



An unusual late complication with tension-free vaginal tape (TVT): A case report



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ABSTRACT

Background: Stress urinary incontinence is a common problem affecting women's quality of life. The retropubic mid-urethral sling accounts for the majority of surgical interventions for stress incontinence. Complications of the procedure are rare. We present an unusual late complication with tension-free vaginal tape (TVT).

Case: Two years after insertion of a TVT for stress incontinence, a patient noticed a foreign body intermittently exiting through her anus. Initial clinical examinations and investigations were unremarkable. Five years after insertion she represented with faecal matter in the vagina and a TVT erosion. Imaging confirmed a colo-vaginal fistula. She underwent a vaginal excision of the TVT but this did not cure her problem and she subsequently had a laparoscopic sigmoid colectomy. Thereafter she remained well and asymptomatic.

Conclusion: This case report describes an unusual late complication. It is likely that the left arm of the mesh entered the serosa of the sigmoid colon and eroded into it over time. Complications associated with TVT are rare, but when they occur they need to be recorded. Only surgeons who have experience and expertise in the procedure should perform it, such as subspecialty trained urogynaecologists.

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1. Introduction

Stress urinary incontinence (SUI) is defined as involuntary leakage of urine on effort, physical exertion or sneezing or coughing [1]. It affects a large proportion of the female population, with an estimated 35% experiencing such symptoms during their lifetime [2]. It has a significant effect on quality of life, and 71.4% of patients indicate that it has affected their life 'a lot' or 'moderately' in a survey. However, over 40% describe their health as 'good' or 'very good', showing that even in otherwise good health SUI has a profound effect on quality of life [3]. The National Institute for Health and Care Excellence (NICE) guideline recommends surgery with either a retropubic mid-urethral sling (MUS), colposuspension or autologous fascial sling [4]. MUS accounted for the vast majority of surgical interventions for urinary incontinence, prior to the mesh pause in 2018, performed in 81% to 94.6% of cases [5,6]. Unlike other surgical options, MUS is a day case procedure, which is relatively quick to perform, with less post-operative recovery time. It has a high success rate, with 90.2% of patients reporting being 'much better' or 'very much better' [7]. A 17-year follow-up of patients treated with tension-free vaginal tape (TVT) found an objective cure rate of 84% and a subjective cure rate of 79% [8]. Complications are rare; only 3.7% of patients experience perioperative complications and 1.9% experience

pain persisting for more than 30 days [6]. In this case we present an unusual late complication related to TVT.

2. Case Report

A 47-year-old ex-smoker with a body mass index (BMI) of 39.72 presented with symptoms of SUI in 2011 to a district general hospital. Her significant surgical history included a Roux-en-Y bypass and an abdominoplasty. She had one child born with Ventouse. She had a history of hypothyroidism controlled by levothyroxine and was taking ferrous fumarate for anaemia. A TVT was inserted later the same year. The procedure was uncomplicated and the patient made a good post-operative recovery. Her SUI was cured and she had no other lower urinary tract symptoms.

In 2013 the patient noticed a 15 cm long foreign body intermittently protruding from her anus (Fig. 1). She attended an emergency department but clinical examination did not reveal any abnormality. Two weeks later the same symptom recurred, but this time she had tied some orange knitting wool to the foreign object and attended the emergency department. On arrival it had retracted again. She underwent an examination under anaesthesia and a colonoscopy, which found only the wool. In 2014 she received a second opinion at another hospital, where she had an examination under anaesthesia (EUA) with sigmoidoscopy performed by the gynaecologist and colorectal surgeon. Again no abnormality was seen.

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Fig. 1. TVT (blue polypropylene mesh) protruding through the anus. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

By 2016 her symptoms worsened and as well as the intermittent protrusion she was also experiencing an offensive vaginal discharge, at which point she was referred to a tertiary unit. A vaginal examination confirmed faecal matter, as well as a tape erosion at 11 o'clock to 4 o'clock position, exiting through the posterior wall of the vagina. MRI of the pelvis (Fig. 2) and CT scan (Fig. 3) confirmed a colo-vaginal fistula. Video urodynamics revealed a stable bladder with with no sign of incontinence.

