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## Late-onset Isolated Myositis Following Transobturator Mid-Urethral Sling: A Case Report

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# Late-onset Isolated Myositis Following Transobturator Mid-Urethral Sling: A Case Report

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## Abstract

Late onset of isolated myositis following a Transobturator (TOT) mid-urethral sling (MUS) is a rare post-operative complication.

A 38-year-old gravida 3 para 3003 with a long standing history of mixed urinary incontinence, Stage 2 anterior prolapse, dysmenorrhea, and abnormal uterine bleeding underwent a hysteroscopy with dilation and curettage, levonorgestrel intrauterine device insertion, anterior colporrhaphy, MUS insertion using the TOT approach and cystoscopy. Eight weeks post-op, she presented to the emergency room with right inguinal and low back pain, difficulty ambulating, and fevers. Magnetic Resonance Imaging (MRI) of the right hip revealed inflammatory fluid collection within the adductor brevis with posterior extension to the right femur concerning for myositis. She was admitted to the hospital for 12 days on broad spectrum antibiotics with clinical improvement and discharged with 2 weeks of outpatient antibiotics. Follow up MRI showed near complete resolution of fluid collection in right adductor muscle. Patient consent was obtained for this case report.

We present a rare case of late-onset isolated myositis following TOT MUS. Conservative treatment with antibiotics with a multidisciplinary team is a reasonable approach and can lead to resolution of patient symptoms without need for repeated surgical intervention.

## Keywords

TOT sling, midurethral sling, myositis, stress urinary incontinence

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## Conflict of Interest Statement

The authors have no conflicts of interests.

## Cover Page Footnote

None.

## CASE REPORT

# Late-onset Isolated Myositis Following Transobturator Mid-urethral Sling: A Case Report

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### Abstract

Late onset of isolated myositis following a Transobturator (TOT) mid-urethral sling (MUS) is a rare post-operative complication.

A 38-year-old gravida 3 para 3003 with a long standing history of mixed urinary incontinence, Stage 2 anterior prolapse, dysmenorrhea, and abnormal uterine bleeding underwent a hysteroscopy with dilation and curettage, levonorgestrel intrauterine device insertion, anterior colporrhaphy, MUS insertion using the TOT approach and cystoscopy. Eight weeks post-op, she presented to the emergency room with right inguinal and low back pain, difficulty ambulating, and fevers. Magnetic Resonance Imaging (MRI) of the right hip revealed inflammatory fluid collection within the adductor brevis with posterior extension to the right femur concerning for myositis. She was admitted to the hospital for 12 days on broad spectrum antibiotics with clinical improvement and discharged with 2 weeks of outpatient antibiotics. Follow up MRI showed near complete resolution of fluid collection in right adductor muscle. Patient consent was obtained for this case report.

We present a rare case of late-onset isolated myositis following TOT MUS. Conservative treatment with antibiotics with a multidisciplinary team is a reasonable approach and can lead to resolution of patient symptoms without need for repeated surgical intervention.

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## 1. Introduction

Mid-urethral slings (MUS), the most commonly performed surgical procedure for the treatment of stress urinary incontinence (SUI), restores urethral-vaginal support but without any tension on the bladder neck or urethra. A Cochrane review in 2017 showed that both a transobturator tape (TOT) or tension-free vaginal tape (TVT) have similar efficacy, with 80% of women cured or reporting significant improvement of symptoms for at least up to five years after surgery.<sup>1</sup>

The overall complications from a TOT MUS are low, ranging between 1 and 2%.<sup>1</sup> Complications at the time of surgery include urethral injuries, vaginal perforations, cystotomy, and vascular injuries. Complications with a delayed manifestation include urinary retention, vaginal mesh exposure, bowel

injury, surgical site pain, and surgical site and urinary tract infections. Specifically, the rate of groin pain following TOT sling is estimated to be 1.6%.<sup>1</sup> Myositis and abscess are rare complications, limited to case reports and series. Infectious morbidity is high as it can lead to sepsis, bacteremia, osteomyelitis, and necrotizing fasciitis.

