in providing this nonsurgical option. We sought to describe how Obstetrics and Gynecology residents perceive the training they receive for providing pessary care and to assess basic knowledge held by residents about pessaries.
Materials and Methods: We conducted an anonymous, electronic survey of current Obstetrics and Gynecology residents. It included 6 items assessing experience with pessary education and 11 items assessing basic pessary knowledge. From these two domains we calculated an experience score (0-3) and a knowledge score (0-11), with higher scores indicating more experience and greater knowledge. The survey also included 4 items assessing perception of training and comfort for providing pessary care. Outcomes were compared between lower level (years 1-2) and upper level (years 3-4) residents as well as by individual year. Kruskal's Gamma was used to compare experience scores by dichotomized training level. ANOVA and separate variance t-test were used to compare knowledge scores by yearly and dichotomized training level, respectively. Any $p < 0.05$ was considered significant.
Results: Two hundred twenty-two of 481 residents who received the survey completed it, the response rate was 46%. Respondents were equally distributed among the 4 years (year 1 = 25%, year 2 = 22%, year 3 = 26%, and year 4 = 27%). Overall, the mean experience score was 1.3 $\pm$ 1.0, mode of 1. 57% of respondents indicated they had never received formal didactic instruction regarding pessary care. Fifty-nine percent had observed a supervising practitioner providing pessary care and 33% reported having been a primary provider of pessary care, despite lack of formal didactic instruction. Overall, the mean knowledge score was 8.0 $\pm$ 1.8, mode of 8. Eighty-two percent and 77% of respondents were able to correctly identify indications and contraindications for pessary use, respectively. Seventy-four percent of respondents were able to recognize a ring pessary and 86% were able to recognize a Gellhorn pessary. Eighty percent reported their

perception of training for performing a fitting as "no training" or "minimal training." Forty-nine percent reported their anticipated comfort for performing a fitting after graduation as "not at all comfortable" or "not very comfortable." Experience scores were higher for upper level residents vs. lower level residents ($p < 0.001$). Knowledge scores were linearly greater with advancing year of training (year 1 = 7.0 ± 1.9, year 2 = 7.7 ± 1.6, year 3 = 8.7 ± 1.3, and year 4 = 8.5 ± 1.8, $p < 0.001$) and significantly higher for upper level vs. lower level residents when training was dichotomized (8.6 ± 1.5 vs. 7.4 ± 1.8, $p < 0.001$).

Conclusion: Development of a formal pessary curriculum for Obstetrics and Gynecology training is vital to improve experience with pessary care despite a high knowledge of this nonsurgical option. It is unacceptable for any graduate to feel uncomfortable with performing a pessary fitting as a result of perceived lack of training in providing this nonsurgical option.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Nadine Kassis: Nothing to disclose
Douglass S. Hale: Allergan, Contracted researcher, Salary
Michael Heit: Nothing to disclose

NON-ORAL POSTER 59

Colpocleisis for Pelvic Organ Prolapse: A Patient Survey on Reasons for Surgery Selection and Post-Operative Regret and Satisfaction

Takase-Sanchez MM, Hale DS, Heit M, Woodman P, Brooks HM. Urogynecology, Indiana University Health/Methodist Hospital, Indianapolis, Indiana

Objectives: To estimate the prevalence of common patient reported reasons for selecting colpocleisis and determine which one, if any, are significant predictors of procedure satisfaction or regret.

Materials and Methods: Retrospective analysis on a post-operative surgical cohort was performed with Indiana University IRB approval. A surgical database was created using CPT codes identifying LeFort and colpectomy procedures from 2006 to 2013 for pelvic organ prolapse. Women were excluded if they declined, were deceased, or had dementia that prevented survey completion. Participants were asked to complete a surgical decision-making survey and validated questionnaires on regret (DRS-PFD) and satisfaction (SDS-PFD). Demographic, clinical and quality of life (PFDI-20/PFIQ-7) data were collected. Parsimonious multivariate linear regression models were constructed to determine independent predictors of regret and satisfaction ($p < 0.05$) after controlling for confounders ($p < 0.1$) identified by univariate analyses.

Results: Seventy-seven of 107 contacted women completed the surveys. Doctors' recommendation and lack of sexual activity were among the top two prevalent reasons for selecting colpocleisis; however, these reasons were not identified to be significant independent predictors of regret or satisfaction. The univariate analyses revealed change in impact of incontinence on activities of daily living, duration from surgery, preoperative sexual activity, re-operation, and reasons for surgery selection including not sexually active and declined pessary were all significantly associated with regret while age, duration from surgery, reoperation, and the reasons for surgery selection including not sexually active, to avoid mesh, and declined pessary were significantly associated with satisfaction (all $p < 0.05$). The multivariate linear regression models for regret identified preoperative sexual activity status as the only significant independent predictor of more regret. Women who reported being sexually active prior to surgical choice are predicted to score their regret 1.6 points higher compared to women who were not sexually active on a 6-point Likert scale ($p < 0.001$). The satisfaction regression models identified re-operation as a significant independent predictor of lower satisfaction ($p < 0.04$) and declined pessary reason for surgery selection as a significant independent predictor of higher satisfaction ($p = 0.011$).

