

## Case reports

# Suprapubic-assisted cystoscopic excision of intravesical tension-free vaginal tape

Ahmed Al-Badr, MBBS, FRCS(C), and Khalid Fouda, MBBS, FRCSI

*From the Department of Obstetrics and Gynecology (Dr. Al-Badr), and the Division of Urology, Department of Surgery (Dr. Fouda), Security Forces Hospital Program, Riyadh, Kingdom of Saudi Arabia.*

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Tension-free vaginal tape;  
Bladder penetration;  
Mesh

**Abstract.** We report on a 56-year-old woman with irritative voiding symptoms, which started 4 months after undergoing a TVT procedure for stress incontinence (SI). Evidence of the mesh coming through the left bladder wall did not emerge until cysto-urethroscopic examination 2 years after surgery. Excision was done via transurethral cystoscopy with the aid of endoscopic scissors placed through a 5-mm suprapubic port inserted into the dome of the bladder, thus avoiding laparotomy.

A Foley catheter was left in for 3 days, and after removal, the patient's symptoms disappeared almost completely.

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Tension-free vaginal tape (TVT) is an increasingly used anti-incontinence procedure in the treatment of stress incontinence (SI).<sup>1–4</sup> Despite the low complication rate,<sup>1–4</sup> unrecognized bladder penetration or mesh erosion remains problematic for both the patient and the treating physician. When identified postoperatively, excision has been reported through a cystotomy using a laparotomy incision.<sup>5,6</sup>

## Case report

A 56-year-old, gravida 10, para 10 woman came to our urogynecology clinic with irritative voiding symptoms of pelvic pain, dysuria, frequency, and urgency; all of which began approximately 4 months after undergoing a TVT procedure for SI 2 years earlier at a different hospital. Cystoscopy at the time of the procedure reported no bladder

penetration. In addition to the irritative voiding symptoms, she also reported SI with a full bladder and several documented urinary tract infections, which occurred 3 to 4 months apart. She did not have any obstructive symptoms such as slow stream, straining to micturate, or sensation of incomplete bladder emptying. She was postmenopausal and was not using hormonal therapy. She had no significant medical or surgical history apart from the TVT procedure. She had an abdominopelvic ultrasound and an intravenous pyelogram, which were both reported as normal. Because of the persistence of her symptoms, she underwent a second diagnostic cystoscopy 1 year after the TVT procedure, which was reported as normal. At that time, the urethra was dilated using a size 9 Hegar's dilator, which did not alleviate her symptoms.

Her general and abdominal examinations were unremarkable. Pelvic examination demonstrated urine leakage upon cough in supine position with a full bladder. The vagina overlying the TVT was not tender, and there was no evidence of vaginal mesh erosion. There was no pelvic organ prolapse. Urine analysis showed microscopic hematuria. Uroflow study showed a normal pattern, and her post-void residual urine volume was 10 mL.

Corresponding author: Dr. Ahmed Al-Badr, Department of Obstetrics and Gynecology, Security Forces Hospital Program, PO Box 231244, Riyadh, Kingdom of Saudi Arabia 11321.

E-mail: ahmed@albadr.com

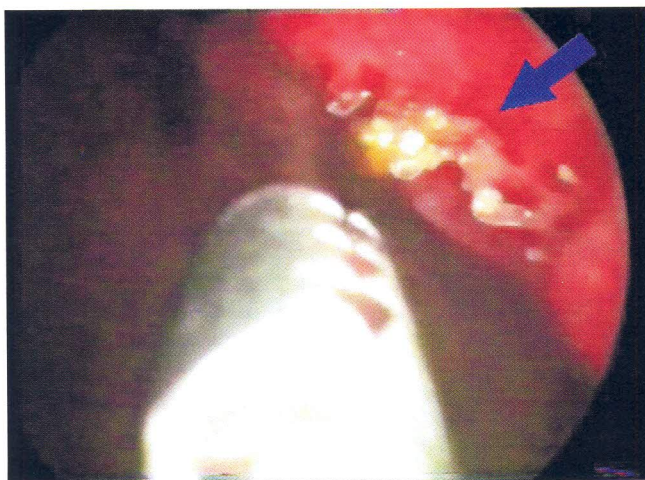
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**Figure 1** Tension-free vaginal tape mesh penetrating bladder wall with calcifications and debris. White arrow points to mesh.

A trial of vaginal estrogen creme did not alleviate her symptoms. Cysto-urethroscopic examination 2 years after surgery revealed TVT mesh coming through the left bladder wall (Figures 1 and 2), with calcifications and debris around the tape. An initial attempt to remove the tape was unsuccessful because of difficulty cutting the polypropylene mesh using the cystoscopic scissors. After insufflating the bladder with CO<sub>2</sub> gas, a 5-mm disposable laparoscopic port was introduced in the right paramedian suprapubic area into the dome of the bladder under direct vision. An endoscopic scissors was introduced through that port; and with the aid of a cystoscopic grasper the mesh was excised from the entrance and exit into the bladder mucosa. The port site was left without closure, and a transurethral size 20 Foley catheter was left in for 3 days until the urine was clear of blood. The patient's symptoms disappeared almost completely by the time the



**Figure 2** Tension-free vaginal tape mesh penetrating bladder wall after clearing calcifications and debris. Blue arrow points to mesh.

catheter was removed, and her SI continued without worsening.

She continued to be asymptomatic when seen 6 weeks later, and cystoscopy revealed a healed mucosa with no obvious scarring or mesh.

## Discussion

With the widespread use of the TVT procedure for the treatment of SI, we steadily gain more knowledge about success rates and complications. Intraoperative bladder penetration, a recognized complication of TVT, has been reported in 4% to 12% of patients.<sup>4,5,7</sup> Late recognition of tape penetration is rarely seen and has been excised by cystotomy using a laparotomy incision.<sup>5,6</sup>

In the patient described in this article, it is believed that the penetration occurred during the TVT placement rather than a late mesh erosion, despite two "negative" cystoscopies. Early postoperative irritative urinary symptoms and recurrent urinary tract infections, along with calcified and encrusted mesh, support this view. When recognized later, removal of the intravesical part of TVT may be difficult using a cystoscope by itself, because of the need for a second instrument to stabilize the mesh for transection. The use of intravesical laparoscopic instruments was described previously for percutaneous suprapubic cystolitholapaxy.<sup>8</sup> With the use of a laparoscopic port under cystoscopic vision, excision of intravesical TVT proved in this case to be quite useful, avoiding a laparotomy with its potential complications.

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