We present a rare case of delayed-onset myositis following TOT MUS insertion, managed conservatively with intravenous antibiotics. A 38-year-old non-smoker gravida 3 para 3 with a long-standing history of mixed urinary incontinence, stage 2 anterior prolapse, dysmenorrhea, and abnormal uterine bleeding underwent a hysteroscopy with dilation and curettage, levonorgestrel intrauterine device insertion, anterior colporrhaphy, TOT MUS, and cystoscopy. Other past medical and surgical histories were non-significant.

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The patient underwent general anesthesia and her operation was uncomplicated. The TOT sling was placed through the routine outside-in approach. The Desara® sling was previously soaked in diluted cefazolin solution before placement. The foley catheter was removed and cystoscopy confirmed no underlying bladder injury with normal ureteral jets. Foley catheter was placed aseptically and she passed her voiding trial in the Post Anesthesia Care Unit (PACU) and discharged home.

She reported no complications at her 3rd and 7th week post-op visits and her incontinence resolved completely. Her vaginal and groin incisions were appropriately healed. However, on post-op week 8 she reported subjective fevers, low back pain, right groin swelling, local erythema, and a draining right groin cyst unrelated to the surgical field (Fig. 1). She self-treated with over-the-counter steroid cream and the erythema and cyst gradually resolved. She subsequently presented to the ED complaining of five days of fevers, chills, right inguinal and hip pain, hip numbness, difficulties ambulating, and vaginal discharge.

Her presenting vital signs were notable for fever of 38.7 °C, heart rate 97 beats per minutes, and normotensive blood pressures. On physical exam there was no erythema or swelling of the right hip and no tenderness to palpation of the paraspinal, hip, groin, knee and thigh areas. She had limited range of motion of the hip secondary to pain. A speculum exam was performed showing white

creamy vaginal discharge, well healed anterior repair site, no evidence of vaginal mesh erosion, and no tenderness upon palpation of the mesh course in the vagina or groin areas.

Laboratory analysis revealed: leukocytosis of 14.5/uL (normal, 4–11 × 10<sup>3</sup>/uL), aspartate transaminase (AST) 72 U/L (normal, 7–37 U/L) and alanine transaminase (ALT) 140 U/L (normal, 10–49 U/L). Inflammatory markers: Erythrocyte Sedimentation Rate (ESR) 39 mm/h (normal, 0–20 mm/h) C-Reactive Protein (CRP) 270.2 mg/L (normal, 0–10 mg/L), and procalcitonin 0.24 ng/mL (normal, 0–1.99 ng/mL). Creatinine-Kinase (CK) levels were within normal limits. Urinalysis showed mild pyuria with 10–20 WBCs and bacteria but no leukocyte esterase and nitrites. Urine culture revealed mixed organisms. Blood cultures were negative. Vaginal swab was positive for *Gardnerella Vaginalis*.

CT abdomen/pelvis, pelvic ultrasound, and lumbar MRI were unremarkable for any pathology. A right hip MRI revealed moderate edema and thickening throughout the proximal right adductor musculature and pectineus, right obturator internus, with marked edema of the quadratus femoris (Fig. 2). Additionally, edema extended along the intermuscular fascial plane and to the adipose tissue surrounding the right sciatic neurovascular structures.

There were no drainable fluid collections and she was empirically started on broad-spectrum antibiotics with intravenous (IV) vancomycin and piperacillin-tazobactam. IV clindamycin was briefly added on Hospital Day (HD) two and three for potential toxin-mediated infection. Oral metronidazole was added on HD#4 for treatment of symptomatic bacterial vaginosis. On HD#6 she developed an acute kidney injury from vancomycin toxicity (elevated troughs) and antibiotics were switched to IV cefepime (HD#6) and oral linezolid (HD#7). Lastly oral clindamycin was added on HD#10.

