

A “never event” in mid-urethral Trans obturator tape (TOT) for stress incontinence

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Introduction

The trans obturator tape (TOT) mid-urethral sling procedure has been a surgical option for women with genuine stress urinary incontinence. However, in certain countries, it has been associated with medical litigation due to its complications. Tape erosion into the bladder with stone formation after a few years is a rare complication.

Case report

A 64-year-old woman with mixed stress and urge incontinence underwent TOT procedure at a gynaecological unit by a trainee with a seemingly uncomplicated procedure and uneventful recovery. She was asymptomatic and after 6 years presented to a urological unit with irritative lower urinary tract symptoms. She also had a recurrence of mixed urinary incontinence for 3 months associated with episodic haematuria devoid of infective features. Her X-ray and ultrasound (US) of KUB revealed an immobile large bladder calculus. (Figure 1) Non-contrast CT-KUB confirmed the diagnosis of an atypical bladder calculus.

Cystoscopy demonstrated a large stone eroding through the lateral bladder wall and extending across the trigon. Ureteric orifices were distorted and displaced. Cystolithotripsy exposed a polypropylene mesh which had eroded and protruded through the left lateral bladder wall. Subsequently, the stone was fragmented and the mesh was resected with electrocautery. (Figure 2)

Discussion

Bladder calculi are rare in females and account for 5% of all cases. Presence of foreign bodies within the bladder is a known aetiological factor for vesicolithiasis. Eroded polypropylene tape acting as a nidus has been described during transvaginal tapes (TVT) vertically fixed to the abdominal wall as the needles carrying the tape travel lateral

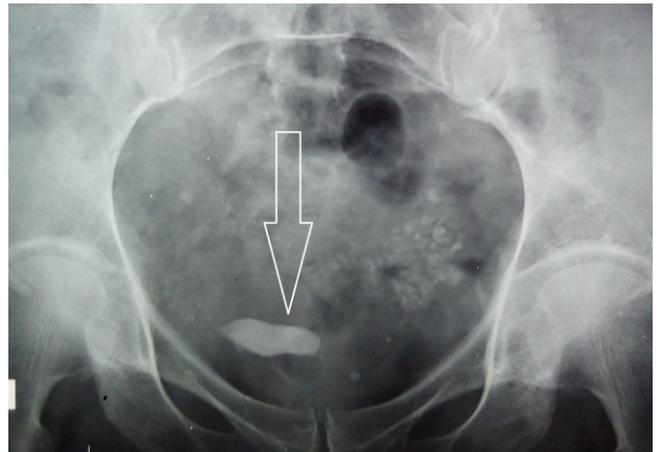


Figure 1. The plain radiograph showing a large bladder stone (white arrow)

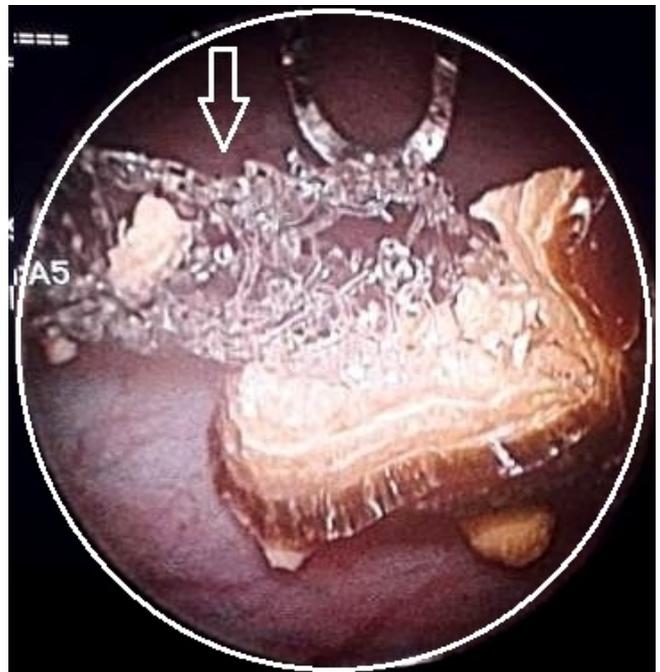


Figure 2. Eroded polypropylene tape (white arrow) surrounded by the stone.

to the bladder wall. However, with the technique of transobturator approach, the tape is placed at the mid-urethral level and the tape is placed more horizontally through the obturator fossa making bladder injury extremely rare in experienced hands. In a meta-analysis of 1854 cases, bladder

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perforations occurred in 0.2 % during TOT (1). Bladder erosion could occur when the tape is placed more proximally at or above the bladder neck by less experienced operators. The present case is unique in the sense that the patient presented after several years with recurrence of symptoms due to a secondary bladder stone.

It is also important to note that radiological investigations may not help pinpoint the exact aetiology of the stone in this situation.

Endoscopic lithotripsy combined with electro-resection is a successful option for such bladder stones (2, 5). In the presented case the stone was crushed with the pneumatic lithotripter and the mesh resected with electrocautery. Resection of an intravesical portion of the mesh has been recommended in the literature. The Holmium laser would be another option (3). If endoscopic management is not feasible in case of a larger and more adherent stone with a risk of bladder perforation, open vesicolithotomy and bladder repair or even partial cystectomy has been carried out by some authors (4).

While direct perforation of the bladder during TOT compared to TVT during the needle insertion is extremely unlikely due to technical reasons, subsequent mesh erosion is a more likely explanation. The place of cystoscopy at the end of the procedure in cases of suspected bladder injury associated with post-procedure haematuria or bleeding per urethra is well accepted but not recommended routinely following TOT due to the extremely low incidence of bladder injury (5).

The prevention of this complication depends on proper training of the technique of correct TOT tape placement, a high degree of suspicion in bladder perforation especially in TVT procedures associated with pelvic floor prolapse, and prompt cystoscopic confirmation and rerouting of the tape.

Tape erosions are prevented by proper anatomical (mid-urethral) placement and avoidance of over dissection of the urethral tissue during urethral exposure.

Conclusion

The TOT procedure can rarely be complicated with tape erosion and subsequent bladder stone formation. In most instances, they can be managed with endoscopic interventions. Proper surgical technique and a high degree of suspicion of bladder injury could prevent this complication.

All authors disclose no conflict of interest. The study was conducted in accordance with the ethical standards of the relevant institutional or national ethics committee and the Helsinki Declaration of 1975, as revised in 2000.

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Learning Points:

- Formation of bladder stones is extremely rare as a complication of TOT procedure because its anatomical placement, compared to its counterpart TVT.
- Meticulous mid urethral placement of the tape could prevent this complication.
- In most instances this complication can be managed with standard endourological interventions without resorting to open surgery.