# Case – Recurrent abscess and vaginal-thigh fistula from a transobturator mesh tape after COVID-19 vaccination

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## CASE

**KEY MESSAGES**

- Long-term complications after a transobturator tape procedure can include recurrent thigh abscess and vaginal-thigh fistula formation. Surgical excision is required for definitive management.
- Further research is needed to investigate the association of COVID-19 mRNA vaccination and development of novel abscess

We present the case of a 55-year-old female who had an uncomplicated TOT procedure in 2006 by a senior general gynecologist for SUI. Her medical history included a myocardial infarction secondary to ventricular fibrillation, chronic obstructive pulmonary disease, dyslipidemia and hypertension. Additional surgical history included a recent right tibial open reduction and internal fixation from a fall. She had not been sexually active for several years and denied any intravenous drug use. She had an allergy to sulfa drugs.

Four days after her second COVID-19 mRNA vaccination, the patient presented to the community emergency department with a four-day history of pain to the right upper thigh, foul-smelling vaginal discharge and new vaginal bleeding. She also reported a fall and a bruise to the surrounding right upper thigh one month prior, but no penetrating injury. General surgery was consulted and examination was notable for erythema and tenderness to the right medial upper thigh, with no palpable mass or fluctuance, and ongoing foul vaginal discharge. She remained afebrile and vitally stable, and motor and sensory function remained intact. CT revealed a suspected abscess with gas along the right adductor magnus muscle measuring 7 cm x 12 cm,

and not communicating with the pelvis. (FIGURE 1) At this time, her abscess was presumed to have been secondary to an infected hematoma from her fall.

The suspected abscess was not amenable to drainage by interventional radiology, and the patient was started on antibiotics. Orthopedics was consulted and she was brought to the operating room for irrigation and debridement of the right thigh. Post-operatively, she was started on ceftriaxone and vancomyin, with cultures growing *Streptococcus anginosus*. Due to persistent swelling one week later, a repeat CT was ordered which showed two additional collections in her thigh. Ultrasound-guided aspiration was done and the patient was sent home on intravenous antibiotics for six weeks.

Meanwhile, the patient was also assessed by a general gynecologist for her post-menopausal bleeding. Hysteroscopy, endometrial sampling and pelvic ultrasound were all unremarkable.

Six months later, she presented to the emergency department with her first abscess recurrence, with associated foul vaginal discharge and medial upper thigh pain. There were no signs of cervicitis or vaginal wall defect on pelvic examination. CT showed a 3.8 cm x 2.8 cm x 10 cm collection in the right superior medial thigh and ultrasound described it as solid tissue with surrounding vascular flow, not warranting drainage. She remained afebrile and was started on ceftriaxone and metronidazole. Gynecology was consulted and the patient was transferred to a tertiary hospital with urogynecology, where she elected for conservative management with intravenous antibiotics for eight weeks. Repeat CT showed radiographic resolution.

Six months afterwards, the patient presented with her second abscess recurrence, with a similar presentation as well as lower urinary tract symptoms. CT showed a collection measuring 4.7 cm x 2.9 cm x 9 cm in the same area. She was started on ertapenem. Orthopedics and infectious diseases were consulted and a six-week course of oral amoxicillin-clavulanate was recommended. Shortly after, she was seen by urogynecology as an outpatient, and consented for surgical exploration and excision of the mesh.

While awaiting her planned surgery, she presented with her third abscess recurrence another six months later. CT showed a suspected abscess measuring 4.0 x 2.1 cm in the right adductor magnus area. She was discharged on a four-week course of oral cefixime.

Her surgery by urogynecology occurred shortly after. Findings included a pinpoint erosion of mesh within the vaginal rugae at the right anterior sulcus that had not been previously identified. This was dissected to reveal a well-developed large epithelialized fistulous tract along the course of the sling extending to the right obturator membrane (FIGURE 2). The gracilis fascia, adductor brevis tendon, obturator externus muscle, obturator fascia and internus muscle were dissected. A sinus tract with pus was encountered at the distal point of the mesh. The entire right half of the mesh was sharply dissected and excised en bloc, such that no visible mesh remained. The left half appeared normal and the decision was made to leave it in situ as it was felt that the dissection would carry more risk than benefit. Extensive irrigation was done, and a Jackson-Pratt drain was inserted in the dead space of the dissected planes at the end of the

procedure. The patient recovered well post-operatively. The drain was removed post-op day one, and she was discharged post-op day two with a course of oral antibiotics.

On post-op day seven, she presented to the emergency department with localized swelling at the surgical area. Ultrasound revealed a complex fluid collection measuring 9.2 cm x 4.7 cm x 3.1 cm and a 6.4 cm x 1.4 cm x 2.5 cm solid appearing area with internal vascularity in the right medial and anterior thigh, respectively. Infectious Diseases was consulted and she was sent home on an eight week course of ertapenem. Cultures revealed *Enterococcus faecium* resistant to vancomycin, and *Morganella morganii.* Repeat CT revealed complete radiographic resolution.

The patient has been symptom free with no further recurrence more than twelve months since her surgery by urogynecology. On follow-up, she had no pain, swelling, or foul vaginal discharge. She had no bothersome lower urinary tract symptoms, specifically no SUI. Her incisions had all healed well and follow up ultrasound confirmed no collection.

## DISCUSSION

We present an interesting case that highlights two unusual findings: 1. Development of recurrent abscesses and a vaginal-thigh fistulous tract along a TOT, more than 15 years after the procedure and 2. Onset of symptoms shortly after COVID-19 vaccination.