Conclusion: Most women reported doctors' recommendations and lack of sexual activity as making the most difference in their decision-making process; however, these reasons did not significantly impact overall procedure satisfaction or regret. Not surprisingly, women who are sexually active preoperatively demonstrated more regret, highlighting the importance of individualizing preoperative surgical counseling to patient-oriented goals beyond clinical anatomical success. Additionally, women who choose to decline pessary trial should be reassured that their choice to proceed with surgery is not only supported by proven high satisfaction and clinical success, but also that they will not likely regret declining the non-surgical alternative.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Michelle M. Takase-Sanchez: Pelvalon, Co-Investigator, Honorarium
Douglass S. Hale: Allergan, Principal investigator, Honorarium; Pelvalon, Principal investigator, Honorarium
Michael Heit: Nothing to disclose
Patrick Woodman: Nothing to disclose
Hannah M. Brooks: Nothing to disclose

NON-ORAL POSTER 60

Novel Neourethra Construction in Female Epispadias Complex without Bladder Extrophy

Mama ST,[1] McDermott D.[2] [1]Pediatric Gynecology, Cooper Medical School of Rowan University, Cooper University Hospital, Camden, New Jersey; [2]Pediatric Urology, Ann Arundel Medical center., Annapolis, Maryland

Objective: To describe a novel approach to neourethra construction in female epispadias complex without bladder extrophy.

Description: Isolated female epispadias without bladder extrophy is an extremely rare anomaly occurring in 1 in half a million females. The patients present with urinary incontinence and congenital abnormal features. In female patients with epispadias, multiple approaches have been utilized for urethral construction including an anterior bladder tube, pedicled labial urethroplasty and urethrocervicoplasty with vulvoplasty. We present a 15 year old with continuous urinary incontinence since birth, bifid clitoris with a 2 cm separation at the symphysis, and a patulous 1 cm urethra located inferior to the symphysis who had interclitoral tubularization with reapproximation of the two hemi-clitoris creating a urethra with sufficient length and resistance with successful resolution of urinary incontinence in a single stage operation.

Conclusion: Female patients with symptomatic epispadias complex without bladder extrophy with urinary incontinence can successfully undergo functional single stage successful neourethra construction.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Saifuddin T. Mama: Nothing to disclose
David McDermott: Nothing to disclose

NON-ORAL POSTER 61

Calcium Hydroxylapatite Urethral Injection: Multi-Year Single Center Experience

Melero G Heredia, Genadry R, Bradley C. University of Iowa Hospitals & Clinics, Iowa City, Iowa

Objectives: Several "permanent" implants are available for transurethral injection treatment of intrinsic sphincter deficiency (ISD), and typically 1-2 injections are recommended per patient. However, long-term outcome data are sparse, making treatment decisions challenging for patients with recurrent symptoms. Calcium hydroxylapatite (CaHA) is a permanent implant used in our center since 2006. To plan a prospective, long-term study of CaHA outcomes, we reviewed our 7-year experience in CaHA transurethral injections. The objectives were to (1) describe patients who

underwent CaHA injections, procedure details and outcomes and (2) compare patient characteristics and outcomes by numbers of injections performed.

Materials and Methods: A retrospective cohort study was performed, including all patients who had CaHA injections for ISD at an academic specialty clinic from 2006-2012. Procedures were performed by 2 fellowship-trained specialists using standardized technique in an office setting under local anesthesia. Clinical data were collected from the medical record. Urinary incontinence (UI) outcomes were reported as resolved, improved, unchanged or worsened. Patient characteristics and outcomes were compared by numbers of injections performed.

Results: Fifty-five patients had a total of 93 CaHA injections: 26 (47%) had 1 injection, 21 (38%) had 2, 6 (11%) had 3, and 2 (4%) had 4 injections. The mean (SD) age was 69.6 (10.1) years, parity 3.3 (2.3), and BMI was 28.6 (5.2) kg/m2. Medical and urological comorbidities included: diabetes 6 (11%), Parkinson's 1 (2%), stroke 2 (4%), spinal stenosis 3 (5%), back surgery 5 (9%), cognitive disorder 1, s/p radiation therapy 1, interstitial cystitis 1, and prior bladder rupture 1. Prior hysterectomy, prolapse and incontinence surgery occurred in 38 (69%), 33 (60%) and 38 (69%), respectively, and 18 (33%) had prior transurethral collagen injection. Fifteen patients (27%) had urethral hypermobility and 15 (27%) prolapse $\geq$ stage 2. Mean (SD) leak point pressure was 68.6 (34.0) cm H2O. A total of 0.5 to 2 cc (mean 1.3 cc) were injected per procedure. No procedure complications occurred. Median follow-up was 11 months (range, 0-67 months) after the first injection. UI was resolved, improved, unchanged, and worsened after the final injection in 6 (11%), 17 (31%), 14 (26%), and 1 patient (2%). Seventeen patients (31%) had no follow-up. Persistent UI symptoms included stress (12), urge (6) , and mixed (14) UI. Post-procedure complications included UTI (5) and urinary retention requiring intermittent catheterization (7) for median 5 days (range, 1-36 days). Other complications included urethral discomfort (1), asymptomatic distal urethral polyp (1), and asymptomatic urethral CaHA exposure (1); none required intervention. Fewer patients undergoing 1 vs. $\geq$2 injections had prior hysterectomy (54% vs. 83%, p = 0.02) or $\geq$ stage 2 prolapse (15% vs. 38%, p = 0.06). Patients undergoing 3-4 vs. 1-2 injections were older (p = 0.02). UI outcomes did not differ by number of injections.

Conclusion: CaHA injections for ISD were performed in a complex, diverse patient population. More than half of patients underwent >1 injection, and 15% underwent 3 to 4 injections. Complications were rare. Prospective, long-term outcome data is urgently needed to help guide treatment decision-making.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Gerardo Heredia Melero: Nothing to disclose
Rene Genadry: Nothing to disclose
Catherine Bradley: Nothing to disclose

NON-ORAL POSTER 62

Demographic Characteristics and Geographic Distribution of the Practicing Members from the Society of Gynecologic Surgeons

Bastow B, Davis K, Connell K, Muffly T. Female Pelvic Medicine and Reconstructive Surgery, University of Colorado Anschutz Medical Campus, Englewood, Colorado

Objectives: To identify the current supply and locations of expert vaginal surgeons in active practice in the United States as represented by Society of Gynecologic Surgeon members.