Following multidisciplinary team review, the patient underwent a joint procedure with an urogynaecologist and colorectal surgeon. Both arms of the tape were removed vaginally, as far as possible. Histological examination confirmed a fistula tract. Culture of the excised TVT grew *Escherichia coli*, mixed anaerobes and *Streptococci infantarius* ssp. *coli*, which is a commensal inhabitant of the gastrointestinal tract [9]. The colorectal team performed a flexible sigmoidoscopy and noted inflammatory tissue only and made a decision not to disrupt the tract. On day 2 post-operatively, the surgeons arranged a gastrograffin enema, which did not demonstrate a leak and she was therefore discharged. Seven days later she re-presented to hospital because she was passing faeces per vaginam. One month later she underwent a diagnostic laparoscopy, which revealed the proximal sigmoid loop attached to the left vaginal fornix. The surgeons proceeded to perform a sigmoid colectomy with primary anastomosis. Histology confirmed a fistula tract into the sigmoid colon. She was discharged home on the fourth day following surgery.

Four weeks following the second surgical procedure the patient had made a good recovery with no faecal matter in the vagina. Within a year she had developed an abdominal port-site hernia, which was surgically repaired. One year post-operatively she was seen in the urogynaecology clinic. She denied SUI but had increased urinary frequency and urgency, for which she was offered bladder retraining and pelvic floor physiotherapy in the first instance. She had no vaginal or bowel symptoms and was having penetrative sexual intercourse without concern.

3. Discussion

This is an unusual case of a delayed presentation of a TVT complication involving the large bowel. To our knowledge there have been 15 reported cases of bowel complications in the literature [10–15]. Of these, eight were small-bowel perforations, presenting with symptoms between 1 day and 5 months post-operatively; one patient died due to the complication. There was one case of perforation of both small

bowel and caecum, which presented 12 h after TVT insertion. Caecum perforation occurred in three cases; one presented within 12 h and the other two were incidental findings. One was found one year later at screening colonoscopy and the other five years later, incidentally, during an abdominal sacrocolpopexy for vaginal vault prolapse. The sigmoid had been perforated in three cases and presented 1 day, 2 weeks and seven years post-operatively [10,11,13].

In our case, there was an approximate two-year delay between insertion of the TVT and the presenting symptoms. This is in keeping with the other case reports that show small-bowel complications presenting earlier, whilst large-bowel complications present later and sometimes incidentally. Our case is unique in that the patient's symptoms were unusual and intermittent, with the TVT tape exiting through the anus. Despite a clear history this was not found during two bowel examinations under anaesthetic. It was not until she developed faecal discharge and a TVT erosion in the vagina, three years after her initial complaint, that a diagnosis was made.

It is difficult to know what exactly caused this complication. A retropubic TVT is inserted as a blind procedure. The tape introducer is inserted through a small sub-urethral incision and passes para-urethrally to track immediately behind the pubic symphysis. The left arm of the TVT may have been placed into the peritoneal cavity at the time of surgery and over time eroded into the sigmoid colon. We hypothesise that in this case the tape was passed too cranially, resulting

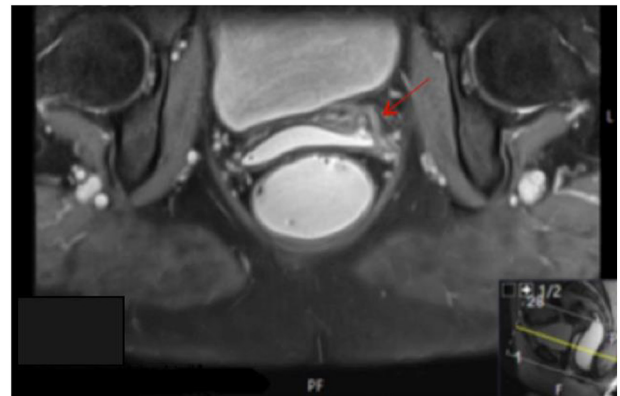


Fig. 2. MRI, marker showing the colo-vaginal fistula.