A repeat right hip MRI on HD#6 showed near-complete resolution of edema and lobulated fluid collection in the right adductor muscle and edema along the right sciatic nerve. She remained in the hospital for 12 days with progressive clinical improvement and ability to ambulate with minimal pain. Fevers dissipated on HD#3. Transaminitis and inflammatory markers completely normalized. She was discharged with 2 weeks of outpatient antibiotics (ciprofloxacin, metronidazole, and linezolid). She received another 2 weeks of the same antibiotic regimen for persistent 10/10 pain not well managed with acetaminophen, non-steroidal anti-inflammatory, lidocaine patches, muscle relaxers, tramadol, and oxycodone.

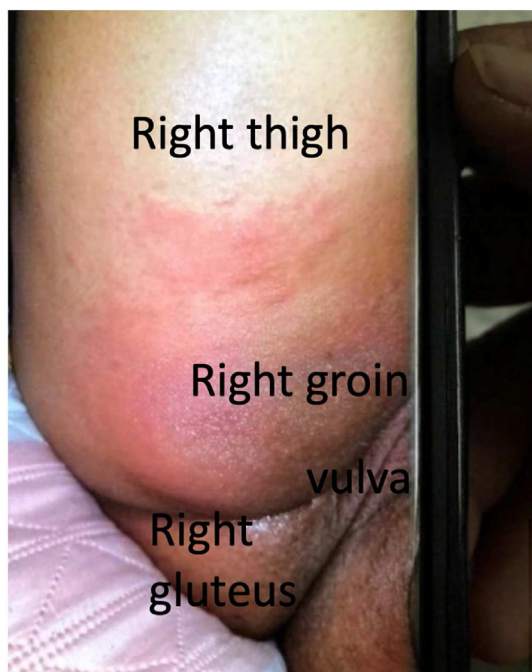


Fig. 1. Superficial infection of patient's right thigh.

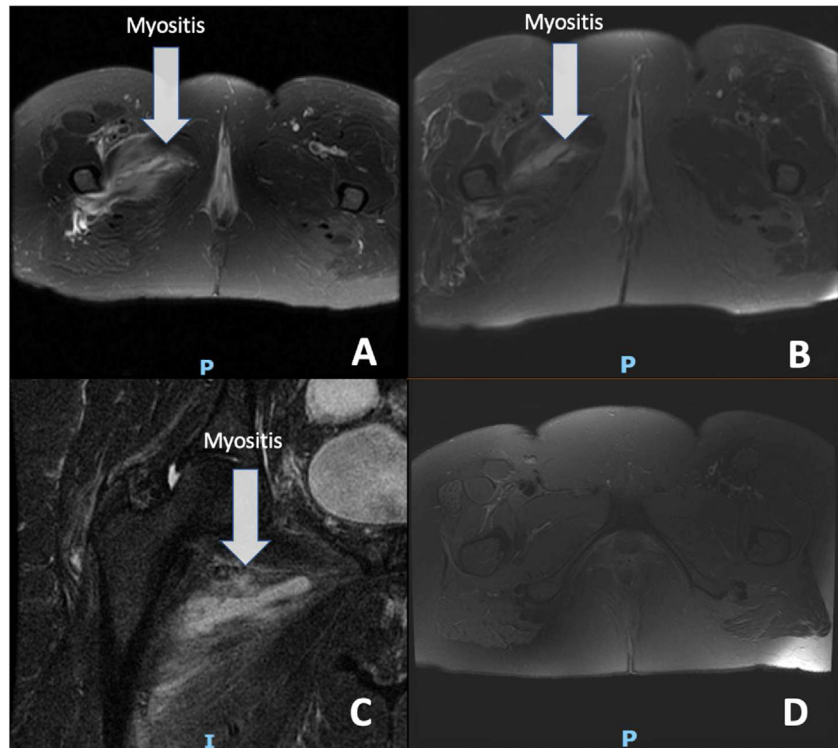


Fig. 2. (A) MRI of right thigh on admission showing significant myositis. Transverse (B) and coronal (C) views showing persistent but improved myositis and edema. (D) MRI 2 months afterwards showing near complete resolution.