Materials and Methods: The Society of Gynecologic Surgeon membership website roster from 2013 was directly compared to a database created from a national directory of practicing obstetrician and gynecologists. Demographic information relating to the physician was collected to localize expert vaginal surgeons throughout the United States and determine trends. All active obstetrician-gynecologists younger than 80 years were included. Most surgeons begin to reduce their operative workload at 60 years of age, therefore, we chose to use a higher retirement age of 80 years to capture OB-GYNs who are active in the workforce in a teaching or administrative role because they have an important role in the education of future obstetrician-gynecologists.

Results: The Society of Gynecologic Surgeons membership roster revealed 279 members in total, including 230 active members. This represents approximately 0.45% of all obstetrician-gynecologists practicing in the United States. The states with the highest number of members were Texas (n = 20), Ohio (n = 13), and North Carolina (n = 12). Ten states had no active members in SGS: Alaska, Arkansas, Delaware, Idaho, Maine, North Dakota, South Dakota, Vermont, West Virginia, and Wyoming. The ACOG district with the most active members (n = 42) was District IV. The ACOG district with the least members was District XII with seven members.

Compared to the general obstetrics and gynecology population, SGS members are older (mean age, 55.2 years vs. 53.6 years, $p < 0.04$), a larger proportion of men are SGS members compared to non-members (72.6% vs. 49.7%, $p < 0.0001$), and SGS is comprised of a higher number of medical doctors compared to osteopathic physicians ($p < 0.02$).

Conclusion: In the setting of an aging patient population and dwindling opportunities to train in vaginal surgery, the importance of expert vaginal surgeons becomes even clearer. The uneven distribution of vaginal surgeons throughout the United States is likely to worsen as SGS members continue to cluster in urban areas. These findings have implications for training, recruiting, and retaining vaginal surgeons.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Brittney Bastow: Nothing to disclose
Karlotta Davis: Nothing to disclose
Kathleen Connell: Nothing to disclose
Tyler Muffly: Nothing to disclose

Figure. Distribution of active Society of Gynecologic Surgery members in the United States.

VIDEO PRESENTATION 01

Laparoscopic Supracervical Hysterectomy with Transcervical Morcellation and Sacrocervicopexy for the Treatment of Uterine Prolapse

Rosenblatt PL,[1] Dessie S,[1] Park M.[2] [1]OB/GYN, Mount Auburn Hospital, Cambridge, Massachusetts; [2]OB/GYN, Newton-Wellesley Hospital, Newton, Massachusetts

Objective: To describe our surgical approach for management of uterine prolapse.

Description: This video presents our surgical technique for the treatment of advanced uterine prolapse. The patient is a 59 year old woman with symptomatic stage III prolapse. We begin by performing a laparoscopic supracervical hysterectomy. We use the CISH instrument, which consists of a 15 mm serrated hollow outer cylinder with a central rod in a solid cylinder that fits within, to core the endocervical canal. Once the coring is completed, a disposable morcellator is placed through the cervical defect and used to morcellate the uterus. The handle then is removed from the morcellator, and it acts as an access cannula for the sacrocervicopexy. A 0-Vicryl purse-string suture is placed vaginally, but is not tied down until

the end of the case. We dissect the peritoneum over the sacral promontory to expose the anterior longitudinal ligament. The rectovaginal space is developed and the bladder is dissected off the vagina. The Y-shaped polypropylene mesh is prepared by rolling and suturing the sacral extension to keep it out of the way during vaginal suturing and placing a hole in the posterior arm of the mesh to fit over the transcervical cannula. It is inserted through the transcervical cannula and secured to the anterior and posterior vaginal wall with permanent sutures, using extracorporeal knot tying. Needles are introduced and removed through the transcervical cannula. We then suture the sacral extension to the anterior longitudinal ligament. A barbed delayed absorbable suture is then used to close the peritoneum, and the 0-Vicryl suture that was placed transvaginally as a cerclage is tied down when the transcervical cannula is removed.

Conclusion: We describe our streamlined laparoscopic approach using 5 mm skin incisions and transcervical morcellation for advanced uterine prolapse.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Peter L. Rosenblatt: Coloplast, Consultant, Honorarium; Gynecare, Consultant, Honorarium; VecTec, Speaker, Honorarium
Sybil Dessie: Nothing to disclose
Michelle Park: Nothing to disclose

VIDEO PRESENTATION 02

A Simple Teaching Model for Laparoscopic Myomectomy

Garbe G, Jacobs K, Yang L. Loyola University Medical Center, Chicago, Illinois

Objective: Performing a laparoscopic myomectomy requires mastery of advanced laparoscopic skills. It can be a difficult technique to learn, and inanimate teaching models are a critical component of resident surgical skills education. We sought to develop a simple, inexpensive chicken thigh model for teaching the steps and techniques necessary to perform a laparoscopic myomectomy.

Description: This model teaches vasopressin infiltration, hysterotomy, enucleation, myometrial and serosal closure, and placement of an adhesion barrier. The resident also learns laparoscopic skills including application of energy, suturing, and tissue dissection. We present the steps and materials required to construct the chicken thigh model as well as demonstrate the steps to performing a laparoscopic myomectomy. We compare and contrast these exercises to live surgical scenarios.

