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ORIGINAL PAPER

Bladder erosion of tension-free vaginal tape presented as vesical stone; management and review of literature

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Abstract The vesical stone formation due to intravesical mesh erosion of tension-free vaginal tape (TVT) is rare. In this report, a case of 48-year-old patient who underwent (TVT) elsewhere is discussed. The patient was presented with vesical stone and persistent stress urinary incontinence. Intravesical stone was detected by non-contrast computed tomography and cystourethroscopy. Stone fragmentation was done by pneumatic lithotripsy and transurethral resection of the mesh was performed. The postoperative control cystoscopy demonstrated complete healing of bladder mucosa.

Keywords Bladder erosion · Tension-free vaginal tape · Vesical stone

1 Introduction

Tension-free vaginal tape is common procedure for the treatment of stress urinary incontinence. It is minimally invasive technique with a short operative period, rapid recovery and superior cure rate. We report a case of bladder erosion presented as vesical stone over the eroded mesh with persisted stress, urinary stress incontinence and we describe successful endoscopic management of the intravesical propylene mesh.

2 Case report

A 48-year-old woman who had stress urinary incontinence and was treated by tension-free vaginal tape 1 year before presentation. She was referred to us with persistent stress urinary stress incontinence since the early postoperative period. Gynecological examination revealed urethral hypermobility with grade III cystocele. Computed tomography showed bladder stone fixed to right bladder wall (Fig. 1). The patient underwent cystoscopy, which demonstrated encrustation over the eroded polypropylene material within the bladder which was successfully fragmented by pneumatic lithotripsy (Fig. 2). The standard transurethral resection of the mesh and surrounding bladder mucosa was performed (Fig. 3a). The operative time was 20 min. The patient was discharged on the first postoperative day. Two months later, control cystoscopy revealed complete healing of bladder mucosa

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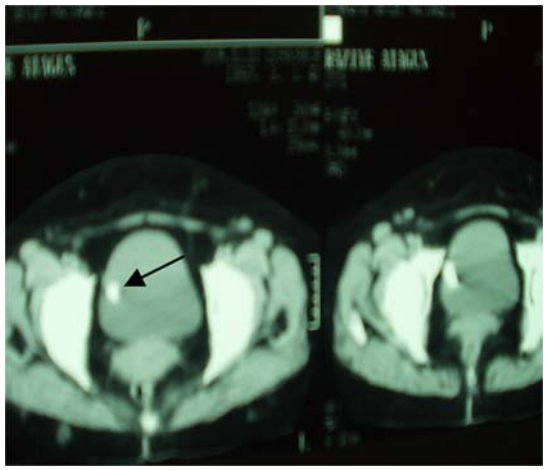

Fig. 1 Computed tomography shows bladder stone indicated by arrow

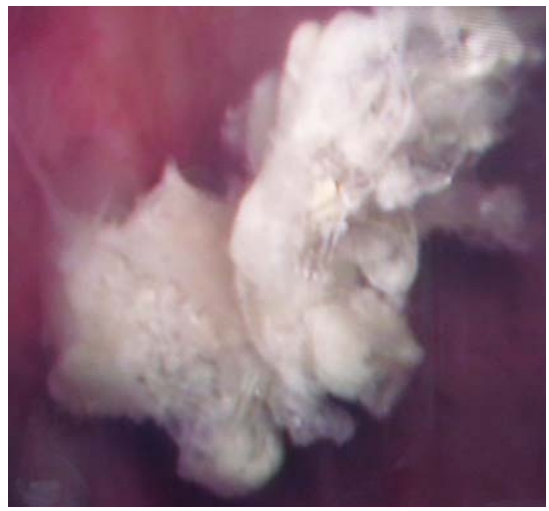

Fig. 2 Intravesical part of the mesh after the fragmentation of the bladder stone

(Fig. 3b) and Placard-shaped in situ vaginal wall sling techniques was used as anti-incontinence surgery [1].

3 Discussion

The suburethral sling using tension-free vaginal tape (TVT) has become a popular choice for the treatment of stress urinary incontinence since its original introduction by Ulmsten in 1996 [2]. Although TVT procedure is simple and minimally invasive procedure there are many serious complications such as bowel perforation, retropubic hematoma, venous injury, and tape erosion [3–7].

In our case, after the endoscopic fragmentation of the stone the, cauterization and resection of the mesh with adherent bladder mucosa at the upper part of right bladder wall was performed. To avoid bladder perforation during the procedure, the coagulation and resection was carried out carefully throughout deep muscularis layer (Fig. 3a) and full vesical distention was avoided. The Foley's catheter was left for long period (7 days) to allow for healing of bladder mucosa over the mesh.

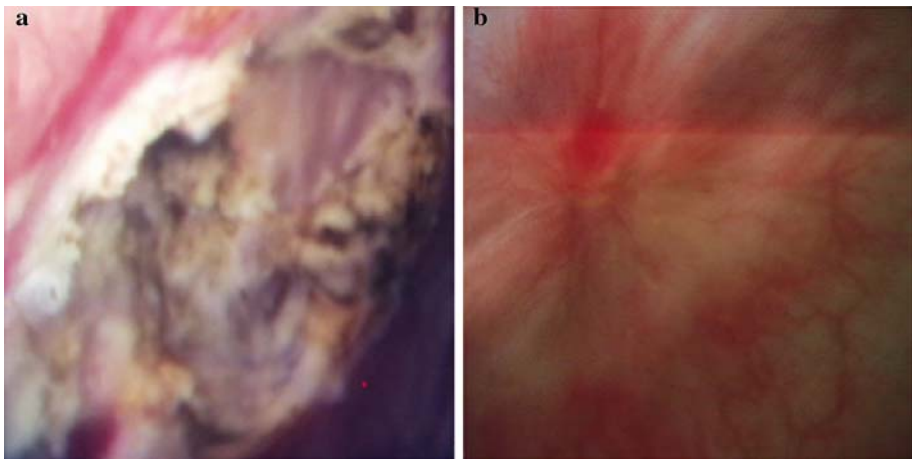

Fig. 3 (**a**) Endoscopic view after transurethral resection of the eroded mesh and surrounding bladder mucosa; (**b**) complete healing of the bladder mucosa after 2 months of resection

In addition to the possibility of the transvesical and intramural placement of the tape during the original procedure, it is postulated that the high abdominal pressure and the near passage of the unbraid tape to the bladder wall may facilitate the erosion of the tape. Owing to the paucity of the data on mesh erosion there is no consensus regarding the ideal method of mesh removal and subsequent surgical correction. In the majority of reported cases open surgery with complete or partial removal of the mesh was the preferred treatment modality [3–5, 7, 8]. However, recently successful endoscopic managements of the bladder perforation by the mesh were reported in three cases [6, 9, 10]. Recently Baracat and his colleagues reported successful endoscopic management of 11 cases of vesical and urethral erosion of the mesh. Therefore we believe that the endoscopic management of the eroded mesh should be the first choice of therapy, and if it failed open surgery can be tried. In our case, when the complete healing of the bladder mucosa was observed in the postoperative period, the anti-incontinence surgery was carried out.

In conclusion, careful and comprehensive urethrocystoscopy is mandatory during TVT procedure. The persistence of stress urinary incontinence or lower urinary tract symptoms after TVT requires paying attention to the possibility of the bladder or urethral erosion by the mesh. The optimum method of mesh excision remains to be determined.

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