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## TVT erosion secondary to a twist in tape

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**Abstract** Mesh erosions through vaginal mucosa as well as the urethra following TVT procedures have been reported but are rare. We report a case of a 50-year-old woman who was found to have mesh erosion through vaginal mucosa 8 weeks after her TVT procedure, apparently secondary to a twist in the tape. Excision of approximately 5 mm of tape encompassing the twist was accomplished without difficulty, and allowed for complete healing of the vaginal mucosa and resolution of the patient’s pain and irritative voiding symptoms.

**Keywords** Complications · Erosion · TVT · Urinary stress incontinence

**Abbreviations** TVT: Tension-free vaginal tape

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### Case report

The patient, a 50 year-old woman, was referred to our center for evaluation of mesh erosion through the vaginal mucosa 8 weeks after a TVT procedure as an outpatient at another hospital. Review of the patient’s records revealed that she underwent the procedure initially without complications. She was discharged with a Foley catheter following the procedure and returned on the second postoperative day, at which time she successfully passed a voiding trial.

The patient then returned 1 week later complaining of mild urgency, frequency and dysuria, and was treated for suspected urinary tract infection with a sulfonamide antibiotic. A urine culture apparently was not obtained.

A week later the patient returned again with some improvement in her symptoms, but was switched to nitrofurantoin because of the presence of nitrites on the urine dipstick. Again, urine culture was not obtained. The patient returned again 6 days later complaining of postvoid fullness, hesitancy, and ongoing frequency. She was then placed on a fluoroquinolone. Urine was sent for culture and proved negative. She was then seen 5 days later with improvement in her symptoms according to documentation in her records. The patient was next seen 9 days later for a scheduled visit, 5 weeks after her surgery. Her examination revealed well-healed mucosa and she was placed on anticholinergics for continued irritative voiding symptoms and right-sided pubic discomfort.

The patient then began to experience severe abdominal cramping and diarrhea, for which she presented to an emergency room. Her symptoms were ultimately attributed to *Clostridium difficile*, which required treatment by a gastroenterologist.

The patient returned to the office 7 weeks after the TVT complaining of a ‘knot’ on the right side of her vagina and ongoing irritative voiding symptoms. A small area of exposed mesh was noted on the right side lateral to the midurethra and the patient was placed on vaginal estrogen cream. She was asked to return in 4 weeks.

At this point, the patient was referred to our center for a second opinion and evaluation. On examination a palpable ridge was noted at the erosion site approximately 3 cm lateral to the right of the midurethra, which felt consistent with a twist in the tape. An attempt to excise this portion of the tape in the office was unsuccessful owing to patient discomfort.

In the operating room, vaginal mucosa surrounding the erosion was undermined. About 5 mm of mesh was excised, encompassing what appeared to be the twist in the tape. Complete division of the tape occurred and the vaginal mucosa was reapproximated. Three hours postoperatively the patient voided without difficulty and reported that her right-sided vaginal and suprapubic

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discomfort had resolved. Three weeks following the excision procedure, she remains dry and her irritative voiding symptoms have completely resolved.

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## Discussion

The TVT sling procedure has become widely accepted and performed for female stress urinary incontinence since initially being described by Ulmsten et al. in 1996 [1]. Long-term subjective and objective cure rates are reported to be 82%–85% [2, 3]. Complications in these studies have been infrequent, but include bladder perforation, hematoma formation, urinary retention, detrusor instability and urinary tract infection.

Vaginal erosions by the tape have been very rare, reportedly at 0.05% [4]. To our knowledge there are only three published reports of urethral erosions, the most recent of which was described by Vassallo et al. [5]. Perhaps one reason that erosions are rare is that the loose weave design of the Prolene mesh allows for rapid tissue ingrowth through and through the graft.

In this case, a twist in the mesh apparently led to vaginal erosion. The twist was palpable and prevented the sling from lying flat between tissue planes. It is possible that slight rotations or twists in the tape occur with some

frequency but are not clinically manifested if the rotation occurs above the level of the urogenital diaphragm. Twists below this level, however, are likely to cause either a delay in healing or erosion through overlying or underlying tissues. When encountering patients with vaginal mucosal erosions following TVT, careful palpation of the urethra and periurethral tissues for possible ridges or twists in the tape should be performed.

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## References

1. Ulmsten U, Henriksson L, Johnson P, Varhos G (1996) An ambulatory surgical procedure under local anesthesia for treatment of female stress urinary incontinence. *Int Urogynecol J* 7:81–86
2. Nilsson CG, Kuuva N, Falconer C, Rezapour M, Ulmsten U (2001) Long term results of the tension-free vaginal tape (TVT) procedure of surgical treatment of female stress urinary incontinence. *Int Urogynecol J* 12(Suppl 2): S5–8
3. Rezapour M, Ulmsten U (2001) Tension-free vaginal tape (TVT) in women with recurrent stress urinary incontinence- a long term follow-up. *Int Urogynecol J* 12(Suppl 2): S9–11
4. Meschia M, Pifarotti P, Bernasconi F et al (2001) Tension-free vaginal tape: analysis of outcomes and complications in 404 stress incontinent women. *Int Urogynecol J* 12(Suppl 2): S24–27
5. Vassallo B, Kleeman S, Segal J, Karram M (2003) Urethral erosion of a tension-free vaginal tape. *Obstet Gynecol* 101:1055–1058