Conclusion: This is a feasible, inexpensive, and easy to make model that can be utilized for surgical skills education in obstetrics and gynecology residency training programs.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Gretchen Garbe: Nothing to disclose
Kristin Jacobs: Nothing to disclose
Linda Yang: Nothing to disclose

VIDEO PRESENTATION 03

Small Bowel Surgery for the Benign Gynecologist

Muffly T,[1] Strong S,[3] Walters MD.[2] [1]Female Pelvic Medicine and Reconstructive Surgery, University of Colorado Anschutz Medical Campus, Englewood, Colorado; [2]Obstetrics, Gynecology, & Women's Health Institute, Cleveland Clinic, Cleveland, Ohio; [3]Digestive Diseases Institute, Cleveland Clinic, Cleveland, Ohio

Objectives: The purpose of this video presentation is:

1) To teach techniques for enterolysis in benign gynecology cases;
2) To avoid bowel injury; recognize it when injury occurs; and manage these complications (as part of a multi-disciplinary approach) accordingly.

Materials and Methods: In order to illustrate bowel injury we report on a patient who underwent bowel laceration on initial entry to the peritoneal cavity. We present a 66-year-old P0 complaining of bulge symptoms for the last 10 years with known congenital bladder exstrophy. At the initial laparotomy incision, a 2-3 centimeter long small bowel enterotomy was inadvertently made when incising the rectus abdominus fascia. The small bowel was densely adherent to the length of the fascia.

Results: Enterolyisis is performed as an initial step in performing any intra-abdominal surgery where previous adhesions preclude adequate visualization. Each procedure is different but the techniques of enterolysis can be done sharply, bluntly, and using electrosurgery to enter the proper plane. We discuss techniques to avoid bowel injury and the six steps of enterotomy repair. After the offending bowel injury has been corrected, a thorough exploration of all four quadrants should be undertaken.

Conclusion: We emphasize the need for seeking expert assistance in the presence of dense adhesions or inadvertent bowel injury. A strong working partnership between colon and rectal surgeons and gynecologists can significantly increase patient safety.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Tyler Muffly: Nothing to disclose
Scott Strong: Nothing to disclose
Mark D. Walters: Nothing to disclose

VIDEO PRESENTATION 04

Iatrogenic Bladder Injury during Dilation and Curettage: Mechanism of Injury and Laparoscopic Repair

Louie M, King CR, Lum D, Mansuria S. OB/GYN, Magee-Women's Hospital, Pittsburgh, Pennsylvania

Objective: The purpose of this video presentation is to illustrate the mechanism of iatrogenic bladder injury during dilation and curettage and to demonstrate a laparoscopic approach to successful repair.

Description: We present the case of a 67-year-old nulliparous woman who suffered concurrent uterine and bladder perforation during hysteroscopy, dilation and curettage, and polypectomy by her primary Gynecologist. The Minimally Invasive Gynecology team was subsequently consulted for laparoscopic management. Cystoscopy revealed a 6 cm defect in the dome of the bladder and laparoscopy showed a 4 cm defect in the uterine fundus. Primary repair of the cystotomy with a two-layer closure was performed and water-tight coaptation was achieved. In addition, a hysterectomy was indicated for continued active bleeding from the large hysterotomy site. A supracervical hysterectomy was completed in order to reduce the risk of vesicovaginal fistula formation. In addition, the retropubic space of Retzius was developed to mobilize the bladder from the anterior abdominal wall in order to achieve an optimal tension-free bladder repair. Post-operative cystourethrogram demonstrated no extravasation, reflux, leak, or fistula. Follow-up 1 month after surgery confirmed that the patient was well with no residual issues.

Conclusion: In conclusion, the mechanism of injury to the dome of the bladder after perforation through the uterine fundus involves the dynamic changes that occur with downward traction on a cervical tenaculum. This case demonstrates that during procedures like dilation and curettage, bladder injury can occur in conjunction with uterine perforation and is a rare complication that is amenable to laparoscopic management.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Michelle Louie: Nothing to disclose
Cara R. King: Nothing to disclose
Deirdre Lum: Nothing to disclose
Suketu Mansuria: Nothing to disclose

VIDEO PRESENTATION 05

Teaching Vaginal Hysterectomy through Simulation Abstract for Video Presentation

Miyazaki D. OB/GYN, Wake Forest University, Winston Salem, North Carolina

Objective: Using simulation to teach vaginal hysterectomy consistent with ACGME and AGOG Guidelines for Residency Competency.

Description: The design of this study was the Miya Model Vaginal Surgical Training Model. The disclosures were President of Miyazaki enterprises, Independent Contract Instructor, and Speaker for American Medical Systems. Dramatic declines in surgical cases is causing problems with objective verification of minimal competency levels as residents graduate from one level to the next. This prompted the Accreditation Council for Graduate Medical Education (ACGME) and American Congress of Obstetricians and Gynecologists (ACOG) to develop and implement the Milestone Project. Douglas Miyazaki, MD, has developed the Miya Model (Miyazaki Vaginal Surgery Training Model) to train surgeons in the art of vaginal surgery. It is ideal for teaching vaginal hysterectomy. It is valuable for demonstrating competency through performance as established by ACOG. Because the Miya Model is reproducible and its variables constant, it can be used for objective assessment of skills and technique which is consistent with the Milestone Project. The Miya Model provides a realistic experience enabling the surgeon to clamp, cut, and suture and tie pedicles. Building skill through repetition on constant, accurate anatomy is the goal of surgical training. The open top design allows for exceptional visualization of procedures by instructors. The limit of resident teaching hours creates a greater need for time-efficient instruction. Instructors can teach and monitor multiple student physicians simultaneously.

