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Case Report
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Complications of Suburethral Sling in the form of Mini Vaginal Tape (MVT): A Case Report

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Abstract:

Synthetic mid-urethral sling has become the most widely used technique for the surgical treatment of stress urinary incontinence. Despite its higher success rate significant complications have been reported including- migration, encrustation, and vesico-urethral fistula formation by a mid-urethral sling (MUS). Following the mid-urethral sling procedure, periurethral stone and urethrovaginal fistula formation are very uncommon. After an online search, we could not find any reported case of migration, encrustation and vesico-urethral fistula formation by mid-urethral sling (MUS). In this case a 55 years female presented with lower abdominal pain and incontinence, 10 years after mid-urethral sling procedure in the form of mini vaginal tape (MVT). We successfully removed the stone formed by encrustation of the displaced sling and repaired the fistula. Following the sling procedure, patients need long term follow up. Although rare, a high degree of suspicion is mandatory for diagnosis and management of complications.

Introduction:

Mid urethral sling- in the form of Tension free vaginal tape (TVT) was first described in 1995, since then due to high success rate, it is very popular for the treatment of Stress Urinary Incontinence. Some surgeons prefer to administer sub-urethral sling in the form of mini vaginal tape (MVT). But it may lead to some complications- like per-operative bladder bowel peroration, urethral erosion, UVF formation.[1,5,8] There are very few cases reports regarding accidental bladder perforation and intravesical stone formation are published.

We presented a case of encrustation and urethro-vaginal fistula formation after 10 years of mini vaginal tape (MVT) procedure. It was successfully managed by trans-vaginal approach. As far as our knowledge it is the first case report of its type.

Case report:

A 55 years old female presented with urinary incontinence with lower abdominal pain. She had a history of traumatic forceps delivery at her first pregnancy due to stillbirth, 25 years back. Following the procedure, she developed stress incontinence. She did not take any surgical management for stress urinary incontinence. Subsequently, she underwent three lower uterine caesarian section (LUCS) and total abdominal hysterectomy with bilateral salpingo-oophorectomy during her last LUCS 18 years back. She underwent Tension-free vaginal tape (TVT) in the form of mini vaginal tape (MVT), 10 years back for stress urinary incontinence (SUI). Following this procedure, she was dry for 5 years subsequently she developed incontinence which was worsening for the last 3 months. She complained of hard mass in the vagina

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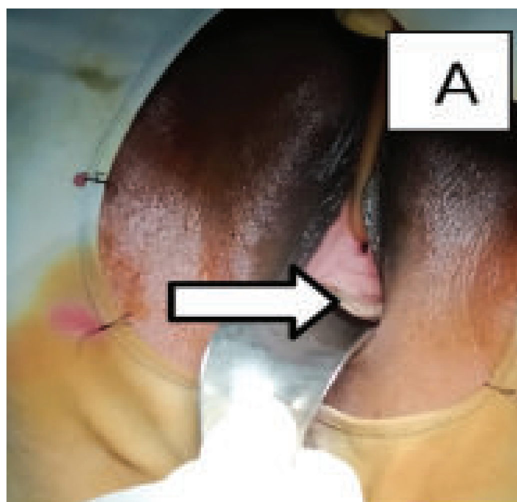

Figure1 A: *Stone marked by an arrow in peri-urethral region*

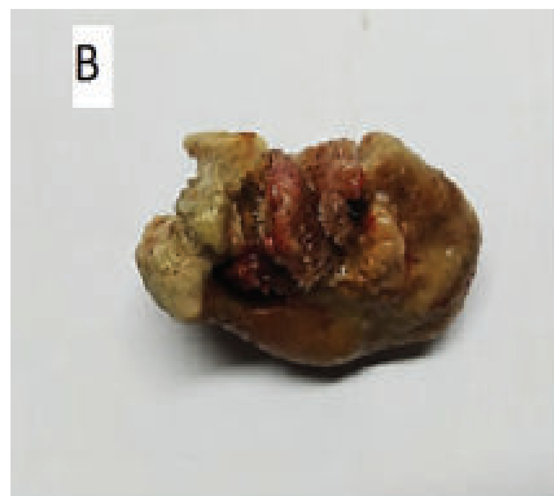

Figure1 B: *Postoperative view of removed TVT stone.*

and lower abdominal pain for the last 3 months. Initially, vaginoscopy was performed under local anesthesia. External urethral meatus found normal but a fixed stony hard mass noted in the anterior vaginal wall with a fistula tract. X-ray KUB of this patient-reported irregular - 3x5 cm radio-opaque shadow in the bladder neck area. Ultrasonogram (USG) documented the stone and urethrovaginal fistula. Subsequently, cystoscopy was performed under SAB for confirmation of diagnosis and further management plan.

We found a large stone, eroding in the urethra just distal to bladder neck [Fig. 1(A)] with a large urethro vaginal fistula tract, bladder neck was wide open, both ureteric orifices were pushed laterally, rest of the bladder wall found normal. Both ureters were secured by double J(DJ) ureteral stent. Stone [Fig. 1(B)] removed at a lithotomy position by sharp and blunt dissection through the vaginal route. Then the patient's position was changed and Urethro vaginal fistula was repaired in 3 layers in Jack-knife position keeping a 16fr catheter in situ. Postoperative progress was uneventful. After removal of the catheter on 21th postoperative day, she was dry on discharge. We planned to follow up the patient 3 weekly for 6 months.

Discussion:

Synthetic mid-urethral sling is a popular widely used technique for the surgical treatment of stress urinary incontinence, as it requires a less invasive procedure but having a high success rate. However, it is not free of complications.

There are various types of mid urethral sling, like butterfly tape, minivaginal tape (MVT)- to reduce the complications and make the procedure cost effective. Mini vaginal tape (MVT) placement procedure is very simple. A 1.5cm x1 cm tape is placed in suburethral space by anchoring it with pubic rami with 3/0 absorbable suture (polyglactin). In this procedure smaller needle and tape are used thus chance of neurovascular bundle injury is extremely low.

Some recent studies mentioned that TVT related complications are increasing.[1,2,3,4] Tape related complications are nearly (6%).[6,7] There are few papers regarding the formation of bladder stone by the sling. Some case studies reported- after Mid urethral sling accidental vesical perforation and stone formation in the intravesical part.[5,6,7] Up-to-the current date there is no report of stone formation in peri-urethral space. By far our knowledge it is the first case report regarding stone formation in peri-urethral space with the formation of urethro-vaginal fistula by a mid-urethral sling.

All mid urethral sling except mini vaginal tape (MVT) use self-anchoring tape. In case of mini vaginal tape (MVT) it is fised with pubic rami. So, repeated per vaginal surgical manipulation displaced the sling and resulted distortion of the bladder neck area. This made the sling vulnerable to exposure to urine. The synthetic mesh exposed to urine work as a nidus for encrustation, which gradually increased in size with time and formed stone.[5,6,7] In this case repeated erosion and gradual increase of stone size resulted fistula formation. We successfully removed the encrusted tape and repaired urethro vaginal fistula.

Conclusion:

Mini vaginal tape (MVT). is a very simple, minimally invasive procedure, but it may end up with various complications. Postoperative long term follow up with high suspicion is cardinal for early diagnosis and management of complications.

Ethical Issue:

Written and signed informed consent from the patient was taken for publishing this case report.

Abbreviation:

LUCS-lower uterine caesarian section MUS- Mid urethral sling MVT-mini vaginal tape

SUI-stress urinary incontinence TVT- trans-vaginal tape USG- Ultrasonogram. UVF- urethro-vaginal fistula

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