Obturator Internus Tendinopathy with Underlying Bursopathy post T5-S1 discectomy: A Case Study

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Introduction

- Hip pain affects up to 14% of the general population over 60 [1]. Posterior hip pain including ischial/gluteal pain is a common patient presentation.
- Complex anatomy of the posterior hip and pelvis with supporting musculature provide a challenge to accurate diagnosis and treatment.
- There is increasing literature supporting obturator internus muscle, as well as its associated tendon sheath and underlying bursae, as a potential source of pain [2,3].
- Current literature for ultrasound-guided corticosteroid injections in the obturator internus tendon/bursae to treat gluteal/ischial pain is limited.
- Here, we present a case of a successful ultrasound-guided corticosteroid injection of the obturator internus tendon sheath/bursae for persistent ischial/gluteal pain.

Case Description

A 63-year-old female presented to the Physical Medicine and Rehabilitation clinic with a history of chronic low back, lateral hip, and ischial pain with irradiation to her right lower limb. Her past medical history included history of lumbar degenerative disc disease, grade 1 anterolisthesis at L4-L5, as well as L5-S1 disc extrusion status post discectomy years prior. Post-discectomy treatment included physical therapy, osteopathic manipulative therapy, trigger point injections, and a piriformis muscle corticosteroid injection, all providing minimal relief. She additionally underwent right L5 and S1 transforaminal epidural steroid injections, which alleviated her leg pain but did not affect her low back or ischial pain. EMG performed 2018 was suggestive of right S1 radiculopathy with abnormal H reflex.

Physical Examination

Upon evaluation, the patient denied loss of motor or sensory function of the bilateral lower extremities. Physical examination revealed tenderness to palpation over the right obturator internus muscle and ischium, negative straight leg raise tests bilaterally, and a positive FAIR test on the right.

Obturator Internus Muscle Anatomy

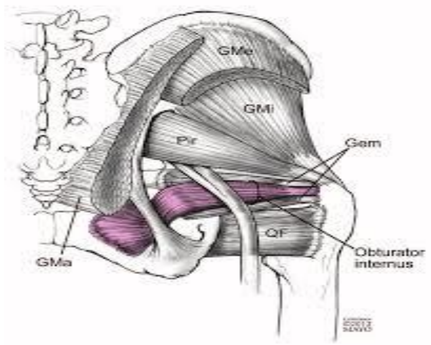

Figure 1. Drawing of posterior hip region highlighting course of obturator internus (purple) in relation to sciatic nerve and other hip external rotators [5].

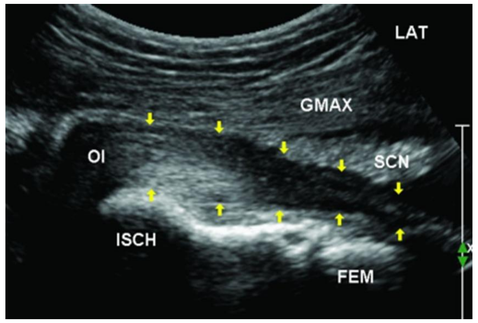

Figure 2. Ultrasound image of normal obturator internus (yellow arrows) anatomy with relationship to gluteus maximus (GMAX), sciatic nerve (SCN), ischium (ISCH) and femur (FEM) [5].

- The obturator internus originates widely from the margin of the obturator foramen, obturator membrane, iliac bone, and the base of the ischial spine [4]. The muscle then passes through the lesser sciatic formation, and inserts laterally along the medial aspect of the greater trochanter in combination with the tendons of the superior and inferior gemelli. See Figure 1 [5].
- Innervation to obturator internus muscle provided from nerve to obturator internus (L5-S2).
- To identify obturator internus under ultrasound: piriformis muscle in long axis view should be initially identified, then scan inferiorly until obturator internus muscle is visualized as it wraps around the ischium. Further confirmation can be achieved with internal rotation of the femur which will cause motion of the obturator internus muscle.

Management

Using a posteromedial approach, A 22-guage 3.5-inch needle was inserted in-plane to ultrasound transducer and longitudinal to obturator internus muscle belly, Figure 3. The obturator internus bursa and tendon sheath were injected with 2mL of 1% lidocaine, 2mL of 25% Bupivacaine, and 1mL of Triamcinolone 40mg/mL. The patient reported immediate relief of her low back and ischial pain, as well as ongoing complete resolution of her pain at 1 and 5 month follow up appointments.

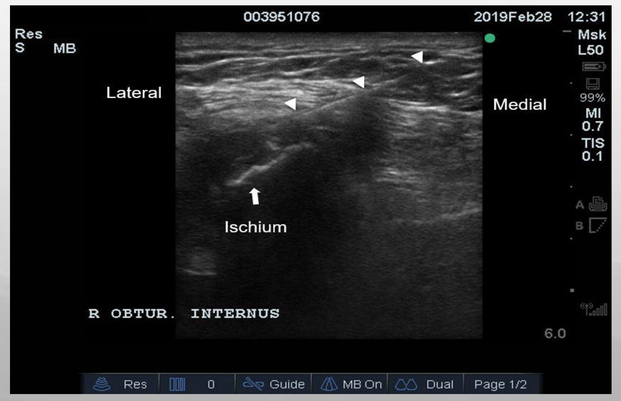

Figure 3. Solid arrowheads highlight path of needle from lateral to medial

Discussion

•This case highlights successful treatment of persistent ischial/gluteal pain presumed due to obturator internus tendiopathy/bursopathy with ultrasound-guided corticosteroid injection to obturator internus tendon sheath and underlying bursae.

•While there has been a recent increase in literature supporting obturator internus tendon sheath and underlying bursae as source of ischial/gluteal pain [1-2], further studies are needed.

•This case brings to question obturator internus tendinopathy/bursopathy as cause for ischial/gluteal pain in S1 radiculopathy given innervation of muscle.

•Obturator internus tendinopathy is an uncommon problem among common presentation of ischial/gluteal pain. Careful examination of maneuvers for pain exacerbation (hip internal rotation in this case) and complete ultrasound evaluation of posterior hip led to precise diagnosis.

•Limitations of this study include being single case report of a single ultrasound-guided tendon sheath/bursae injection. Further studies with larger patient populations ultimately needed to validate results.

Conclusion

•Obturator internus tendinopathy/bursopathy can be a cause of ischial/gluteal pain

•Ultrasound-guided corticosteroid injection to obturator internus tendon sheath and underlying bursae is an effective treatment of persistent ischial/gluteal pain in a patient with S1 radiculopathy and pain secondary to obturator internus tendinopathy/bursopathy, along with therapeutic exercise.

References

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