

Approach to Ureterovaginal Fistula: Examining 13 Years of Experience

Yufan B. Chen, MD¹, Birte J. Wolff, MD¹, Kimberly S. Kenton, MD, MS² and Elizabeth R. Mueller, MD, MSME¹

¹Division of Female Pelvic Medicine and Reconstructive Surgery, Departments of Obstetrics/Gynecology and Urology, Loyola University Chicago Stritch School of Medicine and Loyola University Medical Center, Maywood, IL

²Northwestern University, Chicago, IL

Abstract

Objective: We describe the management and outcomes of ureterovaginal fistulas over a 13 year period and present a treatment algorithm.

Methods: We performed a review of UVF cases between January 2005 to December 2017 at our tertiary academic center. Diagnostic and therapeutic approaches were reviewed and treatment outcomes were assessed.

Results: 19 cases of ureterovaginal fistula were identified. Our primary treatment was ureteral stenting in 12, reimplantation in 6 and one spontaneous resolution. Ureteral stenting was attempted and successful in 11 of 12 patients (92%): 8 were placed endoscopically and 3 (27%) were placed by antegrade percutaneous nephrostomy. After stent placement, all patients had a Foley catheter placed for 2 weeks and stents were left in place for an average of 66 days (27 to 92 days). All 11 patients (100%) who had primary stenting experienced complete resolution of continuous urinary leakage. Complications of stents included pyelonephritis in 2 cases (18%) and stricture in 1 case (9%). Stent related pain and bladder spasms were common complaints and treated with an alpha-1 antagonist and anticholinergic medication. All reimplantations were successful, and 4 (50%) were performed robotically. A variety of follow up surveillance methods were employed, including tampon tests, CT urograms, retrograde pyelograms, and MAG-3 Lasix renal scans.

Conclusions: In carefully selected patients, ureteral stenting results in high cure rates for ureterovaginal fistulas and should be considered first-line therapy. Complicated ureterovaginal fistulas may be best managed by primary ureteral reimplantation.

Table 1

Summary of the characteristics of ureterovaginal fistula cases

Characteristic	Data
Mean age at diagnosis	43.9 years (SD±9.3)
Mean BMI	32.8 kg/m ² (SD±11.1)
Time intervals	
Antecedent surgery symptom onset, median (range)	11 days (2-55 days)
Index surgery to first treatment, median (range)	25 days (4-517 days)
Index surgery to stent placement median (range)	19 days (10-39 days)
Antecedent surgery	
Cesarean section	5% (1/19)
Hysterectomy for benign indication	74% (14/19)
Hysterectomy for GYN cancer	21% (4/19)
Management resulting in cure	
Ureteral stent alone	53% (10/19)
Spontaneous resolution	5% (1/19)
Ureteral reimplantation	42% (8/19)
Ureteroneocystotomy	n=7
Ureteroureterostomy	n=1

