

Surgical Resection for Suburethral Sling Complications After Treatment for Stress Urinary Incontinence

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Abbreviations and Acronyms

BOO = bladder outlet obstruction
SUI = stress urinary incontinence
TOT = transobturator tape
TVT = transvaginal tape

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Purpose: Suburethral tapes have been widely adopted to treat stress urinary incontinence. Further resection of such tapes may be necessary in certain cases. We review our experience and assess urinary functional outcomes.

Materials and Methods: We retrospectively reviewed the data on all women referred to our institution between 2001 and 2007 for suburethral tape related complications and on those who had the tape surgically removed. Complete or partial resection was achieved after assessment, including endoscopic and urodynamic assessment.

Results: A total of 75 women with a mean age of 60.7 years (range 28 to 78) were included in the study. The tape used was transvaginal in 58 cases (77.3%) and transobturator in 17 (22.7%). There were different complications, such as erosion in 16% of cases, vaginal extrusion in 24%, bladder outlet obstruction in 45%, chronic pelvic pain in 21%, and de novo urinary incontinence and urgency in 12%. Resection was done a mean \pm SD of 33 ± 22 months (range 6 to 80) after tape placement. Of the 58 women with transvaginal tape the tape was completely removed by laparoscopy in 30 (51%). Four of the 17 transobturator slings (23%) were completely removed by laparoscopy (1) and via a low gynecological approach (3). The remaining slings were partially resected via a gynecological approach. At a mean followup of 38.4 months (range 12 to 72) incontinence recurred in 39 women (52%) after partial (18) and complete (21) resection.

Conclusions: In rare women who experience crippling symptoms after suburethral sling implantation urologists must be aware that the decision to completely or partially resect the tape can help resolve symptoms.

Key Words: urethra; suburethral slings; urinary incontinence, stress; complications; prostheses and implants

SUBURETHRAL tapes, ie tension-free TVT and/or TOT, have become the new gold standard treatment for female SUI. Since 1996, more than 1,200,000 TVT procedures have been performed worldwide¹ with a 5-year success rate of greater than 80%.² Although these procedures are minimally invasive, they are currently associated with perioperative complications (bladder perfora-

tion and vascular injury), early postoperative complications (infection and acute urinary retention) and late postoperative complications (bladder outlet obstruction, mesh erosion, chronic pain and de novo detrusor overactivity).³ Starting in 2001 the transobturator approach using TOT and tension-free obturator TVT has been progressively developed to avoid such complications.

This approach appears to be as safe and efficient as retropubic access.^{4,5} Although the incidence of adverse events has decreased, complications are still being reported.⁵ As a result, partial or complete surgical resection of the tape can be done in specific cases to manage complications. To date the number of published studies of surgical management for such complications in the current literature is limited.^{6–8} Therefore, we present our experience with tape related complications that we have had to manage by tape resection.

MATERIALS AND METHODS

We reviewed the files of all women referred between 2001 and 2007 to our department for suburethral tape related complications. All medical charts were retrospectively reviewed to collect certain data, including patient age, body mass index, initial type of incontinence, medical history of previous pelvic support and anti-incontinence procedures, date and type of suburethral tape resection procedure, complications, duration of bladder catheterization and hospital stay, urinary symptoms, continence, pain, outcome and followup. Each clinical evaluation included physical examination, voiding diary, urinalysis, cystoscopy with a 70-degree optical lens and urodynamic assessment with uroflowmetry. When there was chronic pelvic pain, patients were invited to complete the DN4 questionnaire to assess the etiology of undiagnosed neuropathic pain.⁹

Clinical evaluation, impact on quality of life and failure of first line treatment influenced the surgical decision to remove the suburethral tape. The surgical decision to resect the tape was determined by a combination of objective and subjective symptoms (see figure). We performed complete removal in certain patients, including those with previous unsuccessful first line management with the patient then referred to our institution and those with suspected or proven sling infection. Also, our strategy was to entirely remove the tape as soon as pelvic pain and symptoms were triggered by bladder filling during cystoscopy. In these cases it was difficult to accurately estimate the

location of the pain and restrict it only to the suburethral portion. Because pain could be linked to partial or total migration of the tape through the bladder wall or even to a manufacturing fault in the conception of the mesh, we performed complete resection in these cases. In other cases the decision to perform partial or complete resection of the tape was made at urologist discretion.

In all cases of partial tape resection we used a vaginal approach. Perioperative cystoscopy was done systematically as step 1. A middle anterior vaginal wall incision was made centering on the sling location and the vaginal epithelium was dissected lateral. After the sling was identified it was circumferentially dissected and incised in the midline beneath the urethra. The dissection end point was to restore adequate sagittal plane mobility of the urethra. Complete TOT resection always required a second surgical access from the end point of the tape to the internal side of the whole obturator.

For complete resection we used a pure laparoscopic extraperitoneal approach or we performed a combined procedure using a vaginal or laparoscopic approach.

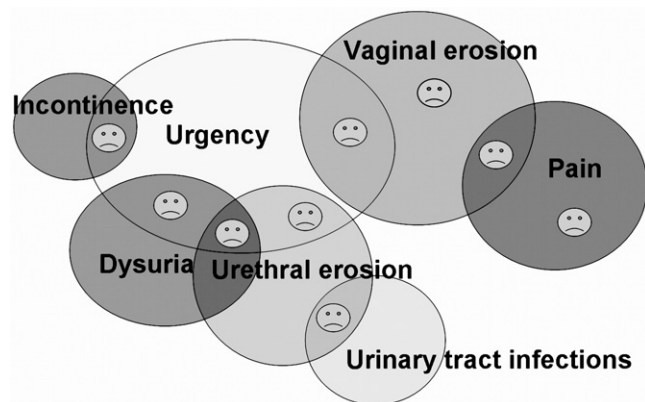
Extraperitoneal laparoscopy was performed with 5 mm trocars and a 10 mm umbilical telescope port with 2 trocars placed medial to the anterior superior iliac spine and 1 placed at the mid point between pubis and umbilicus. Step 1 of dissection consisted of releasing the retropubic space. The primary objective was to identify the 2 half tapes in contact with the pubis, corresponding to their normal path. The half tape was then grasped and drawn downward. The transparietal tract of the tape was dissected by remaining in contact with the tape and by successively crossing the rectus abdominis muscle fibers and fascia. Dissection of the fascia revealed adipose tissue, which could be mobilized without resistance, allowing complete extraction of the transparietal tract. Urethral release was performed medial as far as possible without opening the vagina. The left fingers of the surgeon were placed into the vagina to perform dissection of the remaining part of the mesh located across and/or under the urethra. The 2 entire half tapes were extracted via the 10 mm port. Redon suction was then done in the retropubic space.

Tape fragments were sent for histological and bacteriological examination. When we looked for intravesical erosion, dissection was continued down to the point of entry of the tape into the bladder. The bladder was opened and the mesh was removed with clean margins. Cystotomy repair was performed using interrupted 3-zero polyglactin suture.

Perioperative data were reviewed, especially for laparoscopic approaches, including mean operative time, organ injury and conversion to open surgery. All patients were seen 1, 3, 6 and 12 months after surgery and yearly thereafter to assess the functional outcome. We focused on the resolution of functional disorders and on recurrent SUI.

RESULTS

Overall 75 women with a mean \pm SD age of 60.7 ± 12 years (range 28 to 78) were included in analysis. Median body mass index was 27 kg/m^2 (range 23 to 31). The tape used was TVT in 58 cases (77.3%) and



Combination of symptoms leading to surgical suburethral tape resection in women after treatment for SUI.

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