Conclusion: The Miya Model is an effective, realistic, simulator to teach vaginal hysterectomy. It can be used to teach all key steps as established by ACOG.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Douglas Miyazaki: Miyazaki Enterprises, President, ownership; American Medical Systems, speaker, honoraria

VIDEO PRESENTATION 06

Laparoscopic Excision of a Deep Rectovaginal Endometriosis Nodule

Chamsy D, Lee T. Obstetrics, Gynecology, and Reproductive Sciences, University of Pittsburgh, Medical Center, Pittsburgh, Pennsylvania

Objective: The purpose of this video presentation is to illustrate a surgical technique to excise a deep rectovaginal endometriosis nodule en block to guarantee complete removal of the disease without having to dissect an obliterated rectovaginal space.

Description: The laparoscopic excision of a deep rectovaginal endometriosis nodule, involving both the vaginal and rectal walls, is a challenging procedure even in the hands of experienced laparoscopists. The location of the nodule deep in the pelvis limits exposure and access. The concomitant obliteration of the rectovaginal space makes the dissection tedious as surgical planes are distorted by the disease. Moreover, deep involvement of the rectal wall necessitates simultaneous bowel surgery. Rather than trying to penetrate an obliterated rectovaginal space to excise the vaginal and rectal components of the nodule separately and in a piecemeal fashion, we illustrate a novel surgical technique which consists of resecting the rectovaginal nodule en block: we first perform a partial vaginectomy to separate the nodule from the vaginal canal. With the nodule attached to the rectum along with is vaginal portion, we perform a bowel resection to remove the rectovaginal nodule in one piece. We subsequently repair the bowel by end-to-end anastomosis.

Conclusion: The laparoscopic excision of rectovaginal endometriosis nodules en block eliminates the need to develop an obliterated rectovaginal space and allows optimal and complete nodule excision.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Dina Chamsy: Nothing to disclose
Ted Lee: Ethicon, consulting, other financial benefit

VIDEO PRESENTATION 07

Vestibulectomy: A Review of Technique

Unger CA, Kow N, Jelovsek J. Center for Urogynecology and Reconstructive Pelvic Surgery, Obstetrics, Gynecology & Women's Health Institute, Cleveland Clinic, Cleveland, Ohio

Objectives: To review and describe the technique of posterior vestibulectomy for the surgical management of vulvodynia.

Materials and Methods: Vulvodynia is a complex pain disorder characterized by vulvar discomfort, most often described as burning pain, occurring in the absence of relevant visible findings or a specific, clinically identifiable neurologic disorder. The prevalence of vulvodynia in the United States ranges from 11% to 16% among the sexually active female population ranging from 18 to 64 years of age. Its etiology is not clear but may involve genetic and immunologic, infectious, psychological, and/or anatomic factors. Conservative treatment options include vulvar care measures, topical medications, biofeedback and physical therapy, cognitive behavioral therapy, sexual counseling, and dietary modifications. Appropriate surgical candidates are patients who receive inadequate relief from conservative and medical therapies and who have localized pain to the vestibule. There are many surgical techniques described in the literature and in this video, we describe the technique of posterior vestibulectomy, which is routinely performed at our institution.

Results: The short-term complications of vestibulectomy include hemorrhage and hematoma formation and wound infection. The long-term complications include bartholin cyst formation, decreased lubrication, cosmetic dissatisfaction, and anal weakness. Recurrence rates have been shown to be as high as 13% post-vestibulectomy. Overall, success rates of vestibulectomy are high with improvement of dyspareunia, diminished tenderness of the vestibule and patient satisfaction as high as 80%, 85%, and 90%, respectively.

Conclusion: Surgical management for vulvodynia with vestibulectomy has been shown to have very favorable outcomes as long as the proper surgical candidates are chosen, and meticulous surgical technique is performed.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Cecile A. Unger: Nothing to disclose
Nathan Kow: Nothing to disclose
J Eric Jelovsek: Nothing to disclose

VIDEO PRESENTATION 08

Robotic Assisted Resection of Diaphragmatic Endometriosis

Billow M, Magrina JF, Magtibay P. Mayo Clinic, Phoenix, Arizona

Objective: Robotic resection of diaphragmatic endometriosis is a safe and feasible minimally invasive technique allowing for complete resection of disease.

Description: We present the case of a 34 year old with dysmenorrhea and extensive endometriosis. After the operating room table is rotated 90 degrees, the da Vinci SI system is docked over the patient's right shoulder to facilitate resection of the diaphragmatic endometriosis of the right upper quadrant. With the bipolar grasper in the left arm and the monopolar scissors in the right arm, the entire lesion is excised and repaired with running 0 Maxon suture and reinforced with interrupted 0 Maxon suture. A red rubber catheter is placed into the thoracic cavity and an inspirational pause is performed to ensure an air tight seal. A postoperative chest X-ray should be performed to ensure adequate re-expansion of the lung.

