Severe Thigh Abscess Two Years after Transobturator Sling Operation

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Objectives: Tension-free vaginal tape has gained large popularity owing to the ease of the procedure and its effectiveness. These procedures were initially thought to rarely involve any significant morbid complications. The transobturator tape (TOT) procedure reproduces the natural suspension similar to the tension-free vaginal tape with a reduction in potential bladder, bowel, and vascular complications by the retropubic approach. However, the TOT procedure is not risk-free when improperly performed. We report a rare case of abscess formation after TOT.

Methods: A 45-year-old woman was admitted to the orthopedic department with the chief complaint of right side thigh pain and swelling. Pelvis MRI showed abscess formation and inflammatory changes extending into the soft tissues and muscles between the right gracilis and adductor femoris. During incision and open drainage, the remnant mesh could not be located. On urologic consult, the pelvic examination located the remnant mesh to the right upper vaginal wall. Our patient underwent excision of the mesh material.

Results: She had significant improvement of the leg pain and was discharged home in good condition on postoperative day 7. Ultimately, the treatment for this complication was the removal of the mesh.

Conclusion: Treatment for thigh abscess after TOT was the removal of the mesh. All patients should be counseled about this potential complication.

Key words stress urinary incontinence, tension-free vaginal tape, thigh abscess

1. INTRODUCTION

Stress urinary incontinence (SUI) is a highly prevalent disorder that has been estimated to be among the top 10 medical problems of adult women. Although not a life-threatening disease, SUI may seriously damage the physical, psychological, and social wellbeing of the affected patients. Since the first reports from Ulmsten and Petros, several procedures have been proposed for the surgical treatment of SUI. Mid-urethral tension-free vaginal tape (TVT) has gained large popularity owing to the feasibility of the procedure and its effectiveness; it has become the standard minimally invasive operation in many countries for SUI. Good short- and long-term cure rates, varying between 84 and 95%, have been reported.

Currently, it is estimated that more than 1 million procedures have been performed worldwide. The transobturator technique was developed to avoid serious bladder, bowel, and vascular complications with the retropubic approach; where the tape would be passed from the lateral side of the obturator foramen on each side to support the mid-urethra, thus sparing the retropubic space. The present randomized trial showed minimal differences in complications and success rates when identical tapes were placed suburethrally either by the retropubic or the obturator route. The transobturator techniques are thought to minimize the risk of serious complications without compromising the excellent short-term cure rates. Although a transobturator approach may reduce potential severe injury, the transobturator tape (TOT) procedure is not risk-free if improperly performed. Here, a rare case of abscess formation is reported after TOT.

2. CASE REPORT

A 45-year-old woman was admitted to the orthopedic department with the chief complaint of right side thigh pain and swelling. The patient had a history of a TOT sling placement in April 2006 by a surgeon specializing in gynecology. The patient had vaginal discharge that began approximately 2 months ago in March 2008. The patient's surgeon noted mesh erosion on examination of the vagina and attempted to treat the patient by excising the protruding segments of the mesh; however, the remnant tape could not be completely removed. The vaginal discharge improved; however, 6 weeks later, right inner thigh pain and erythematous swelling occurred and the symptoms persisted for 2 weeks. In May of 2008, the patient presented to the orthopedic department and was

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finally admitted to the hospital with a presumed cellulitis. The patient denied voiding symptoms such as dysuria and frequency. The physical examination showed that the patient was afebrile and hemodynamically stable with a normal white blood cell count and urinalysis. Right medial thigh tenderness and induration was observed. The lower limb neurological examination was grossly normal except for reduced right lower extremity flexion and internal rotation. The muscle strength and sensation were intact in both lower extremities. On admission day 1, an abscess pocket was noted on ultrasonography and aspiration drainage was attempted by sonographic guidance. The purulent discharge was brownish and the staining confirmed Streptococcus. Because of only minimal improvement in the thigh pain after treatment with the appropriate antibiotics, MRI was performed. The T2 weighted pelvis MRI showed abscess formation and inflammatory changes extending into the soft tissues and muscles between the right gracilis and adductor femoris. A sinus tract that extended from the abscess to the vagina was suspected (see Fig. 1). Therefore, incision and open drainage under general anesthesia was planned. The abscess was thoroughly resected and antibiotic solution irrigation was performed; however, the remnant mesh could not be located (see Fig. 2). After the procedure, a surgical drainage tube was placed and continuous discharge from the site was drained.

A urologic consultation was obtained. The pelvic examination located the remnant mesh to the right upper vaginal wall; a vaginal exploration was performed. The patient was taken to the operating room for tape excision. At first, we performed urethrocystoscopy, but no significant finding was observed. The same vertical vaginal incision was used as for the prior TOT operation. During the lateral dissection, a tunnel was formed using the index finger and direct access of the obturator foramen was obtained. The tip of the right arm remnant mesh was felt and gentle traction was placed on the exposed mesh. The tip of the TOT mesh was extracted with further dissection and completely removed. The area was irrigated with antibiotic solution and two layer primary closure.

