

LONG-TERM MANAGEMENT OF URETHRAL STRICTURE IN WOMEN

Hypothesis / aims of study

To report our long-term experience of luminal urethral stricture (LUS) in women treated with dilation under general anesthesia.

Study design, materials and methods

Following Independent Review Board approval, charts of women who underwent outpatient urethral dilation (UD) under general anesthesia for LUS at one institution by the same surgeon and had at least 6 months follow-up were reviewed. LUS was defined on urethroscopy with visualization of a narrowed and distorted urethral lumen (Figure 1a/1b). Women with meatal stricture, neurogenic bladder, or gynecological, urethral or bladder malignancy were excluded from the study. Data collected included demographics, prior urethral procedures, presenting symptoms, basic urodynamics (non-invasive flow and post-void residual (PVR) by bladder scan), and additional testing as indicated such as voiding cystourethrogram (Figure 2), urethral MRI, and/or multichannel invasive urodynamics. UD was performed with female dilators up to 39-43 French, with guidewire and Heyman dilators when required (Figure 3). Patients were seen at 6 weeks, 3 months, and 6 months after UD and then yearly thereafter. Success was defined as ability to void with no or rare need for clean intermittent catheterization (CIC) after 1 year and without repeat UD. Failure was defined as recurrent LUS requiring repeat UD, chronic CIC, and/or urinary diversion (suprapubic tube).

Results

Between 2000 and 2013, 32 women underwent UD for LUS, with 25 meeting all inclusion criteria. Mean follow-up was 54 months (range: 7 to 151). Fourteen patients were followed for 3-13 years. Mean age was 55 (range 23-86), with mean BMI 29 (20-50) and mean parity 2.38 (0-7). Mean duration of symptoms prior to presentation was 9.4 (0.5-30) years. Presenting symptoms included frequency (n=15), urgency (n=11), hesitancy (n=7), feeling of incomplete emptying (n=7), incontinence (n=8) or recurrent infections (n=13), with 76 % having more than one presenting symptom. Additional testing was obtained with VCUG (n=23), UDS (n=18) or MRI (n=9). Nearly half of the patients had undergone prior dilations, with an equal distribution between the success and failure groups. Following UD, 13 patients had indwelling catheters for a mean of 11 (1-40) days.

The nine women in the success group had significant improvement in mean maximum flow rate (pre: 12.5 ml/sec to post: 16.9 ml/sec) ($p<0.02$) and reduction in mean PVR (pre: 124 ml to post: 24.5 ml) ($p<0.01$). In the failure group of 16 patients, 2 required on going regular CIC for over a year after a single UD procedure while the remaining 14 opted for a repeat UD due to initial symptomatic improvement after the first UD. The mean time between primary and secondary UD was 16 (2-53) months. Of these 14 patients, 7 required more than two UD – the maximum number of UD among our patients was four. After a second UD, 4 of 14 women came off CIC and reported durable satisfactory symptom improvement. Eight remained on CIC daily (n=2), every other day (n=1), three times weekly (n=1), twice weekly (n=3) or monthly (n=1). Two of 14 required placement of a permanent suprapubic catheter.

Interpretation of results

Current literature on long-term outcome of LUS treated with UD is limited, with a few case series that include small cohorts and short follow-up periods. In addition, many practitioners currently perform UD as an office procedure, not under general anesthesia. Our experience with UD under anesthesia produced complete and durable resolution in over a third of our patients, while another fifth achieved satisfactory outcome after a second UD. A history of prior dilations was equally present in both groups.

Concluding message

At a mean follow-up of 4-5 years, UD under general anesthesia as a treatment for LUS in women was found safe and relatively effective.

Figure 1a Centered luminal stricture

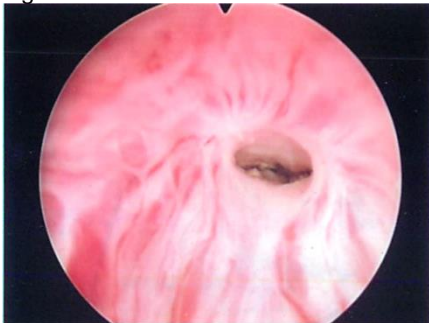


Figure 1b Open urethral lumen after UD

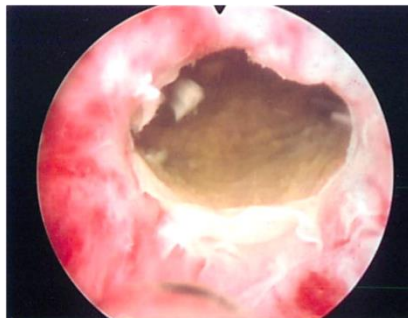


Figure 2. Lateral VCUG view indicating a trabeculated bladder, a ballooned out proximal urethra and bladder neck, and a sharp transition in the midurethra (blue arrow).

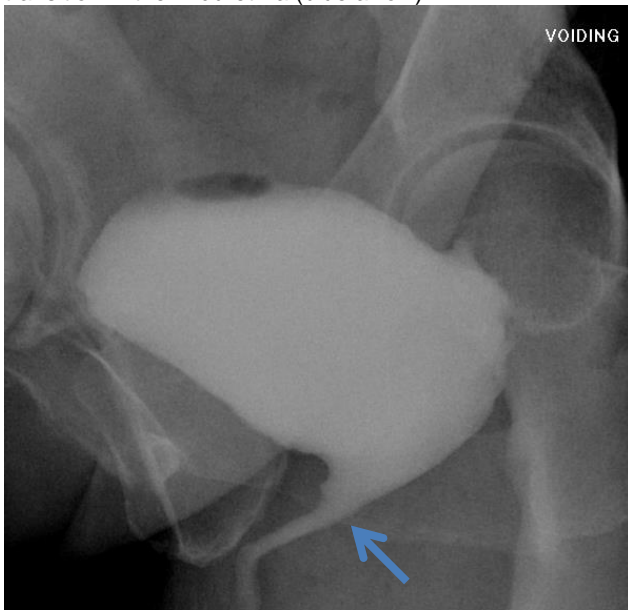
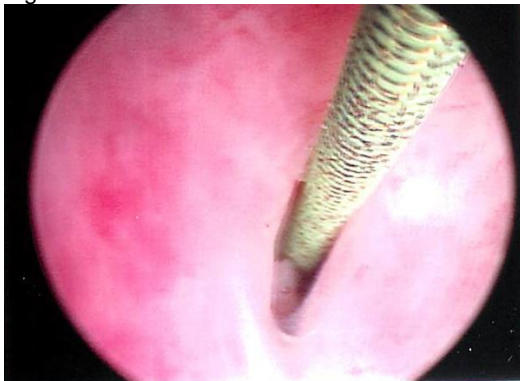


Figure 3



Disclosures

Funding: none **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** University of Texas Southwestern Medical Center Institutional Review Board **Helsinki:** Yes **Informed Consent:** Yes