

Urodynamics, Incontinence, and Neurourology

*Highlights from the Society for Urodynamics and Female Urology Annual Winter Meeting,
February 28-March 2, 2008, Miami, FL*

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The Society for Urodynamics and Female Urology (SUFU) held its 4th Annual Winter Meeting in Miami, Florida, on February 28-March 2, 2008. The society's membership and attendance continues to grow and this year's meeting had the largest registered attendance to date, over 330 people. The meeting traditionally starts with 1 day of basic science research followed by 3 days of clinical practice and research sessions. A total of 96 original scientific works were presented in poster and podium sessions in all major domains of the SUFU membership, including basic science, urodynamics, basic and clinical neuromodulation, genitourinary reconstruction, neurourology, benign prostatic hyperplasia, female urology, geriatric urology, interstitial cystitis (IC)/painful bladder syndrome (PBS), drugs and devices, stress urinary incontinence (SUI), and pelvic

organ prolapse (POP). Some of the important works presented are herein summarized.

Stress Incontinence and Pelvic Organ Prolapse

Elmissiry and colleagues¹ from the Cleveland Clinic Florida (CCF) reported on sexual dysfunction after midurethral synthetic slings are placed by the transobturator approach. They noted that the prevalence of sexual dysfunction has been reported to be 14.3% after tension-free vaginal tape procedure with 10.2 months follow-up. Previously, 6 studies with an average follow-up of 5.3 months found a 10.5% dysfunction in the transobturator population. The CCF group performed a retrospective chart review for 50 women who underwent a transobturator midurethral sling procedure during an 18-month period (May 2004-October 2005) to determine the long-term impact on female sexual function. Using the Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire, more

than 73% of responding women had satisfactory sexual function scores; 93.3% never or seldom had dyspareunia and 90% never or seldom had coital incontinence. Researchers found 13.3% had less intense orgasm due to male partner problems and 6.7% had less intense orgasm due to either coital incontinence or dyspareunia. The group concluded that the transobturator midurethral sling technique for the treatment of stress urinary incontinence does not have a significantly negative impact on post-operative female sexual function. It was not clear if age or frequency of sex was a factor in the results. The 6 of 36 who were not sexually active after the surgery were not questioned to determine the reason.

Anger and coworkers² presented another outcomes analysis using Medicare claims data to evaluate the factors that influence thromboembolic complications after sling surgery. Among female Medicare beneficiaries age 65 years and older, a total of 1356 sling surgeries were performed on a

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5% national random sample during the 18-month index period (January 1999-May 2000), which extrapolates to 27,120 sling surgeries. Diagnoses of thromboembolism, including deep vein thrombosis (DVT) or pulmonary embolism, that occurred 1 year after the sling procedure was identified using International Classification of Diseases codes. The results revealed that 1.8% of women undergoing a sling alone developed thromboembolic complications, whereas 3.6% undergoing concomitant prolapse surgery developed them. Multivariate analysis showed that concomitant prolapse surgery was associated with twice the risk of thromboembolic complications. It was concluded that the increase in operative time in the dorsal lithotomy position may be the cause. Therefore, women undergoing sling surgery represent a target population for appropriate DVT prophylaxis. It was acceded that the limitations of the study were 2-fold; the inability to determine which of the women were actually prophylaxed during surgery and whether the length of time the patients were tracked influenced the association to the surgery. In addition, women who had simultaneous prolapse surgery were included in the study. Finally, due to the time period evaluated, there were probably only a small percentage of minimally invasive midurethral sling procedures.

Ballert and colleagues³ reported on 110 women managed with a urodynamic protocol to determine if a simultaneous anti-incontinence procedure (midurethral synthetic sling) should be performed at the time of vaginal POP repair. During evaluation, it was determined whether clinical SUI, urodynamic SUI, or occult SUI (stress incontinence discovered during urodynamics only with POP reduction) was present. Based on the protocol, if occult or urodynamic SUI was found, a sling was placed. If clin-

ical SUI was not demonstrated, a sling was not placed. They found that the risk of intervention (ROI) due to obstruction after sling placement was approximately equal to the ROI for SUI if a sling was not placed (7.9% vs 8.3%). However, the ROI for SUI in patients with clinical, but no urodynamic or occult SUI and no sling was 30%.

