

## PRESENTATION AND EVALUATION FOR WOMEN REQUIRING URETHROLYSIS AFTER ANTI-INCONTINENCE PROCEDURE.

### Hypothesis / aims of study

To review cases of women who underwent urethrolysis with or without suburethral mesh removal and evaluate reasons for presentation, preoperative evaluation, and both non-surgical and surgical treatments used.

### Study design, materials and methods

This is a case series of patients who underwent urethrolysis at a tertiary care center between January 2000 and October 2008 following an anti-incontinence procedure. Women were excluded if they had a concomitant anti-incontinence procedure at the time of urethrolysis. Data was obtained through a combination of a mailed validated questionnaire and electronic medical records. The index surgery was defined as the anti-incontinence procedure preceding the need of urethrolysis. Baseline patient characteristics were summarized including age, body mass index (BMI), smoking history, menopausal status, preoperative diagnoses, number and type of previous anti-incontinence procedures, and concurrent procedures performed at the time of initial sling procedure. Proportions were compared between groups using the chi-square test or Fisher's exact test. In addition, reasons for urethrolysis, approach to urethrolysis and the time course between index surgery and need for further intervention were summarized.

### Results

Of the 235 patients who underwent urethrolysis, 131 returned the mailed questionnaire regarding their current status and are included in the results. Mean age of women at the time of their index incontinence surgery was 57.2 years (standard deviation (SD) 12.7). Mean BMI at the time of the urethrolysis was 28.2 kg/m<sup>2</sup> (SD 6.0).

Of the 131 patients, 73 had a synthetic midurethral sling (MUS) (retropubic or transobturator approach) as their index surgery, 16 had a traditional retropubic urethropexy (RPU) (Burch, MMK), 36 had a bladder neck procedure (autologous rectus fascial sling or bone anchor sling with an allograft or autograft), and 6 had an unknown or other type of procedure. Of the 73 patients with MUS, 63 had a macroporous monofilament sling and 9 had a heat-welded material (ObTape); material was unknown for 1 patient. Also of these 73 patients, 60 had a retropubic approach and 13 had a transobturator approach. Of the 131 patients, 31 patients (23.7%) had at least one prior procedure to treat incontinence. Mean time between index surgery and urethrolysis was 1.4 years (SD 2.4). The presenting symptoms for urethrolysis were chronic retention of urine in 86 women (65.6%), storage symptoms (urgency, frequency, urge incontinence with or without obstruction) in 72 (55.0%), and mesh erosion in 22 (16.8%). Bladder neck, traditional RPU, and MUS procedures were associated with a pre-urethrolysis diagnosis of urinary retention in 72.2, 62.5, and 60.3% of patients, respectively. This difference was not statistically significant. Patients with bladder neck procedures were significantly more likely than patients with MUS to present with storage symptoms (66.7% vs. 45.2%, p=0.035; Table 1). In addition, patients with traditional RPU were significantly more likely than patients with MUS or bladder neck procedures to present with pain (56.3% vs 17.8%, p=0.001; 56.3% vs 22.2%, p=0.016). Of the 9 women who had ObTape used at their index surgery, 88.9% had mesh erosion prior to their urethrolysis. One woman also had chronic retention of urine and two had storage symptoms. In comparison, of the 63 women who had macroporous monofilament slings, 43 (68.3%) had chronic retention of urine while 12 (19.1%) had mesh erosion prior to their urethrolysis. When comparing approaches for MUS, women with a retropubic approach were significantly more likely to present with chronic retention of urine (p<0.001) and storage symptoms (p=0.017). In contrast, women with a transobturator sling were more likely to present with mesh erosion (p<0.001). Of the 131 patients, 79 (60.3%) had some portion of urodynamic studies done as part of the preoperative evaluation. Voided and residual volumes were available for 78 women. Mean volume voided was 191.6 mL (SD 129.9) with a residual of 213.2 mL (SD 211.7). The peak flow rate (Qmax) was available for 69 women and the mean was 13.5 mL/second (SD 7.3). The detrusor pressure (Pdet) at Qmax was available for 24 women; the mean pressure was 36.0 cm of water (SD 21.4). Women tried various other therapies prior to urethrolysis. Of the 109 women without mesh erosion, 32 (29.4%) used an anticholinergic medication and 80 (73.4%) either did intermittent self-catheterization or had an indwelling catheter (transurethral or suprapubic tube) for greater than 2 weeks. Women underwent a transvaginal approach to urethrolysis in 81.7% of cases and retropubic approach in 9.2% of cases. Of the 131 women in the study, 53 (40.5%) had a sling incised in the midline, 46 (35.1%) had mesh partially excised, and only 6 (4.6%) had mesh completely excised.

**Table 1** – Presenting symptoms by type of anti-incontinence procedure

	Midurethral sling (N=73)	Traditional Retropubic (N=16)	Bladder neck (N=36)	Other/Unknown (N=6)
Chronic retention of urine	44 (60.3%)	10 (62.5%)	26 (72.2%)	6 (100%)
Storage symptoms	33 (45.2%)	12 (75.0%)	24 (66.7%)	3 (50.0%)
Pain	13 (17.8%)	9 (56.3%)	8 (22.2%)	0
Mesh erosion	21 (28.8%)	0	1 (2.8%)	0

### Interpretation of results

We present a large case series of women who underwent urethrolysis following various anti-incontinence procedures. Our study is not meant to address the overall complication rates of women having anti-incontinence procedures. Preoperative diagnosis for urethrolysis for most of the women was urinary retention with or without storage symptoms. Mesh erosion was

also noted and was the main reason for urethrolysis procedures done when ObTape was used at their index surgery. Urodynamic studies were consistent with the diagnoses of chronic retention of urine. Although parameters for obstruction are less useful in women, the mean results were consistent with the cutoff values of Qmax <15 ml/second and Pdet at Qmax >20 cm of water used by some authors. A mean of 1.4 years (SD 2.4) passed from anti-incontinence procedure until urethrolysis. Women with urinary retention and overactive bladder symptoms often underwent treatment with more conservative methods of anticholinergic medication and/or self-catheterization prior to urethrolysis.

#### Concluding message

Although the rate of complications with anti-incontinence procedures remains low, these complications may be a significant burden for our patients. Continued problems such as chronic retention of urine and bothersome storage symptoms should be addressed in a timely manner.

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<b><i>Is this a clinical trial?</i></b>	<b>No</b>
<b><i>What were the subjects in the study?</i></b>	<b>HUMAN</b>
<b><i>Was this study approved by an ethics committee?</i></b>	<b>Yes</b>
<b><i>Specify Name of Ethics Committee</i></b>	<b>Mayo Clinic Institutional Review Board # 08-006914</b>
<b><i>Was the Declaration of Helsinki followed?</i></b>	<b>Yes</b>
<b><i>Was informed consent obtained from the patients?</i></b>	<b>Yes</b>