Fistula formation and development of abscesses are uncommon but recognized risks of foreign body insertion. Thorough pelvic examination, timely detection and management are critical to prevent deterioration. The incidence of abscesses after TOT polypropylene mesh has been reported in multiple case studies.[3-4, 6-12] Lee and colleagues reinforced the importance of complete mesh removal, and surgical excision seems to be the mainstay of recommended management in the published case reports. Our case highlights the importance of surgical excision in definitive treatment. In part due to service limitations in remote community sites, our patient underwent multiple rounds of antibiotic therapy with a six-month recurrence each time. A recurrence-free interval was ultimately achieved after surgical excision of the affected portion of polypropylene mesh.

The COVID-19 vaccine was a life-changing intervention that helped to change the course of the pandemic. While all vaccines are associated with common but mild side-effects, the rarer but more serious risks should also be noted. The timing of our patient's onset of symptoms right after her COVID-19 vaccination is curious, particularly as she had been asymptomatic for 15 years prior and there have been case reports describing novel abscesses after the vaccination, as soon as one to two days after vaccination.[14-15] The most plausible hypothesis is that she developed an infection through a pre-existing pinpoint erosion in the vagina, which led to abscess and subsequent fistula formation. We wonder if the transient immune response from the vaccination may have made her vulnerable to infection. The impact of the COVID-19 vaccination in cascading the series of abscesses in this case is worth considering, and further research is warranted to better understand the potential side effects so that we may better manage them.

Our case illustrates the onset of abscesses and fistula formation 15 years after a TOT procedure. This highlights the need for a high index of suspicion with a remote procedure and the importance of surgical excision.

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## FIGURES AND TABLES

***Consent:*** *Informed consent was obtained from the patient for publication of these images.*

**Figure 1.** Computed tomography pelvis showing discrete gas fluid collections in the right superior medial thigh consistent with abscesses.

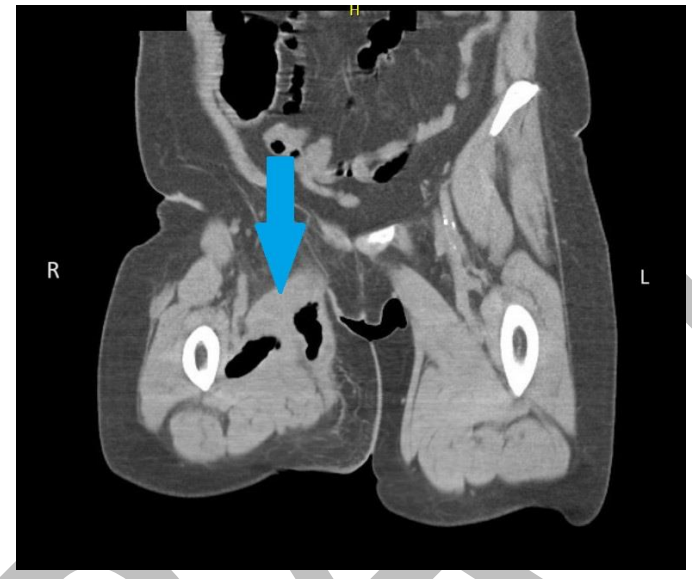
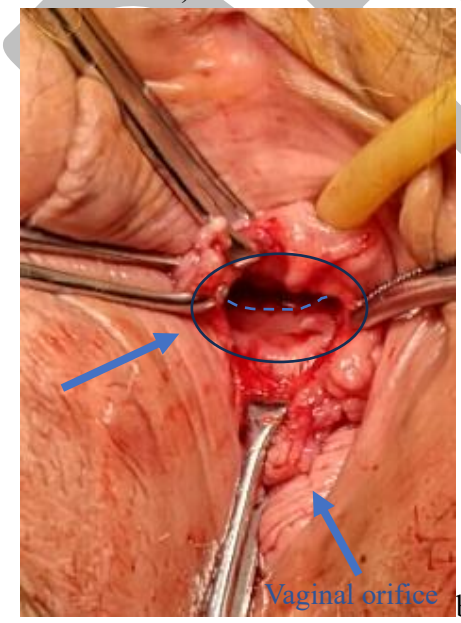



**Figure 2.** Dissected epithelialized fistulous tract (a) containing the polypropylene mesh (dotted line); (b) extending from the suburethral space to (c) the right obturator space (suture tail attached for traction).

a)

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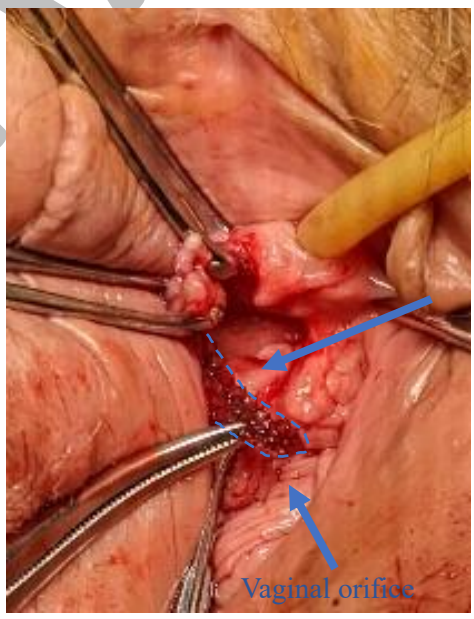

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