Conclusion: Diaphragmatic endometriosis is rare but can cause significant symptoms. We present a challenging surgical technique that can be accomplished in a minimally invasive manner following basic surgical principles.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Megan Billow: Nothing to disclose
Javier F. Magrina: Nothing to disclose
Paul Magtibay: Nothing to disclose

VIDEOFEST 09

Novel Use of Bakri Balloon as Mold for the Placement of a Vaginal Graft

Rauktys A, Parikh P, Harmanli O. Tufts-Baystate Medical Center, Springfield, Massachusetts

Objective: To demonstrate the use of Bakri Balloon as a vaginal graft mold.
Description: Over the years, there have been various materials and devices used as molds for vaginal graft placement during a modified McIndoe procedure. However, no mold type is considered standard. In this video, we demonstrate the novel use of a Bakri Balloon as a vaginal graft mold. The advantages of the Bakri Balloon include the adjustability in size to fit individual patient's needs, relative availability in gynecologic settings, and its ease of use. Postoperative removal is aided by the ability to deflate the balloon. The patient in this video had a foreshortened vagina following two prior gynecologic surgeries. A split thickness skin graft was harvested from the lower abdomen and carefully sutured around the Bakri Balloon. The graft with balloon was then sutured in place in the vaginal canal. The postoperative course was uncomplicated.
Conclusion: The Bakri Balloon was successfully employed to restore a normal vaginal length in this patient and should be considered as a vaginal graft mold in a modified McIndoe procedure.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Aubrey Rauktys: Nothing to disclose
Pranay Parikh: Nothing to disclose
Oz Harmanli: Nothing to disclose

VIDEOFEST 10

Mini-Laparotomy Myomectomy: A Minimally Invasive Technique for a 40-Week Size Fibroid Uterus

Bassiouni N, Magrina JF, Magtibay P. Gynecologic Surgery, Mayo Clinic in Arizona, Phoenix, Arizona

Objective: Mini-laparotomy myomectomy with morcellation is a safe and efficient alternative for uterine myomectomy of a large 40-week size fibroid uterus in a woman who had yet to complete childbearing.
Description: The patient presented in the video is a 38 year old para 1 female with a greater than 40-week fibroid uterus and desired future fertility. The video illustrates the surgical technique of a mini-laparotomy myomectomy. The myomectomy was performed through a 5 cm suprapubic incision at the site of the patient's prior Pfannenstiel incision. The Mobius elastic device was used as a self-retaining abdominal retractor. The myomas were then progressively morcellated using a scalpel in a similar fashion to vaginal morcellation. The endometrial cavity was not entered. The uterus was then repaired in multiple layers using Vicryl suture. The total weight of the uterine fibroids was 3641 gm. The patient conceived and had a successful pregnancy and delivery at term via cesarean section one year after her myomectomy.
Conclusion: This case illustrates that mini-laparotomy myomectomy is a safe and effective alternative to standard laparotomy, laparoscopic, or robotic-assisted myomectomy.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Nora Bassiouni: Nothing to disclose
Javier F. Magrina: Nothing to disclose
Paul Magtibay: Nothing to disclose

VIDEOFEST 11

V-Y Fasciocutaneous Advancement Flap for Coverage of Large Vulvar Defects

Dinh TA,[2] Williams-Brown MY,[5] Dinh TA,[3] Kaplan AL,[4] Adajar AA.[1]
[1]Obstetrics and Gynecology, Division of Minimally Invasive Gynecologic Surgery, Presence Saint Joseph Hospital, Chicago, Illinois; [2]Medical and Surgical Gynecology, Mayo Clinic in Florida, Jacksonville, Florida; [3]Methodist Center for Restorative Pelvic Medicine, The Methodist Hospital in Houston, Houston, Texas; [4]Obstetrics & Gynecology, Division of Gynecological Oncology, The Methodist Hospital of Houston, Houston, Texas; [5]Obstetrics and Gynecology, Division of Gynecologic Oncology, Texas Children's Hospital Pavilion for Women, Houston, Texas

Objective: The integrity and cosmesis of vulvar wound closure after vulvectomy are maximized when there is minimal tension and a good blood supply to the closed wound. The goal of this video is to show that V-Y fasciocutaneous advancement flaps can cover large vulvar defects that extend near the anal opening.
Description: The surgical treatment of vulvar cancer and other non-malignant vulvar lesions is often radical vulvectomy or wide local excision. For the surgeon, the defect after this type of surgery is large and difficult to repair. For the patients, these defects are disfiguring and add to the stress of coping with the underlying disease. These stressors may add to the high incidence of sexual dysfunction and depression in patients with these conditions. The V-Y fasciocutaneous advancement flap technique is ideal for closure of these large defects as it preserves good blood supply to the surrounding skin. In addition, it provides an excellent cosmetic result. The goal of this video is to illustrate the V-Y Fasciocutaneous Advancement Flap Technique, and to show that this procedure can cover large vulvar defects that extend near the anal opening.
Conclusion: The V-Y fasciocutaneous advancement flap technique is ideal for closure of these large defects as it preserves good blood supply to the surrounding skin. In addition, it provides an excellent cosmetic result. This procedure is easy to learn and adds to the surgical armamentarium of the gynecologic surgeon.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Tri A. Dinh: Nothing to disclose
Marian Y. Williams-Brown: Nothing to disclose
Tue A. Dinh: Nothing to disclose
Alan L. Kaplan: Nothing to disclose
Allan A. Adajar: Nothing to disclose

VIDEOFEST 12

Surgical Repair of a Vesicovaginal Fistula

Fazari A, Grias I, Mohamed W, Babiker E, Loehr J, Matthews G, Ibrahim A, Ali N, Musharaf K. Reproductive and Child Health research Unit, University of Medical Sciences & Technology, Khartoum, Sudan

