Revisions of Mid Urethral Slings Can be Accomplished in the Office

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Abbreviations and Acronyms

SUI = stress urinary incontinence

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Purpose: Mid urethral slings occasionally require revision for obstructive voiding symptoms or vaginal extrusion. Our approach has been to offer revision in office or resection done under local anesthesia when the patient is agreeable and deemed an appropriate candidate. The results and complications of these procedures are presented.

Materials and Methods: We retrospectively reviewed the charts of patients from January 2003 to October 2010 to determine the subset with mid urethral sling insertion who subsequently underwent revision in the office or operating room, as identified through the Northwestern Medical Enterprise Data Warehouse. The CPT code for female sling insertion (57288) or revision/removal (57287) was used.

Results: A total of 41 revisions were performed in 28 of the 118 patients (23.7%) who underwent synthetic sling insertion. Reasons for adjustment were an intravesical sling (1 operating room case), extruded vaginal mesh (7 operating room and 19 office) and obstructive voiding symptoms (7 operating room and 7 office). Obstructive voiding symptoms in 6 of 7 operating room and 6 of 7 office patients improved immediately after sling release. There were no complications in either group but 3 office patients required repeat revision in the operating room due to inability to tolerate the procedure in 2 and to nonrelief of symptoms in 1. A total of 13 operating room adjustments were made according to surgeon preference while 2 patients elected the operating room, although adjustment in office was offered.

Conclusions: Sling adjustment due to vaginal mesh extrusion or obstructive voiding symptoms can be successfully performed in the office with good result. When greater adjustment is needed, the operating room may be preferable. Surgeons should make these decisions based on their comfort level and patient preference.

Key Words: urethra; urinary incontinence, stress; suburethral slings; reoperation; ambulatory surgical procedures

Mid urethral synthetic slings, including retropubic and transobturator procedures, are safe and effective options for SUI.[1–3] However, obstructive symptoms or vaginal sling extrusion can occur and require transvaginal revision, which typically necessitates a trip to the operating room. We describe our experience with and outcomes of revision in the office using local anesthesia in our mid urethral sling population as an alternative to operating room revision.

MATERIALS AND METHODS

We retrospectively reviewed the charts of patients from January 2003 to October 2010 to determine the number of patients with synthetic sling insertion and/or subsequent revision, as identified through the Northwestern Medical Enterprise Data Warehouse. We used the CPT code for

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female sling insertion (57288) or revision/removal (57287). Since coding for revision in the office does not identify all instances of revision, the charts of all patients identified as having undergone synthetic sling insertion were reviewed in their entirety to ensure that all revisions were captured. The location of revision (office or operating room), interval from initial insertion to revision, reason for revision, complications and results were recorded and compared.

Since the same surgeon (SK) performed all sling insertions and revisions, intersurgeon variations or differences in operating procedure were avoided. A retropubic sling was placed using the SPARC™ kit, as described by Deval et al.[4] The transobturator procedure was done using the TVT™ Obturator System via an inside-out technique, as described by De Leval.[5] Cystoscopy was performed to verify absent bladder or urethral injury. Vaginal dissection for placement was similar for the retropubic and transobturator procedures.

Before office revision the patient provided consent and received an oral dose of ciprofloxacin or of intramuscular gentamicin, if allergic to ciprofloxacin. Patients were positioned in stirrups on a standard examination table. For retraction the lower half of a disposable, hand held lighted speculum was placed and retracted caudal by an assistant. As required, the labia minora were displaced lateral by the fingers of the assistant. For patients presenting with extrusion of only a few mesh fibers the mucosa underlying this area was anesthetized using 1% lidocaine with epinephrine. The fibers were grasped with a hemostat and transected to the mucosal level. For patients presenting with obstructive voiding symptoms the incision was reopened along the suture line, a hemostat was placed between the sling and periurethral fascia, and the sling was loosened. If this caused discomfort or the sling would not loosen, the sling was incised in the midline. The vaginal mucosa was then closed with a running 3-zero chromic suture.

For late extrusion of a more significant amount of sling the preparation and positioning were similar but the vaginal mucosa was incised circumferentially around the extruded sling. The vaginal mucosa was then dissected off the sling. The sling was grasped with a hemostat and transected as far lateral or cephalad as could be clearly visualized. The vaginal mucosa was closed as described.

No significant bleeding was noted in office cases. Had it occurred, the vaginal mucosa would have been closed, a vaginal pack placed and the procedure aborted.

In the operating room revision was done in a similar manner with the addition of sedation and monitored anesthesia, and the benefit of the self-retaining retractor and suction available in the operating room.

The intervals from sling insertion to initial revision and from mesh extrusion to revision for obstructive voiding symptoms were compared using the 2-sample t test with a general significance level of $p < 0.05$.

RESULTS

A total of 41 revisions were performed in 28 of the 118 patients (23.7%) treated with synthetic sling insertion. Of those who underwent revision 19 had some form of vaginal extrusion (16%) while 11 (9%) experienced obstructive voiding symptoms, although none were in complete urinary retention.

The table lists presenting symptoms in patients who experienced vaginal extrusion, of which the most common was partner pain during intercourse. Average extrusion size was 1.02 cm. Five of the 19 patients presented with only a few fibers extruded, 6 had less than 1 cm extruded and 17 had a greater than 1 cm mesh segment exposed. In all 5 patients with only a few fibers extruded revision was performed in the office.

Patients who presented with de novo voiding symptoms were evaluated by urine culture and adjustment was done within 1 month of sling placement. Since symptoms temporally correlated with sling placement, urodynamics were not performed before release. In no case was the entire sling removed because none were explored due to infection or pain. Thus, complete removal was not deemed necessary.

There were no complications in the 26 office or the 15 operating room revisions. However, 3 office patients required revision in the operating room, including 2 due to inability to tolerate the office procedure (see table). The third office revision was repeated in the operating room due to surgeon preference since de novo obstructive symptoms were not resolved by the original in-office revision. In this patient the incision was reopened along the suture line and the sling was incised in the midline since loosening the sling in office was not sufficient to relieve symptoms. Obstructive symptoms resolved after this operating room revision. No patient who underwent sling revision in the office or the operating room experienced infection or another complication after revision.

Obstructive voiding symptoms improved immediately after sling release in 6 of 7 operating room and

Symptoms of patients with vaginal mesh extrusion, and revisions in office and operating room

	No. Pts (%)
Symptoms:	19
Vaginal bleeding	4 (21.1)
Discomfort during intercourse	3 (15.8)
Partner discomfort during intercourse	8 (42.1)
Vaginal discharge	3 (15.8)
Hematuria	1 (5.3)
General discomfort	4 (21.1)
None	4 (21.1)
No. revisions (location):	28
1 (office)	6 (21.4)
2 (office)	5 (17.9)
3 (office)	2 (7.1)
1 (office), 1 (operating room)	2 (7.1)
2 (office), 1 (operating room)	1 (3.6)
1 (operating room)	12 (42.9)