183

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THE EFFECT OF AGE ON STRESS AND URGENCY URINARY INCONTINENCE OUTCOMES IN WOMEN UNDERGOING PRIMARY MIDURETHRAL SLING

Hypothesis / aims of study:
Stress urinary incontinence (SUI) affects up to 35% of the female population[1,2]. SUI can be treated with both non-surgical and surgical treatments, but the only documented long term curative treatment is surgery. Midurethral sling (MUS) surgery and is now considered the gold standard for SUI treatment[3]. Success rates of these procedures at 12 months range from 77-90% reflecting differences in definition of success[3]. SUI rates increase with age[1] and currently, there is little robust data in the literature about outcomes of the older woman undergoing a MUS compared to those of younger women. As women age, there are unique considerations that may affect overall sense of improvement and satisfaction such as the presence of mixed UI, impaired detrusor function and increased medical comorbidities. The primary aim of the study was to characterize SUI outcomes after a primary MUS in women ≥70 (older women) compared to woman <70 (younger women). We also characterized urgency urinary incontinence symptom distress and symptom specific impact outcomes.

Study design, materials and methods:
A retrospective cohort study where women undergoing a primary MUS at our institution between 2006 and 2010 were included. Participants were evaluated with validated symptom specific distress and impact QOL measures. The primary outcome is SUI symptoms defined as either “moderately” or “quite a bit” responses to at least one of the two SUI questions of the Pelvic Floor Distess Inventory-20 (PFDI-20). Urgency UI was defined at baseline and follow-up as either “moderately” or “quite a bit” responses to the UUI question of the PFDI-20. Resolution of and *de novo* UUI as well as persistent UUI was evaluated and compared between cohorts. Patients were considered to have resolution of UUI symptoms by responding “no”, “not at all”, or “somewhat” to the UUI question of the PFDI-20 post-operatively. They were considered to have *de novo* UUI if they answered “no”, “not at all”, or “somewhat” responses to the UUI question at baseline and “moderately” or “quite a bit” responses post-operatively. Persistent UUI symptoms were defined as having baseline and postoperative “moderately” or “quite a bit” responses on the PFDI-20 UUI question. The Pelvic Floor Impact Questionnaire (PFIQ-7), and the Medical, and Epidemiological, and Social aspects of Aging questionnaire (MESA) were administered to patients pre and post-operatively. In addition, The Patient Satisfaction Questionnaire (PSQ) was used defining satisfaction as those patients responding as "somewhat" or "completely satisfied". The Patient Global Impression of Improvement (PGI-I) was also used defining improvement as those patients responding with "much better" or "very much better". Student t-test, Wilcoxon rank sum test, chi-square and Fisher’s exact were used to compare outcomes between the two groups: women age ≥70 and women < 70. Multivariable regression analyses were performed controlling for baseline urgency urinary incontinence symptoms, obesity, medical comorbidities, tobacco use, prior hysterectomy, vaginal estrogen use, concurrent prolapse surgery, and Valsalva leak point pressures.

Results:
696 women undergoing primary MUS were included. The mean age of patients ≥70 (N=160) was 75.4±4.5 and the mean age of patients < 70 years (N=536) was 56.2±9.4. Older women had significantly higher proportions of medical comorbidities including osteoporosis, diabetes mellitus, hypertension and COPD (70.6% vs 50.8%, p<0.0001), prescription medications (5.8± 3.1 vs 4.5 ± 3.5, p<0.0001), prior hysterectomy (73.1% vs 59.0%, p=0.0012), vaginal estrogen use (90.2% vs 69.9%, p<0.0001), detrusor overactivity (23.4% vs 10.7%, p=0.0004), lower median, range, baseline Valsalva leak point pressures (88.5, 70.7, 115.7 vs 110, 86, 139.7 cm H_2O, p<0.0001), and higher concurrent prolapse surgery (78.8%vs 68.8%, p=0.015) as compared to younger women. There was no difference in primary SUI failure rates between the age-stratified cohorts (< 70, 27.4% and ≥ 70, 33.1%, p=0.16). Multivariate analysis showed no difference in SUI failure rates in older women compared to younger women (adjusted OR 1.7, 95% CI 0.9-3.1). Younger women did demonstrate significantly greater decreases in MESA SUI subscale scores after primary sling compared to older women (-8.2±10 vs -3.1±8.5, p<0.0001, respectively) and a greater improvement in UI symptom impact as compared to older women (-20.4±33 vs -12.2±30.7, p=0.01, respectively). A significantly higher proportion of older women had baseline UUI symptoms (64.1% vs 51.4%, p=0.02). There was no difference between age groups in resolution of UUI symptoms or *de novo* UUI symptoms after primary MUS (Table). However, there were greater persistent UUI symptoms in the older women. Younger women reported a greater impression of improvement of their urinary tract condition post-operatively as compared to older women (< 70, 67.7% and ≥ 70 56.6%, p=0.011); however, there was no difference in the proportion of subjects reporting post-operative satisfaction between the cohorts (< 70, 83.2% and ≥ 70 77.0%, p=0.08).

Interpretation of results
There was no difference between age groups in SUI outcomes after primary MUI, resolution of UUI symptoms, or *de novo* UUI symptoms after primary MUS. Younger women have greater improvement in UI symptom impact and greater impression of improvement of their urinary tract condition after primary MUS as compared to older women

Concluding message:
Older and younger women have similar SUI outcomes after primary MUS; however, older women have more persistent urgency UI symptoms and a worse impression of improvement in their urinary tract condition following primary MUS as compared to younger women. As population demographics continue to evolve, specifics on age-related outcomes of urinary incontinence interventions deserve further investigation. This information will be vital to informing all women regarding their expectations of surgical intervention for SUI.

Urgency Urinary Incontinence Outcomes

Characteristic	< 70 (n=536)	≥70 (n=160)	P
Baseline Urgency UI (Q16)	209 (51.4%)	75 (64.1%)	0.02
Persistent Urgency UI (Q16)	124 (23.3%)	50 (31.5%)	0.04
Resolution Urgency UI	122 (29.6%)	40 (34.2%)	0.34
DeNovo Urgency UI	31 (7.5%)	5 (4.3%)	0.22

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Disclosures

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