Clinical Study of Combined Endoscopic And Percutaneous Management of a Late Complication Following Tension-free Vaginal Tape (TVT) Anchored Stone for Female Stress Urinary Incontinence

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Abstract

TVT is a simple and less-invasive variation of the suburethral sling with higher success rates[1]. It has been rapidly gaining popularity worldwide but it has also lead to increasing number of patients presenting with associated complications. Bladder erosion through the bladder wall occuring predominantly within the first 2 years the placement of TVT is producing tension or in the close proximity of the bladder..Formation of a calculus in the urinary bladder secondary to an intravesical mesh erosion is relatively infrequent rare and delayed complication.Owing to the scarcity of the data on mesh erosion there is no consensus regarding the ideal approach to remove the mesh Combined endoscopic and percutaneous approach should be opted as the preferred approach .Open surgery should be opted only if minimal invasive approach fails.

Keywords *: stress urinary incontinence , sling surgery ,stone, endo urology*

Introduction

TVT is a simple and less-invasive variation of the suburethral sling with higher success rates[1]. It has been rapidly gaining popularity worldwide but it has also lead to increasing number of patients presenting with associated complications.Bladder erosion through the bladder wall occuring predominantly within the first 2 yearsthe placement of TVT is producing tension or in the close proximity of the bladder..Formation of a calculus in the urinary bladder secondary to an intravesical mesh erosion is relatively infrequent rare and delayed complication.

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Case 1

A 55 year old post-menopausal woman was operated and TVT applied for genuine stress urinary incontinence 6 years ago, postop course was uneventful.Patient had come with complaints of dysuria and suprapubic pain with recurrent UTI since 6 months in spite of repeated treatments with antibiotics. On evaluation USG KUB and Xray pelvis it was found to be bladder stone formed over intravesical eroded portion of sling.Intraoperative cystoscopy revealed to be a bladder stone anchored to the intravesical eroded TVT mesh.A 26Fr Amplatz sheath after serial dilation was placed percutaneously at suprapubic region under endoscopic vision.Thenthe suprapubic approach used to fragment the calculus was done by laserlithotripsy.After that transurethral excision of the exposed mesh was performed with holumiumYag laser & adequate traction using percutaneous suprapubic amplaz.With the use of grasping forceply while performing cystoscopy by a rigid nephroscope in order to pull together with the intravesical eroded portion of sling out of the bladder wall.Operative time was around

25 min.Postoperative course was uneventful.Suprapubic and perurethral catheter were removed on second and seventh post operative day repsectively.Patient is asymptomatic on 1 year follow up.