Gilchrist and associates⁴ examined whether biomechanical properties of anterior prolapsed vaginal tissue could predict outcomes of prolapse repair. The biomechanical properties of vaginal epithelium in 32 postmenopausal women were studied with uniaxial tensile testing. The samples were stretched until the tissue tore and stress-strain curves (Young's modulus) were obtained by investigators blinded to the clinical scenario. There was a minimum 1-year follow-up and failure was defined as recurrence on examination with Baden grade ≥ 2 or reoperation for recurrent bladder or mixed bladder/apical prolapse. There was no correlation between Young's modulus and the clinical result at 2 to 3 years follow-up. In their limited sample, they concluded that retropubic scarring and pelvic floor muscle properties may be more important for a successful repair outcome than the intrinsic qualities of the vaginal wall. Long-term follow-up and continuation of the study would not be done due to the difficult logistics.

Urodynamics

The topic of developing a urodynamics (UDS) curriculum for urology residents was addressed by both Harriette Scarpero, MD and Elizabeth Mueller, MD. Dr. Mueller⁵ reported on the results of 2 needs assessments that were performed in 2006. A needs assessment questionnaire regarding urology resident urodynamic training was administered to participants of the 2006 SUFU winter meeting and a 2006 University of Chicago-sponsored urology

review course. According to the questionnaire results, 77% of residents receive lectures on UDS, 84% interpret UDS, and 82% observe UDS. Eighty-two percent and 89% of residents and attending physicians, respectively, believe that residents would benefit from more formal training and 80% of both groups believe that residents should perform urodynamic testing during residency. However, only 31% of residents actually performed a urodynamic procedure. The Society of Urologic Chairpersons and Program Directors previously recognized the need for an established curriculum in UDS, and this study confirmed that current residency training in UDS is inadequate. Data from this analysis are being used to design a UDS core curriculum.

Dr. Scarpero⁶ reported the 1-year experience with a competency-based approach to teaching UDS. Five measurable components were defined: terminology and theory, setting up the study, running the study, interpreting the study, and reporting UDS. Five first- or second-year urology residents participated in this curriculum during an outpatient clinic rotation. Residents spent 1 day a week for 3 months with an attending urologist performing UDS. Residents also participated in didactic lectures, interpretation conferences, and a UDS laboratory practicum. At the end of the rotation, residents performed a supervised UDS study and were evaluated by the same attending physician. Evaluation was performed using an objective structured assessment of technical skills based on a 5-item scale of proficiency (from novice to expert). The educators found that this provided a standardized and reproducible means to evaluate the residents' proficiency and knowledge. In addition, the residents reported (by anonymous questionnaire) that this curriculum improved their comprehension of UDS and their confidence in performing studies.

IC/PBS

Clemens and coworkers⁷ reported on the practice patterns of primary care physicians (PCPs) in the management of IC/PBS. The study suggested that PCPs have significant knowledge deficits regarding the clinical characteristics of IC/PBS. In addition, they rarely manage the condition. The authors suggested that education of PCPs regarding IC/PBS would likely improve care for these patients.

Twiss and associates⁸ reported on the results of a pilot study using acupuncture to treat IC. Seven patients with newly diagnosed IC underwent weekly acupuncture treatments for 12 weeks. Electrical stimulation was performed with standardized protocol of acupuncture with electrical stimulation involving identical acupuncture points (front and back). Patients' pain, voiding, and sexual symptoms were evaluated with multiple pre- and post-treatment validated self-assessment instruments. They found that this small group of patients reported a modest improvement in overall urinary and painful bladder symptoms, but no improvement in sexual symptoms. The long-term effect of acupuncture on these symptoms is unknown, and requires a larger randomized trial to further elucidate its role in treating patients with IC.

Neurourology

Herschorn and Golda⁹ compared UDS results to presenting lower urinary tract symptoms in 184 men and women with multiple sclerosis (MS). While detrusor pressures (maximum and detrusor pressure at maximum flow) were higher in men, the prevalence of detrusor overactivity (DO) was similar in men and women. The finding of DO did not correlate with the complaint of urge incontinence. Also, postvoid residual volume, voiding pressures, and flow rates did not correlate with voiding symptoms in either sex. As such, in the investiga-

tion and management of the patient with MS, UDS must be interpreted in the context of the patients' disease.

