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Case Report

Urethro-cutaneous fistula: a rare complication in anti-incontinence surgery with trans-obturator tapes sling

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ABSTRACT

This case report presents a rare complication of tension-free mid-urethral tape surgery by the obturator approach (TOT) in the form of a urethro-cutaneous fistula. The patient underwent successful surgical repair, highlighting the importance of intraoperative cystoscopy to minimize surgical risks and complications. Tension-free mid-urethral tape surgery is a commonly performed procedure for the treatment of stress urinary incontinence (SUI). However, complications can occur, albeit rarely. In this case, a 52-year-old female patient developed a urethro-cutaneous fistula following TOT surgery. The fistula was identified by the presence of urine leakage at the right inguinal level, leading to significant distress and discomfort for the patient. Prompt diagnosis and appropriate management are crucial in such cases. The patient underwent surgical repair, which involved excision of the fistulous tract. The procedure was successful, resulting in complete resolution of the fistula and restoration of normal urinary function. In conclusion, this case report highlights the occurrence of a rare complication, namely a urethro-cutaneous fistula, following TOT surgery. The successful surgical repair emphasizes the importance of prompt diagnosis and appropriate management. Furthermore, the authors propose that an intraoperative cystoscopic evaluation be considered, even after a TOT procedure. Especially in cases that present risk factors or in hospital-school institutions. By implementing this practice, surgeons can enhance patient safety and improve surgical outcomes in anti-incontinence procedures.

Keywords: SUI surgery, Transobturator mid-urethral sling, Urethro-cutaneous fistula

INTRODUCTION

In recent years, mid-urethral slings have become the gold standard surgical treatment for female SUI. It is important to keep in mind that, as with any surgical intervention, these procedures possibly develop complications.¹

To reduce surgical complications, in 2001 after the tension-free vaginal tape (TVT), the trans-obturator approach was developed by Delorme.² Retropubic tapes have slightly greater efficacy, however they can present a higher rate of bladder perforation, bowel injury, increased short-term postoperative suprapubic pain, and

postoperative voiding dysfunction, which may require sling resection. On the other hand, TOT is slightly less effective and present more postoperative short term groin pain, however, they are associated with a lower rate of lower urinary tract injury, such as bladder perforation or urethral injury.³

Even though a lower urinary tract injury with the trans-obturator approach is reported to be <0.5%, one's clinical suspicion for this post-operative complication should remain high. Identification and immediate treatment of these injuries during surgery can greatly reduce all potential serious complications, such as the formation of

an abnormal connection between the bladder and the vagina (vesico-vaginal fistula) or urethral erosion.⁴

To our knowledge, this is the first case report describing a urethra-cutaneous fistula as a result of an anti-incontinence surgery that used a tension-free mid-urethral tape by obturator approach (TOT).

CASE REPORT

This is the case of a 59-year-old female patient, with a medical history of diabetes mellitus type 2 treated with metformin and linagliptin, and surgical history of SUI treated with a tension-free mid-urethral tape by TOT approach 6 years before her initial consultation in our institution. Her initial complaint was of a foreign body sensation in her right inguinal region and urinary leakage, in drops, wetting 2 gauze pads a day. This was also accompanied by a 1-year evolution of urinary urgency, denying any type of incontinence. Whilst voiding she reported a weak continuous stream, with terminal dripping.

The patient underwent a uro-gynecological physical exam which demonstrated a negative cough test. There was no evidence of transvaginal prosthetic material exposure. In the sub-urethral region, the patient had a 1×1 cm granuloma, and at the right inguinal, level a hypertrophic scar was observed with sallow fluid leaking. During palpation an indurated path toward the vulva was noticed, and an anterior wall pelvic organ prolapse was evident (POPq IIAa) (Figure 1 and 2).



Figure 1: Cutaneous fistula.

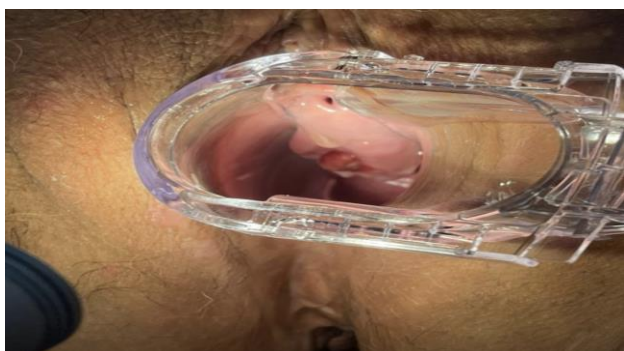


Figure 2: Vaginal granuloma at the mid-urethra level.

Since the patient reported urine leakage through the scar in the inguinal region at the trocar entry site, we strongly suspected a fistulous tract. To confirm the suspicion a phenazopyridine test was performed, which resulted positive.

General laboratory and microbiologic tests were performed concluding a negative vaginal and urine culture; however, a positive fistulous tract culture came back for a beta-hemolytic group A streptococci which required antibiotics and control culture which resulted negative. With these initial results the patient underwent more tests directed to diagnose a possible fistulous tract.

A cystoscopy exam was performed, no lesions or abnormalities were evident in the bladder. The urethra proved negative for any fistulous orifice. A catheter was introduced 15 cm through a cutaneous fistula, it was then palpated at a sub-urethral level 1 cm from the urethral meatus without observing the exit orifice.