Figure 1. Patient management flow diagram

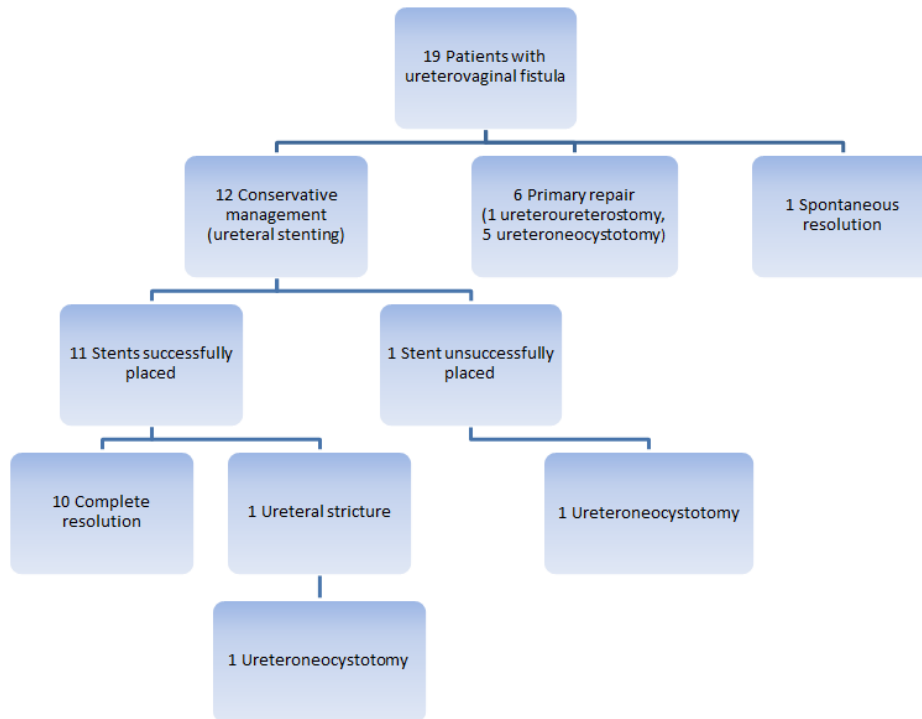
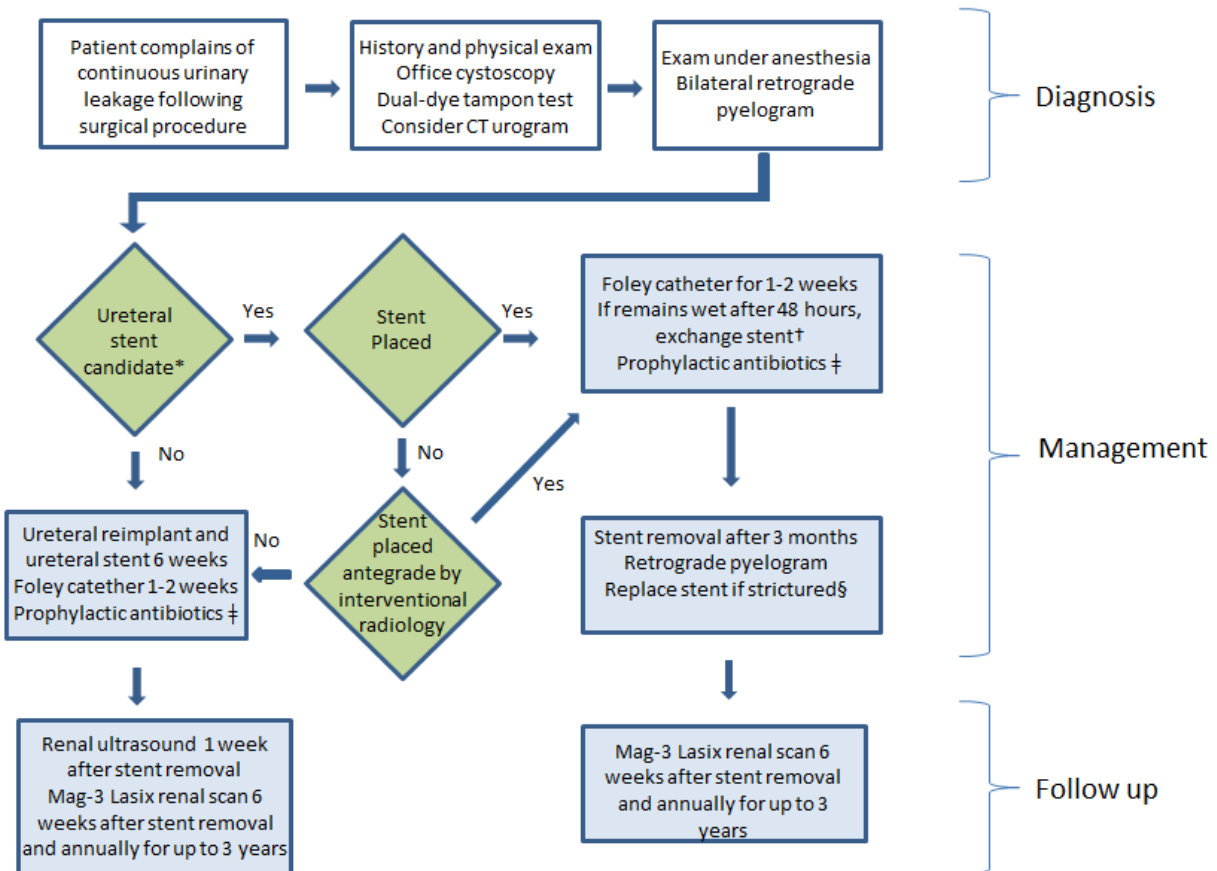


Figure 2. Ureterovaginal fistula management algorithm



*Those without concurrent vesicovaginal fistula, prior ureteral injury, or abnormal ureteral anatomy

† If leakage occurs for more than 48 hours after stent placement, return to OR for stent exchange with 6Fr lumen Double J stent

‡ For pyelonephritis prevention while ureteral stent is in place

§ We repeat retrograde pyelogram in 2-3 months after a second stent. Reimplant ureter if persistently strictured.