Fletcher and colleagues¹⁰ showed a very low risk of upper tract deterioration in MS patients with neurogenic voiding dysfunction managed at a tertiary care center. Forty-three patients had baseline renal ultrasound and UDS and follow-up ultrasound (mean, 28 months). Only 3 of 43 (6.9%) presented initially with abnormal ultrasound findings (2 unilateral hydronephrosis and 1 cortical thinning). Ultrasound findings remained unchanged in 1 (on surveillance only) and improved in 2 (1 instituted clean intermittent catheterization and 1 surveillance only). Two of 40 patients with a normal baseline ultrasound developed abnormal findings on follow-up study (1 on clean intermittent catheterization and 1 on surveillance).

Neuromodulation

Outcomes for neuromodulation, particularly with respect to frequency, urgency, and urge incontinence, have traditionally been assessed by objective measurements such as reduction in number or percentage change in micturitions or urge incontinence episodes. Peters and associates¹¹ found that global response assessments (GRAs) were valuable to determining outcomes of InterStim® (Medtronic, Inc., Minneapolis, MN) neuromodulation with respect to symptoms of urgency, frequency, and pelvic pain. Using the GRA, a 7-point Likert-like scale, they classified patients as treatment responders if they were moderately or markedly improved. After 3 months of treatment, responders demonstrated statistically significant improvements in frequency (decreased), voided volume (increased), and urgency and pain scores (visual analog scale), but nonresponders did not.

The same group, in a prospective study, found an improvement in sexual function using the Female Sexual

Function Index in a group of 35 sexually active women undergoing InterStim® neuromodulation for urgency/frequency, urinary retention, or interstitial cystitis for 6 months.¹² ■

The 2009 SUFU Winter Meeting will be held February 25-28 at the Green Valley Ranch in Las Vegas, Nevada. Information on this meeting and other meetings can be obtained at the SUFU Web site at <http://www.sufuorg.com>.

References

1. Elmissiry M, Abdelwahab H, Ghoniem G. Female sexual function after transobturator tape technique for stress urinary incontinence: two years follow up. *Neurourol Urodyn*. 2008;27:147. Podium presentation 26.
2. Anger JA, Litwin MS, Gore JL, et al. Thromboembolic complications of sling surgery: a call for DVT prophylaxis. *Neurourol Urodyn*. 2008;27:148. Podium presentation 27.
3. Ballert KN, Biggs G, Isenalmhe A Jr, et al. Managing the urethra at the time of transvaginal pelvic organ prolapse repair: a urodynamic approach. *Neurourol Urodyn*. 2008;27:149. Podium presentation 29.
4. Gilchrist A, Zimmern P, Bhat A, et al. Do biomechanical properties of anterior prolapsed vaginal tissue predict surgical outcome repair? *Neurourol Urodyn*. 2008;27:149-150. Podium presentation 30.
5. Mueller ER, Kenton K, Scarpero HM, et al. Urodynamics curriculum for urology residents (UCUR). *Neurourol Urodyn*. 2008;27:137. Poster 22.
6. Scarpero H. Creating taxonomy and assessing proficiency in urodynamic education of the urology resident. *Neurourol Urodyn*. 2008;27:137. Poster 21.
7. Clemens JQ, Calhoun EA, Litwin MS, McNaughton Collins M. Primary care physician practice patterns in the management of interstitial cystitis/painful bladder syndrome. *Neurourol Urodyn*. 2008;27:140. Poster 28.
8. Twiss C, Arboleda V, Triaca V, et al. Pilot study of acupuncture for treatment of interstitial cystitis. *Neurourol Urodyn*. 2008;27:141. Poster 29.
9. Herschorn S, Golda N. Correlation of urodynamic results with lower urinary tract symptoms in patients with multiple sclerosis. *Neurourol Urodyn*. 2008;27:135. Podium presentation 24.
10. Fletcher SG, Gilchrist AS, Frohman E, Lemack GE. Patients with multiple sclerosis and neurovesical dysfunction are at very low risk for upper tract deterioration. *Neurourol Urodyn*. 2008;27:136. Podium presentation 25.
11. Peters KM, Killinger KA, Ibrahim IA, Villalba P. Changes in urinary urgency, frequency, and pelvic pain after sacral neuromodulation and the role of the global response assessment. *Neurourol Urodyn*. 2008;27:114. Podium presentation 1.
12. Peters KM, Ingber M, Killinger K, Ibrahim IA. The effect of neuromodulation on female sexual function. *Neurourol Urodyn*. 2008;27:114-115. Podium presentation 3.