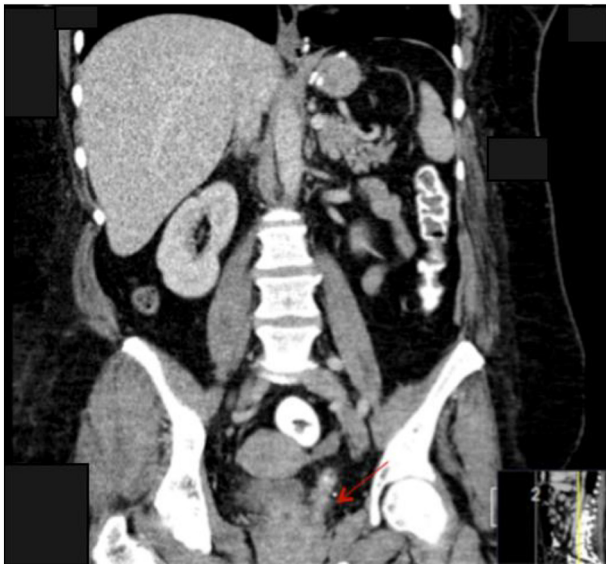


Fig. 3. CT scan, marker showing the colo-vaginal fistula.

in an injury to the loop of sigmoid colon. Since this was not a full-thickness injury, the presentation was delayed and became apparent only when she developed symptoms.

It could be argued that in this case the colorectal surgeons should have performed a sigmoid colectomy at the first procedure when the TVT was excised. However, they hoped to minimise morbidity by avoiding a bowel resection. There is no published guidance on the management of a sigmoid-vaginal fistula treatment. However, the principles of a successful fistula repair are to remove the unhealthy fistula tissue, replace with healthy tissue that has a good blood supply to enhance healing, and maintain thick interposing tissue between the two surfaces [16]. By not excising the fistula tract there is always a risk the fistula may recur, as was the case here.

The patient's high BMI may have been a factor in causing the complication. The anatomical landmarks become unclear in the obese patient and it is more difficult to palpate the pubic symphysis and therefore to direct the fixed curved needle [17].

Due to the perceived simplicity and short operating time of the surgery, with quick patient recovery, MUS became very popular among both clinicians and patients and very large numbers have been performed [5]. We believe that urogynaecologists or female functional urologists, who perform larger numbers when compared with the general gynaecologist, should perform the procedure. This may reduce the risk of complications. A study investigated the learning curve of insertion of TVT found that core gynaecology trainees had performed fewer procedures and had a bladder perforation rate of 10.3%, whereas urogynaecology subspecialty trainees who had performed more procedures had a bladder perforation rate of 4.5% [18]. Invariably, urogynaecology subspecialty trainees are taught by subspecialty trained urogynaecology consultants who have considerable knowledge of the anatomy and the surgical technique.

According to an audit of SUI surgery between 2008 and 2017, by the British Society of Urogynaecology (BSUG), there is only a 0.04% risk of an intraoperative bowel complication following insertion of TVT [7]. There is no mention of postoperative bowel injury. Another BSUG audit of 4993 procedures revealed no bowel injuries [6]. In a study of 18,763 retropubic tape insertions, only 4 cases of bowel injury were recorded [19]. We believe despite bowel injury being rare, there may be a lack of reporting of complications. This may be because of lack of recognition of the complication, or a lack of awareness of the reporting protocol. We suggest that all surgical outcomes should be reported using a national database such as the BSUG or British Association of Urological Surgeons

(BAUS) database. This would be in keeping with the findings and recommendations from the recent Cumberlege report [20]. Only then will we get a true representation of the long-term success of surgery as well as long-term complications. Unfortunately, however, given that reporting is not currently mandatory, under-reporting of complications is likely to continue.

This case highlights that although bowel complications secondary to TVT are rare, they can have significant impact, increasing morbidity. Unusual symptoms should be investigated thoroughly and complications should always be reported.

Contributors

Christopher Savvas wrote the paper.

George Araklitis wrote the paper and gained patient consent.

Jo Hunter wrote the paper.

Dudley Robinson generated the idea and edited the paper.

Linda Cardozo generated the idea and edited the paper.

All authors saw and approved the final version.

Conflict of Interest

The authors declare that they have no conflict of interest regarding the publication of this case report.

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Patient consent

Obtained.

Provenance and peer review

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