Follow up MRI 2 months later showed near complete resolution with only trace foci of edema in the right adductor muscles and interval resolution of edema along the right sciatic nerve. She had no complaints of groin pain at her 5-month office visit.

## 2. Discussion

MUS is the most well studied surgical treatment for SUI that provide excellent surgical outcomes and overall low complications.<sup>1</sup> The largest study to date in England over an 8 year period estimated an overall complication rate of 9.8% (TOT, TVT, and suprapubic sling).<sup>2</sup> For TOT slings, overall complication rates range from 1 to 2%.<sup>1</sup> However, rare case reports of thigh abscess occurring up to five years post op and necrotizing fasciitis have been reported.<sup>3–6</sup> In these cases, vaginal mesh erosion were commonly present and ultimately required complete sling removal. Attempts at partial resection of mesh were shown to be inadequate as abscesses recurred or infection worsened.

Myositis with chronic groin pain and without abscess or mesh erosion remains a rare complication following TOT slings. A detailed history and diligent physical and speculum exam are necessary to evaluate severity of symptoms and to rule out vaginal mesh erosion. It is unclear if a skin abscess/cellulitis in the

patient's history was an inciting factor or manifestation of underlying myositis. An MRI is important to evaluate for myositis, abscess, and necrotizing fasciitis. A multidisciplinary team is crucial in medical management and surgical planning.

This case was a challenging clinical situation for the gynecological team as there are no formal guidelines on management. Since there was no drainable abscess or vaginal mesh erosion, and patient was satisfied with being continent and declined removal of the mesh, we elected for a more conservative approach with broad-spectrum antibiotics in conjunction with infectious disease team. Fortunately, this lead to resolution of sepsis and clinical improvement of her hip pain over several months. Mesh erosion and subsequent infection with abscess remains possible and would likely require complete removal of the mesh. Physical and occupational therapy were important adjunct factors in improving patients ambulatory status.

This case also highlights the importance of a multimodal approach to pain management and proper follow up as persistent thigh pain can lead to increased emergency room visits and hospitalizations as seen in our patient. One case series examined two patients who presented in the short post-operative period with severe groin pain and suspected damage or entrapment to a peripheral branch of the obturator



nerve. Pain symptoms rapidly improved after mesh removal, however paresthesia persisted.<sup>7</sup> It is unclear if this was present in our patient as she experienced pain without paresthesia. In addition, MRI had revealed edema that was tracking along the sciatic nerve bundle.

There is a paucity of data regarding long term risk of chronic pain following MUS insertion. A recent multicenter randomized control trial evaluated the long term efficacy and complications of MUS and showed that the majority of TOT patients reported no groin pain at 12 years follow up.<sup>8</sup>

Rardin et al. reported a complex case of necrotizing fasciitis following a TOT sling occurring 20 months after the initial surgery.<sup>5</sup> An initial mesh excision was performed and 14 months afterwards developed an abscess with evidence of necrotizing fasciitis requiring two extensive debridements. Five months later, the abscess had recurred and required another surgery to completely remove the sling as it had migrated behind the pubic ramus.<sup>5</sup>

Although it is surgically common to wait for inflammation to resolve before reoperation, it can lead to a more challenging mesh removal due to significant fibrosis leading to mesh migration and inadequate removal. However, TOT mesh removal from the thigh is a challenging surgery and requires specialized training and expertise not common to the majority of urogynecologists. This case shows that myositis without mesh erosion and abscess can be conservatively treated with IV broad-spectrum antibiotics without need for surgical removal in the appropriate selected patient.

### 3. Conclusion

Isolated myositis with persistent groin pain is rare complication following TOT slings and should be

routinely part of pre-operative patient counseling. Conservative management with broad-spectrum antibiotics is a reasonable option for patients without evidence of abscess or necrotizing fasciitis.

### Conflict of interest

The authors have no conflicts of interests.

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