The patient was treated with broad-spectrum intravenous antibiotics and was clinically stable throughout the hospital course after removal of the infected mesh. The mesh cultures were consistent with streptococcal infection. On postoperative day 2, the patient showed significant improvement of the leg pain and ability to ambulate, so the surgical drain in the thigh was removed. By day 7, the patient reported almost complete resolution of the symptoms. After an uneventful hospital course, the patient was discharged on postoperative day 10. The patient remained continent for 6 months free of related symptoms despite removal of the mesh material and did not need any further treatment.

3. DISCUSSION

Following the initial report on a new surgical procedure to treat SUI, the TVT gained worldwide recognition owing to its minimally invasive technique and high success rates. It has become the standard minimally invasive procedure at many centers. The TOT procedure was first described in 2001 as a minimally invasive alternative to traditional sling procedures for the treatment of SUI. A polypropylene mesh tape is introduced by the tunneller and passed through the obturator membrane through the vaginal incision. Needle passage through the space of retzius is minimized compared to the traditional sling procedures, possibly reducing the risk of bladder perforation. The TOT procedure reproduces the natural suspension of the urethra through the obturator and puborectalis muscles, and is considered to be a procedure with low morbidity.

Complication rates following placement of the TVT are usually considered to be low. With regard to the intraoperative complications, bladder perforations have been reported to occur in 2.5–11.7% of cases, whereas significant bleeding is less common (0.5–2.5%). Postoperative complications include urinary tract infections...
and/or bladder erosions (0.6–5.4%). With regard to major complications, bowel, vascular, and nerve injuries, necrotizing fasciitis, ischiorectal abscess, sepsis, and death have been reported after placement of retropubic and transobturator tapes. However, such major complications are extremely rare; they only accounted for 86 major complications (0.7%) in a review of more than 11,800 published cases. Although the transobturator approach reduces potential bladder, bowel, and vascular injury, the TOT procedure is not risk-free when improperly performed. A meta-analysis of the literature on incontinence with surgical procedures using synthetic slings identified a 0.7% rate of vaginal erosion, while the rate of urethral erosion was greater at 2.7%. In the case reported here, minimal vaginal erosion was observed on physical examination.

Nilsson et al. reported in a recent paper of an 11-year follow up on the durability of the effectiveness in the TVT procedure on 69 patients showed by Patients Global Impression (PGI) that 77% (53/69) of patients regarded themselves as cured, 20% (14/69) as improved, and 3% (2/69) thought the treatment had failed. On the other hand, in a recent trial by Jacquetin et al. a 13.7% complication rate was reported in 146 patients, including two cases of vaginal erosion (1.4%) and three cases of groin pain (2.1%). Similar to our case, Game and Mouzin reported a case of an infected obturator hematoma that presented with leg pain after the TOT procedure. His case illustrated that as with the TVT procedure, urethral erosion and infected hematoma can complicate the TOT procedure. Involvement of abscess in obturator internus and adducents muscles of the left thigh was also reported.

In a prospective multicenter study performed in France in 2003, 183 women with SUI underwent the TOT procedure. At the 1-year follow up, 80.5% of the patients were completely cured and 7.5% showed improvement. The overall perioperative complication rate was 2.2% with no vascular, nerve, or bowel injury. There was no report of any patients complaining of thigh pain, cellulitis, or myositis. However, in a recent trial reported by Jacquetin et al., a 13.7% complication rate was reported in 146 patients, including two cases of vaginal erosion (1.4%) and three cases of groin pain (2.1%). Similar to the case reported here, Game and Mouzin reported a case of an infected obturator hematoma that presented with leg pain after the TOT procedure; this case illustrated that as with the TVT procedure, urethral erosion and an infected hematoma can complicate the TOT procedure. Abscess formation in the obturator internus and adducents muscles of the left thigh was also reported.

Like all synthetic sling materials, the risk for erosion and resulting ascending infection from contamination exist with the TOT. Therefore, emphasis has been placed on the use of mesh materials with pore sizes greater than 75 μm to allow for the migration of macrophages and leukocytes, thus reducing the risk of infection and improving tissue ingrowth. The reasons for infections associated with mesh materials include rejection of the tape material by the host tissue, lack of tissue incorporation, ingrowth secondary to weave and porosity characteristics, superimposed infection, and possibly, inappropriate closure or insertion techniques. In the case presented here, the mesh used in the TOT procedure was IRIS-TOT (Dow medical, Seoul, Korea); it had a 1.0 mm pore size made of monofilament polypropylene mesh. Ultimately, the treatment for infections that develop after sling surgery is removal of the mesh along with antibiotics. In the presence of an infection associated with a sinus tract and abscess, the TOT mesh should be completely removed and the sinus tract excised along with debridement of any necrotic tissue. Although the tape was removed with relative ease in this case, the promotion of fibrosis and tissue growth through the mesh may seriously hinder removal of infected synthetic materials.

We cannot conclude for sure whether the abscess was secondary to a surgical procedural fault or the problem of the mesh material used. The site of infection can be clarified by the course of TOT tunneller through the anatomical structures related to procedure. In conclusion, the TOT requires a meticulous antiseptic technique. In this case, septic cutting of the remnant mesh was thought to be a factor in the development of infectious complications. All patients should be counseled about this potential complication.

Disclosure

This study was carried out without any commercial sponsorship.

This material has not been published previously, and will not be submitted for publication elsewhere.

REFERENCES