A fistulography was then performed which showed the passage of contrast material from the subcutaneous plane to the urethra, revealing the urethro-cutaneous fistulous tract (Figure 3).

A magnetic resonance was performed to define the surgical approach. This resulted in an irregular linear image in the urethra approximately 1 cm from the bladder neck with a fistulous tract which emitted signal intensity changes in the puborectalis muscle. The fistulous tract was located higher than the elevator ani muscle and the right obturator internus muscle. It ran towards the obturator externus muscle through the obturator foramen and was located parallel to the adductor magnus muscle where it was in a horizontal path towards the opening on the medial surface of the soft tissues (Figure 3).

Surgical technique

The fistulous tract was located, a tunneler was introduced through the region of the thigh to the urethra, an incision was made in the skin and a sharp dissection was performed in planes, respecting the fistulous tract. At 4 cm, synthetic mesh was located, which was dissected, and the extraction of the fistula was performed. The entire fistulous tract was dissected up toward the urethra, approximately 8 cm, urethral repair was performed in 2 planes with simple stitches using 3-0 vycril. Hemostasis was verified and closure was performed in planes up to the skin with the usual technique, using vycril 2-0 for muscle and subcutaneous tissue and Nylon 2-0 for skin using simple stitches (Figures 4 and 5).

Follow-up

The patient was symptom-free at follow-up visits 6 and 12 months after the surgical procedure. She denied urinary incontinence, pain, or discharge in the right thigh region. Secondary phenazopyridine tests were performed which

proved no communication between the urethra and the right groin.



Figure 3: Urethro-cutaneous fistulography.

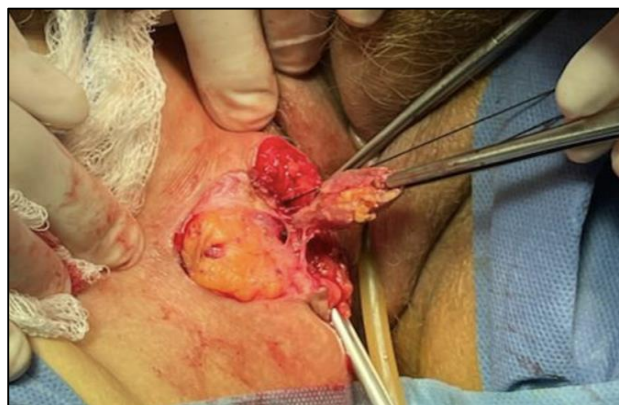


Figure 4: Fistulous tract dissection.

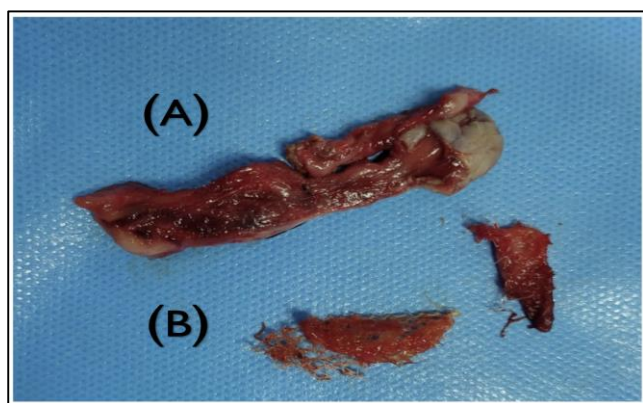


Figure 5 (A and B): Fistulous tract and prosthetic material.

DISCUSSION

Although mid-urethral tape operations have a very high success rate, currently considered the gold standard treatment for SUI, they have low complication rates. Most adverse events appear to be higher with the retropubic

approach than with the trans-obturator approach. The main complications in the use of TOT are hematomas, postoperative pain, infection, rejection, or erosion of the synthetic materials of the sling, intraoperative injuries to the bladder or urethra are extremely rare with this approach.⁵

After an extensive literature search in which we did not find any documented cases of urethra-cutaneous fistula following a TOT procedure to treat incontinence, we concluded, to the best of our knowledge, that there is only one case report of vesico-cutaneous fistula after TOT mid-urethral tape surgery as closest pathology to the one described in this report.⁶

Most complications were reported to occur between the first and fifth year of tape insertion.⁷ However, in the case of our patient, it occurred 6 years after the placement of the TOT mid-urethral tape.

To manage complications effectively and with less morbidity, early recognition during surgery is crucial.

Although initial reports indicated that cystoscopy was not necessary during the TOT procedure to detect injuries to the bladder and urethra, the routine use of cystoscopy during gynecologic surgery allows timely diagnosis of urinary tract injuries in a cost-effective manner.⁸

We concluded that the urethrocutaneous fistula in this patient could have been due to the lack of experience in passing the trocar and undetected urethral perforation during placement of the mesh through the urethra.

To minimize surgical risks and complications, as this case report exemplified, we venture to propose that an intraoperative cystoscopic evaluation be considered, even after a TOT procedure. Especially in cases that present risk factors such as patients with prolapse of the anterior vaginal wall, previous surgeries on the pelvic floor or in hospital-school institutions.

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