Objective: Case report of vecisovaginal fistula repair.
Description: This is a case of a 21-year-old primigravid female from West Darfur who presented to Elgenina Hospital with sepsis and urinary incontinence after delivery of a non-viable term infant 5 days prior. She was brought in by her family after an obstructed labor course. The women in Sudan and other developing nations who suffer obstetric fistula cannot be counted. They are too far from health care

facilities, too poor, too marginalized, and there are too few health care providers.
Conclusion: We bring this video to keep the dialogue around fistula repair in the gynecologic surgery community in the forefront, to reveal a simple technique for repair, and to encourage the American gynecologic surgical community in its development toward the globalization faced throughout the medical communities today.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Atif Fazari: Nothing to disclose
Irene Grias: Nothing to disclose
Wafaa Mohamed: Nothing to disclose
Enas Babiker: Nothing to disclose
Jordann Loehr: Nothing to disclose
Gayle Matthews: Nothing to disclose
AllaEdin Ibrahim: Nothing to disclose
Nazek Ali: Nothing to disclose
Khalifa Musharaf: Nothing to disclose

VIDEOFEST 13

Vaginal Sacral Colpopexy

Hanes CR. Urogynecology of Southern Alabama, Mobile, Alabama

Objectives: The objective of this video is to demonstrate that a sacral colpopexy can be performed safely through a transvaginal, retroperitoneal approach.
Materials and Methods: The video is a composite taken from several cases that provide different viewpoints of the vaginal sacral colpopexy (VSC) procedure.
Results: Visualization through the open enterocele enables safe dissection of the retroperitoneal space, exposing the anterior longitudinal ligament at the S-1, S-2 level. All other steps of the operation are identical to the abdominal sacral colpopexy procedures.
Conclusion: The technique enables a sacral colpopexy to be performed safely through a vaginal approach. There are certain clear advantages including access to all compartments, low morbidity, and low cost.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Charles R. Hanes: Nothing to disclose

VIDEOFEST 14

Suprapubic Catheters: The Mayo Approach

Madsen AM, Kim-Fine S, El-Nashar SA, Gebhart J. Obstetrics and Gynecology, Mayo Clinic, Rochester, Minnesota

Objective: Suprapubic catheters are placed for a variety of indications and can be used for postoperative bladder drainage following urogynecologic procedures. Our group has found them to be very useful for postoperative management when patients live a long distance from the hospital. We created this instructional video to share our technique for safe suprapubic catheter placement.
Description: The goals of this video are to discuss the indications as well as the risks and benefits of suprapubic catheters to guide proper patient selection. We will then demonstrate how to place a suprapubic catheter followed by a brief discussion of complications that patients may experience.
Conclusion: With proper patient selection and skillful technique, suprapubic catheters can be a safe and effective method of postoperative bladder management following urogynecologic procedures.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Annetta M. Madsen: Nothing to disclose
Shunaha Kim-Fine: Nothing to disclose
Sherif A. El-Nashar: Nothing to disclose
John Gebhart: Nothing to disclose

VIDEOFEST 15

Knowing the Relevant Anatomy Related to the Abdominal Sacrocolpopexy

Sass BL, Lotze P. Women's Pelvic Health and Continence Center, Houston, Texas

Objective: This video reviews the relevant anatomy of the sacrum, pelvic side wall, and vagina before and after peritoneal dissection, identifying structures that are important to the sacrocolpopexy. A fresh frozen cadaveric model is utilized.
Description: The sacrocolpopexy is gaining popularity as a definitive surgical procedure for the treatment of apical prolapse. As this procedure is performed with greater frequency, there is a need for a clear understanding of the anatomy to minimize risk of complications such as bowel, vascular, and ureteral injury. This video reviews the relevant anatomy of the sacrum, the pelvic side wall and structures immediately surrounding the vagina. Using a fresh frozen cadaveric model, each of these regions examined in three states: (1) the peritoneum intact, (2) the peritoneum incised with structures visualized as would be seen in a routine surgical dissection, and (3) a complete dissection of the retroperitoneal spaces. Dissection includes an examination of neurovascular structures, the lower genitourinary system, and potential spaces.
Conclusion: Knowledge of the surrounding anatomy is of critical importance when performing the abdominal sacrocolpopexy, thus enhancing patient safety and minimizing risk of complications.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Brandon L. Sass: Nothing to disclose
Peter Lotze: Nothing to disclose

VIDEOFEST 16

Robotic Burch Colposuspension: A Surgical Case and Instructional Video

Francis SL, Deveneau NE, Agrawal A, Ostergard DR, Azadi A. OB/GYN, University of Louisville, Louisville, Kentucky

Objective: The objective of this video is to demonstrate surgical technique and instruction for a robotic Burch colposuspension and to review important surgical anatomy.
Description: The patient is a 53-year-old female with a history of ulcerative colitis who presented with symptoms of vaginal pressure, urinary incontinence, and constipation. She had been previously treated for prolapse with a pessary. She had symptoms and urodynamics consistent with mixed urinary incontinence and had been treated with antimuscarinics for overactive bladder. On examination she was found to have stage II prolapse. Urodynamics did not reveal any evidence of intrinsic sphincter deficiency. She desired surgical management of both her prolapse and stress incontinence. The video demonstrates a surgical technique for robotic Burch colposuspension with illustration of pertinent surgical anatomy as well as tips for successful completion of the procedure.
Conclusion: Robotic Burch colposuspension can be completed in a safe and effective manner and should be considered as an option for patients in whom an anti-incontinence procedure is indicated and are already undergoing robotic surgery.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Sean L. Francis: Astellas, Speaker, Honorarium
Nicolette E. Deveneau: Nothing to disclose
Anubhav Agrawal: Nothing to disclose

Donald R. Ostergard: Nothing to disclose
Ali Azadi: Nothing to disclose

VIDEOFEST 17

Intrauterine Device (IUD) Perforation and Cystoscopic Removal

Peterson AT,[1] Luongo T,[2] Ferzandi TR.[3] [1]Obstetrics & Gynecology, Tufts Medical Center, Boston, Massachusetts; [2]Urology, Tufts Medical Center, Boston, Massachusetts; [3]Division of Urogynecology and Pelvic Reconstructive Surgery, Tufts Medical Center, Boston, Massachusetts

