

A transvaginal removal and repair of vesicovaginal fistula due to mesh erosion

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ABSTRACT

Vesicovaginal fistula (VVF) is a devastating social problem. It can either result from obstetric trauma or following gynecological surgeries, malignancy, or radiation. We present a case of a 70-year-old woman who had a VVF following mesh augmentation surgery for anterior compartment prolapse. She required a transvaginal removal of the eroded mesh followed by a transvaginal repair of VVF using a Martius flap, 6 weeks later. Transvaginal removal of mesh is technically feasible and a good approach. Timing and route of surgery should be individualized.

Key Words: Bladder mesh erosion, transvaginal removal of mesh, vesicovaginal fistula

INTRODUCTION

Genitourinary fistula is defined as an abnormal communication between the urinary (urethra, bladder, ureter) and the genital (uterus, cervix, vagina) system. Vesicovaginal fistula (VVF) is the most common type of genitourinary fistula. In developing countries, obstetric VVF is a common sequel following obstructed labor. In developed countries, VVF is associated with pelvic surgeries and has a reported incidence of 0.1–2%. The most common pelvic surgery leading to VVF is hysterectomy, accounting for up to 75% of cases.^[1] The incidence of VVF following an anterior compartment repair with transvaginal mesh augmentation is unknown, and it is a debilitating and serious complication of bladder mesh erosion. Here, we report a case of VVF with bladder mesh erosion following mesh augmentation surgery for anterior compartment prolapse.

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CASE REPORT

A 71-year-old female presented with a complaint of involuntary leakage of urine from vagina of 1-year duration. Her parity index was para 5, live 2; all being spontaneous full-term normal vaginal deliveries. Antenatal, intranatal and postnatal period were uneventful. Total abdominal hysterectomy was performed 25 years ago for abnormal uterine bleeding. Subsequently, she developed stress urinary incontinence with pelvic organ prolapse quantification Stage 2 anterior vaginal wall prolapse 1½ years ago. For this, she underwent a transobturator tape (Freedom VM™ polypropylene monofilament mesh) with mesh reinforcement (macroporous prolene mesh).

General physical examination was normal. On abdominal examination, a suprapubic transverse incision scar of hysterectomy was noted. Gynecological examination revealed normal urethra, wide genital hiatus, and the eroding mesh was felt on the anterior vaginal wall. On

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speculum examination, there was evidence of mesh erosion of 1.5 cm × 1.5 cm in the middle third of anterior vaginal wall with a frank leak of urine from the eroded site. The posterior vaginal wall and vault were atrophic. Cystourethroscopy [Figure 1] revealed mesh erosion of 1.5 cm × 1.5 cm in the trigonal area. Both ureteric orifices were normal and distant from the fistula. On vaginoscopy [Figure 2], the mesh erosion was seen in the anterior vaginal wall in the middle third of vagina. The mesh was excised and removed vaginally, resulting in a 2 cm × 2 cm rent into the bladder. A silicon catheter was kept *in situ*. A repeat cystourethroscopy at 6 weeks revealed contraction of the fistula with a bladder capacity of 200 ml. Bilateral ureteric catheterization confirmed ureteral patency. Irrigation fluid was noted to be leaking into the vagina from the rent in the anterior vaginal wall. All biochemical reports were within normal limits, and the urine was sterile. Ultrasonography and intravenous pyelography revealed normal kidneys and ureters.

Transvaginal repair of VVF using Martius bulbocavernosus fat pad flap was planned. Bilateral ureteric catheterization was done. Edges of the fistula tract were freshened. Bladder rent was repaired in 2 layers with 3-0 vicryl sutures. Martius flap from the left labia majora was used to reinforce the repair. No leak was observed on filling the bladder with 100 ml of methylene blue saline. The continuous indwelling catheter was kept for 21 days to drain the bladder. Ultrasound of the kidneys, ureter, and bladder on day 21 reported normal bilateral kidneys, ureter, and bladder. At a follow-up of 10 months, she was completely continent and voiding with a good stream and negligible postvoid residue.