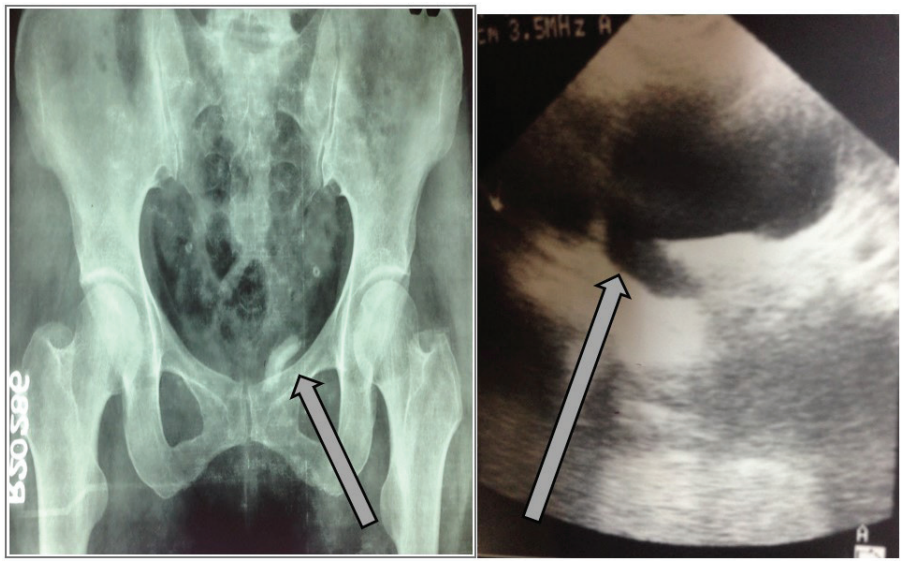

FIGURE 1 : XRAY PELVIS & ULTRASONOGRAPHY SHOWS BLADDER STONE

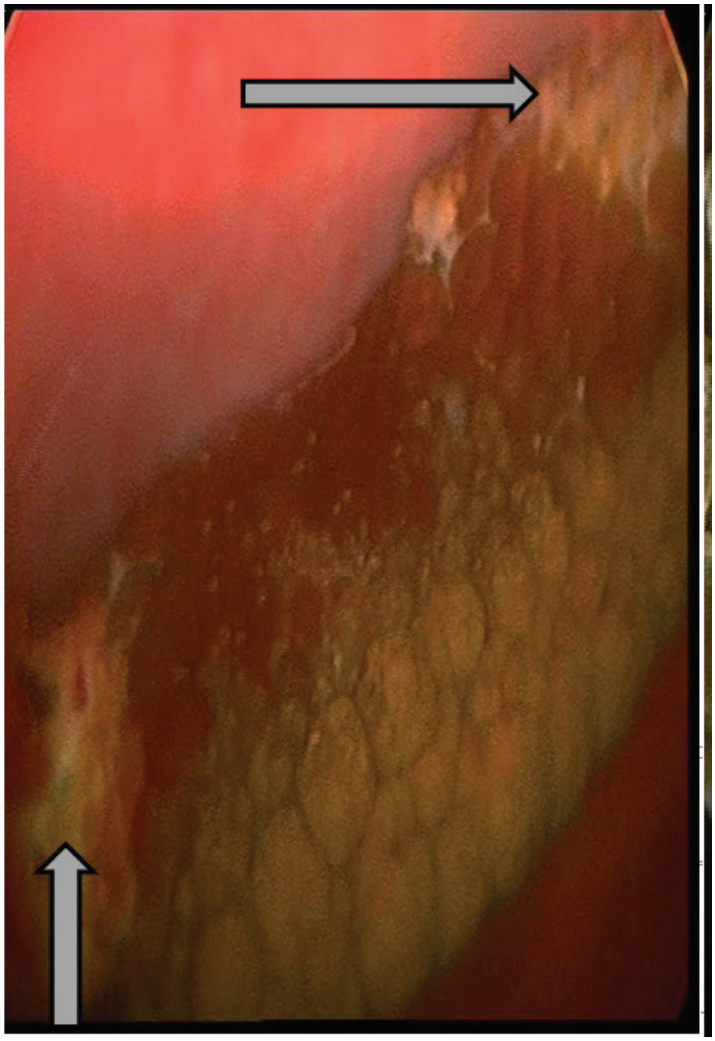

FIGURE 2: ENDOSCOPIC VIEW OF TWO ENDS OF BLADDER STONE

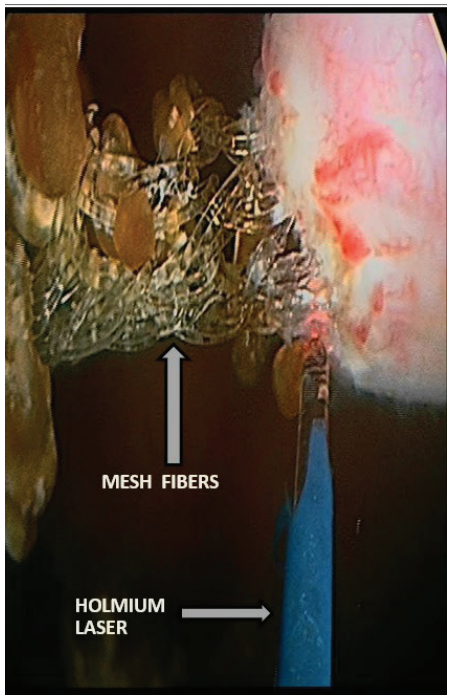

FIGURE 3: ENDOSCOPIC EXCISION OF INTRAVESICAL ERODED MESH

Case 2

A 52 year old lady had stress urinary incontinence and was treated by tension-freevaginal tape 1 year before presentation. Her main complaints include persistent stress urinary stress incontinence since the early postoperative period. Gynecological examination revealed urethral hypermobility with grade III cystocele. CT(Computed tomography) Urography revealed a vesical calculus fixed to the right lateral wall of urinary bladder. On cystoscopy, an encrustation over the bladder wall is seen where the polypropylene mesh has eroded the wall. It was fragmented using pneumatic lithotripsy. The transurethral resection of the mesh and surrounding bladder mucosa was performed. The operative time was 20 min. The patient was discharged on postoperative day one. During postoperative follow-up two months later, the bladder was healed completely on cystoscopy.

Case 3

A 65 year old obese lady was referred with severe urgency, urgency urinary incontinence,dysuria, occasionalhematuria and recurrent urinary tract infection to urology opd. She was operated and TVT applied for pure stress urinary incontinence 3 years ago without any complication and normal postoperative course.On sonography and Xray KUBit showed bladder stone formed over eroded part of slingwhich had infiltrated the bladder. Cystoscopy revealed to be a bladder stone anchored to the intravesical eroded TVT mesh.A 24 Fr Amplatz sheath after serial dilation was placed percutaneously at suprapubic region under endoscopic vision.Thenthe suprapubic approach used to fragment the calculus was done by laser lithotripsy.After that transurethral excision of the exposed mesh was performed with holumiumYag laser & adequate traction using percutaneous suprapubic amplazWith the use of grasping forceply while performing cystoscopy by a rigid nephroscope in order to pull stones together with the intravesical eroded portion of sling out of the bladder wall.Operative time was around 25 min.Postoperative course was uneventful. Operative time was around 25 min.Postoperative course was uneventful. Suprapubic and perurethral catheter were removed on second and seventh post operative day repsectively.Patient is asymptomatic on follow up

Discussion

Although TVT procedure is simple and minimally invasive procedure there are many serious complications such as bowel and bladder perforation, small bowel obstruction, retropubic hematoma, vessels injury and tape erosion in to urethra ,vagina and urinary bladder[2,3]

Traditionally an open cystoraphy approach is preferred during which a wide excision of the mesh is performed.however,various endo urological approaches have been performed in the last decade which includes conventional laparoscopic transvesical single-port procedures[4],transurethral procedures[5-7] and suprapubic-assisted transurethral procedures.

An isolated transurethral approach represent a lease invasive method but its association with residual mesh in the detrusor is high which may lead to irritative voiding symptoms secondary to urinary tract infection. Usage of Single-port laparoscopic approach had been reported to provide a “radical” excision but being a more invasive and certainly more complex than a transurethral approach is a disadvantage. A safe, simple, minimally invasive,successful treatment option is Combined endoscopic and percutaneous approach in which radical removal can be done with minimal bladder damage.It is alternative to both the transvaginal and transabdominal approach to extract stone and excising intravesical mesh.

Conclusion

Owing to the scarcity of the data on mesh erosion there is no consensus regarding the ideal approach to remove the mesh Combined endoscopic and percutaneous approach should be opted as the preferred approach .Open surgery should be opted only if minimal invasive approach fails.

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