Objective: To describe a case of IUD uterine perforation, its migration through the bladder wall and its ultimate retrieval using cystoscopic resection and subsequent bladder repair via laparoscopy.
Description: A 28-year-old G4P2022 at 9 weeks gestation presented for care in 2010. She was sent for a routine prenatal ultrasound. During the ultrasound, an echogenic focus was noted abutting the bladder with dimensions consistent with an intrauterine device (IUD). The patient's history was significant for a copper IUD that was inserted in 2003. Following the insertion, the patient had episodes of pelvic pain and was lost to follow-up until she presented for a physical in 2004. The IUD strings were not visualized and an ultrasound was ordered. The IUD was not noted on the ultrasound and was presumed expelled. After the findings on prenatal ultrasound in 2010, the patient underwent an office cystoscopy that was notable for an IUD infiltrating the posterior wall of the bladder. From 2010 through 2013, the patient experienced three pregnancies. When she returned to follow-up, the patient had a second office cystoscopy in early 2013 that revealed the IUD had further migrated into the bladder cavity. Several months later, she underwent cystoscopic removal of the IUD, which by that time had almost entirely migrated into the bladder cavity. Laparoscopy was performed to repair the cystotomies that were created during the resection.
Conclusion: Uterine perforation is a rare but known complication of IUD insertion. This case illustrates that an extrauterine IUD may continue to migrate even after the initial perforation, perhaps secondary to the patient's subsequent pregnancies. As such, the resultant delay of definitive surgery may have allowed for continued migration of the device ultimately allowing for removal by cystoscopy rather than an abdominal approach.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Ashley T. Peterson: Nothing to disclose
Tony Luongo: Nothing to disclose
Tanaz R. Ferzandi: Nothing to disclose

VIDEOFEST 18

Perineal Restoration before Site-Specific Repair: A New Approach

Wang CG, Harmanli O. OB/GYN, Baystate Medical Center, Springfield, Massachusetts

Objective: Describe a modified approach to site-specific repair for posterior vaginal wall defects.
Description: Prolapse of the posterior wall has traditionally been repaired with midline plication of the vaginal fibromuscular layer. In the recent decades, site-specific repair of the posterior vaginal wall has also been preferred by some pelvic surgeons. The most common posterior wall defect is caused by central detachment and lateral retraction of the bulbocavernosus and the other perineal fibromuscular elements along with separation of the vaginal fibromuscular layer horizontally from the perineal body. For site specific reconstruction, discrete defects of the posterior wall are identified and typically corrected starting with the most apical one. In our institution, we follow this approach; however, for the distal vaginoperineal defects, we have adopted a new technique which starts with reapproximation of the torn and retracted perineal body structures in the midline first followed by reattachment of the disrupted vaginal fibromuscular layer to this restored perineal body.
Conclusion: Based on the outcomes we have observed, we believe that performing this perineal restoration before correction of horizontal separation of the vaginal fibromuscular layer, so-called "rectovaginal septum," provides an anatomically more appropriate and durable repair.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Che-Yu G. Wang: Nothing to disclose
Oz Harmanli: Nothing to disclose

VIDEO CAFE 19

Fascia Lata Harvest and Hybrid Sling for Robotic Abdominal Sacrocolpopexy

Lockrow EG,[1] Whitehurst SV.[2] [1]Obstetrics and Gynecology, Uniformed Services University, Kensington, Maryland; [2]Obstetrics and Gynecology, Walter Reed National Military Medical Center, Bethesda, Maryland

Objective: With the recent controversy over the use of mesh in vaginal surgery, many patients are presenting to their gynecologic surgeon with a preconceived objection of the use of mesh. In those patients who cannot be convinced of the safety of mesh products, one alternative is to use autologous fascia. The purpose of this video is to educate gynecologic surgeons on the details and technique of performing a fascia lata harvest and a unique method of utilizing a portion of that fascia to create a hybrid tension free vaginal tape mesh sling.
Description: This video demonstrates the technique of fascia lata harvest and fabrication of a hybrid sling in a visual and auditory manner. This allows gynecologic surgeons to conceptualize the important details of the fascia lata harvest procedure.
Conclusion: Because of the ease and use of mesh slings and products, the technique of fascia-lata harvest has been for the most part abandoned. However with the recent controversy over the use of vaginal mesh, many patients are requesting alternative methods of surgery. Informative videos are an excellent method to teach procedures that have been replaced by the common procedures of mesh abdominal Sacrocolpopexy and mesh slings used today.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Ernest G. Lockrow: Nothing to disclose
Sabrina V. Whitehurst: Nothing to disclose

VIDEO CAFE 20

Three Essential Tools in Vaginal Surgery

Nieuwoudt A. Ziekenhuis Zorgsaam, Terneuzen, Netherlands

Objective: Protection and visualization forms the basis of vaginal surgery. Three essential tools to support the vaginal surgeon is shown in this video.
Description: The tools of the trade to visualize and protect is not only the tool itself, but also how to utilize it. In the video, the triad of Breisky retractors, two needle holders, and a robust 5/8th circle needle is shown how they complement each other to support a safe and effective surgical technique.
Conclusion: Without the proper tools the surgeon is ineffective and at times dangerous. Safety and effectiveness in surgery can be attained without resorting to expensive "innovative" instruments.
DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS:

Andri Nieuwoudt: Nothing to disclose

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Scientific Program Authors

*Member Candidate

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*Member Candidate