DISCUSSION

Some authors believe that removal of eroded mesh by transabdominal approach and bivalving of bladder is mandatory.^[2] Some others described a combined transvaginal

and abdominal approach. Yamada *et al.* in 2006 reported the first case of mesh erosion involving the bladder after mesh placement using a prolapse kit. A combined vaginal and abdominal approach was used to excise the mesh and concomitant repair of associated VVF.^[3] A literature search revealed very few cases reporting transvaginal removal of eroded mesh. In a retrospective study by Firoozi *et al.* of 23 cases of transvaginal mesh placement for anterior vaginal wall prolapse using various polypropylene materials, the reported incidence of VVF was 9%. About 90% of cases underwent transvaginal excision of eroded mesh with concomitant vesicovaginal repair by transvaginal approach.^[4] Although Type 1 polypropylene mesh is a well-accepted tape for anterior vaginal wall repair, the Food and Drug Administration in a recent report released in July 2011 following a systematic review of published literature voiced their concern regarding the safety and effectiveness of mesh use for pelvic organ prolapse and reported a 10% incidence of mesh erosion in 12 months of pelvic organ prolapse surgery. In VVF repair the first chance is the best chance and success rate declines with each attempt.^[5] In this case, eroded mesh was removed transvaginally, and 6 weeks later fistula repair was performed using a Martius flap. The reason for spacing the two surgeries was mainly to help reduce the tissue induration and edema. Consideration was given for adjuvant treatment with pre- and post-operative local estrogen cream for vaginal atrophy and anticholinergic therapy to prevent bladder spasm and reduce tension on the suture line.

CONCLUSION

Transvaginal removal of mesh erosion is a good approach which is technically feasible with less operating time and reduces the morbidity of abdominal surgery. Timing of the repair surgery should be individualized based on the pliability of the tissues. We opted for a transvaginal repair of VVF as it is an effective and a proven surgical technique

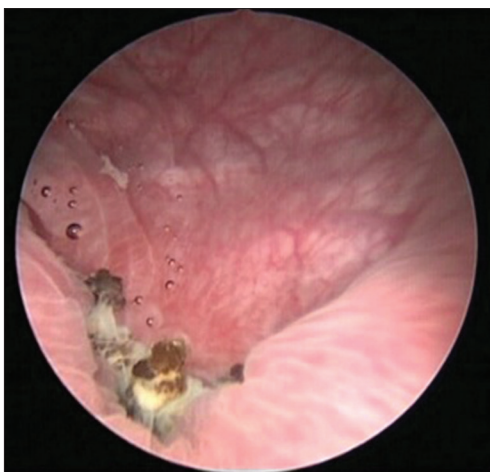


Figure 1: Cystoscopic view of bladder mesh erosion

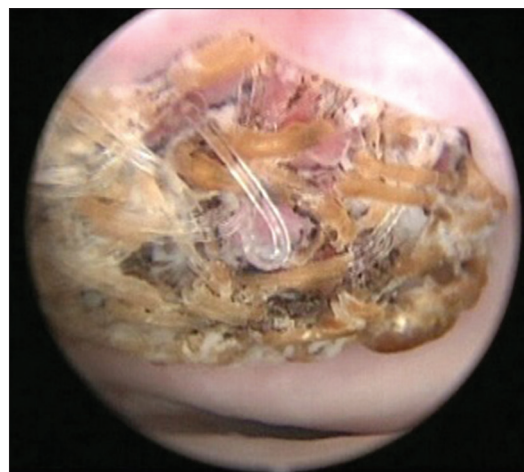


Figure 2: Vaginoscopic view of mesh erosion

with less bleeding, low morbidity, and shorter postoperative recovery period.

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Conflicts of interest

There are no conflicts of interest.

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