

## URETHROVAGINAL FISTULA REPAIR WITH MARTIUS FLAP

### Synopsis of Video

*Technique: Indigo carmine is injected through the urethral catheter to visualize the fistulous opening. A small 10F catheter is inserted through fistula (in some cases dilation with sounds is needed to allow passage). An inverted U incision is made on the anterior vaginal wall, including the fistula tract in the incision. Dissection of the U flap proximally toward the bladder ensures easy coverage of the fistula after repair and dissection of the distal and lateral vaginal walls assists with tension free closure. A horizontal incision is made in the periurethral fascia and fascial flaps are dissected on the proximal and distal sides of the fistula. The fistula tract is not excised; it is closed vertically in a running fashion after removal of the fistula catheter. A second layer of closure, taking deep bites to incorporate urothelium, is performed. A watertight closure is confirmed with injection of indigo carmine. The periurethral fascia is closed horizontally. A Martius flap is harvested in the standard fashion and used to cover the repair. The U shaped vaginal wall flap is advanced over the Martius flap for closure.*

### Hypothesis / aims of study

Urethrovaginal fistulas (UVF) are rare complication of periurethral surgery; successful repair depends on the technique utilized.

### Study design, materials and methods

Retrospective analysis of 4 consecutive years of cases by one surgeon (SR) identified 11 UVF by CPT code. Chart review was performed to assess presenting symptoms, prior surgery and subsequent procedures performed.

### Results

11 UVF repairs were performed in 10 patients over 4 years. Mean patient age was 54 years. All patients complained of incontinence, either continuous or stress. In 100% of our patients we identified either: multiple anti-incontinence procedures {n=5}, urethral diverticulectomy (UD) {n=3} or urethrolisis after obstructing sling {n=2} as the risk factor for UVF. In the UD group, 1 had simultaneous sling placement and presented with obstructive voiding and a fistula, 1 required a repeat UD after which the fistula was noticed, and 1 developed the fistula after initial repair. All 10 patients were referred from outside institutions and 6 had undergone between 1 and 4 attempted UVF repair prior to presentation. In our series there was 1 failure in a patient with obstructed voiding; concurrent urethrolisis was performed with the second successful repair. 5 patients underwent subsequent anti-incontinence procedures.

### Interpretation of results

UVF is the result of iatrogenic injury to the urethra most commonly during repeat sling placement, UD or urethrolisis. Proper urethral anatomy must be understood and respected during these procedures to prevent this complication.

### Concluding message

We recommend simultaneous urethrolisis with fistula repair in the setting of obstructive voiding. Due to risk of recurrence of fistula in the setting of obstruction we do not recommend simultaneous anti-incontinence surgery. Also, it can be difficult to determine preoperatively how much incontinence is due to stress and how much is due to the fistula. 50% of our patients did not require subsequent surgery for continence. We support the use of Martius flap because the urethra wall is often damaged and attenuated from prior surgeries; and unlike the vesicovaginal fistula repairs, there is no redundancy of the urethral wall to incorporate into the closure. We believe that the technique used to repair this injury determines the success; we report a 90% primary success rate in our series using this technique.

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<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>UCLA Office for the Protection of Research Subjects Institutional Review Board</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>No</b>