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Case Report

Percutaneous transgluteal computed tomography-guided aspiration of obturator internus pyomyositis in adolescent athlete: A case report and literature review

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ARTICLE INFO

Article history:

Received 30 June 2018

Revised 19 July 2018

Accepted 3 August 2018

Keywords:

Obturator Internus Pyomyositis
CT-guided aspiration
pyomyositis

ABSTRACT

Pyomyositis is an uncommon infection of muscle that is usually managed conservatively, but, can progress to abscess formation requiring open surgical drainage. We present the first reported case of a 14-year-old male with obturator internus pyomyositis requiring computed tomography-guided percutaneous transgluteal drainage for the management of a right obturator internus abscess. We present this case report to provide an alternative to the open surgical management of abscesses from pyomyositis by means of successful computed tomography-guided drainage.

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Introduction

Pyomyositis is an uncommon infection of muscle that presents with nonspecific signs and symptoms that may mimic other, more common diseases [1–4]. Diagnosed early, successful treatment can be achieved with several weeks of appropriate antibiotics, rest, and no residual functional deficits [1–5]. Given a delay of days to weeks, pyomyositis can

progress to abscess formation with resultant challenges in treatment and complications of bacteremia including septic shock [1,2,4] and death [1].

Case

A 14-year-old African-American male initially presented to the emergency department with right thigh pain and painful

Declarations of interest: None.

Competing interests: Authors have no competing interests.

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<https://doi.org/10.1016/j.radcr.2018.08.007>

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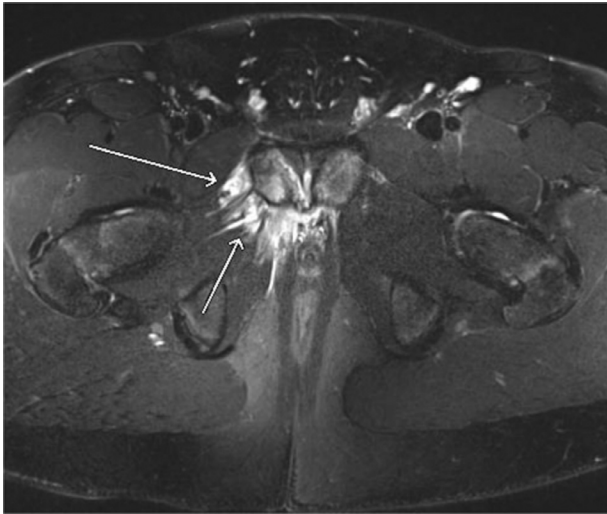


Fig. 1 – Axial T2 fat-saturated postgadolinium MRI demonstrates edema and intramuscular tears involving the right obturator internus and externus muscles and mild widening of the right pubic bone apophysis with edema at the superior ramus. MRI, magnetic resonance imaging.

ambulation but no fever. He was otherwise healthy with no significant past medical history or trauma but had developed pain upon doing butterfly stretches as part of his football conditioning routine the day before presentation. Pain was then described as a pulling sensation on active and passive movement, otherwise full range of motion was present. Initial workup showed mild leukocytosis to $14,500/\mu\text{L}$ with 59% polymorphonuclear cells, erythrocyte sedimentation rate (ESR) of 10 mm/h, and C-reactive protein (CRP) of 5.7 mg/dL. Outside hospital computed tomography (CT) of his pelvis with and without contrast revealed a concerning area of pelvic bone. Magnetic resonance imaging (MRI) of the pelvis with contrast, subsequently performed to rule out osteomyelitis and osteosarcoma, showed intramuscular tears and edema involving the right obturator internus and externus muscles, and mild widening of the right pubic bone apophysis with edema at the superior ramus (Fig. 1). He was initially thought to have osteitis pubis so he was discharged with crutches, 600 mg ibuprofen as needed for pain and instructions to avoid sports and follow-up with sports medicine in 1 week.

He was readmitted to the hospital after 4 days with worsening symptoms of abdominal and thigh pain causing an inability to walk. Since his prior admission, he had additionally developed worsening pain in both shoulders and generalized myalgias, malaise, emesis, and diarrhea. Vitals demonstrated tachycardia and tachypnea, otherwise he was afebrile and normotensive. Physical exam was notable for limited range of motion at the right hip due to pain, diffuse tenderness to palpation in all quadrants of the abdomen without distension or rebound, and no focal neurologic deficits.

Upon workup, labs were significant for a white blood cell count of $12,100/\mu\text{L}$ with an ESR of 59 mm/h and CRP of 20.7. CT of the abdomen and pelvis with contrast showed a right obturator internus muscle fluid collection with enhancement

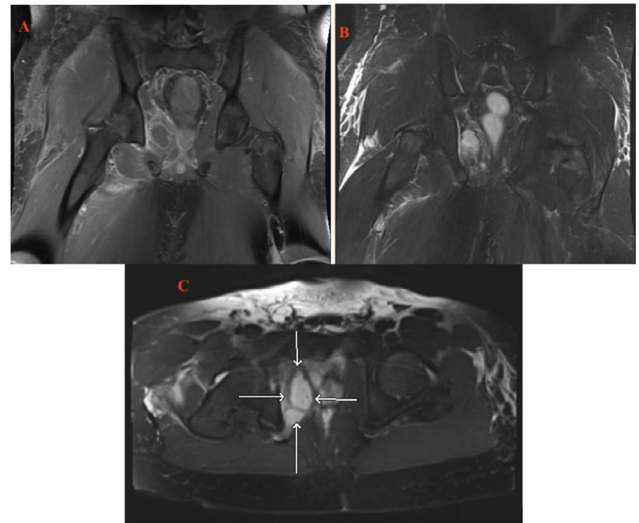


Fig. 2 – Coronal MRI postgadolinium T1 fat-saturated (A) and STIR (B), and axial T2 fat-saturated (C) showing: abscess in right obturator internus muscle, myositis in right external obturator muscle with involvement of abductor magnus and anteromedial right gluteus minimus, abnormal fluid signal intensity along medial aspect of right pubic bone and pubic symphysis concerning for abscess development and extension into pubic symphysis, and right pubic bone osteomyelitis. MRI, magnetic resonance imaging.

at the site of the muscle tear. He was empirically given 1 gram of ceftriaxone and started on intravenous vancomycin for a suspected infectious process in the emergency department. He was admitted to the intensive care unit for further observation.

In the intensive care unit, oxacillin and clindamycin were added to his antibiotic regimen, and blood and urine cultures were ordered. Urine cultures showed no growth, but blood cultures yielded methicillin sensitive *Staphylococcus Aureus* (MSSA) on day 2 in the intensive care unit, at which point vancomycin was discontinued. MRI of the left shoulder and repeat MRI of the pelvis showed myositis in the left shoulder and an enlarging $5.4 \times 2.4 \times 3.8 \text{ cm}^3$ fluid mass in the right obturator internus muscle with osteomyelitis of the right pubic bone (Fig. 2).

He was continued on IV oxacillin and clindamycin, and his daily blood cultures remained positive for three consecutive days after which they stayed negative for 2 days before discontinuation of blood cultures. Patient then underwent abscess drainage by interventional radiology on day 5 of readmission.

In preparation for the drainage procedure, the patient was placed in prone position and localizing images were performed using preprocedural CT that redemonstrated a $5.3 \times 2.2 \text{ cm}^2$ hypodense region in the right obturator internus muscle (Fig. 3). Using CT guidance, a 15-cm One-Step needle was advanced into the hypodense abscess via the transgluteal, infrapiriformis approach, and 5 cc of a cloudy, tan-colored fluid was collected for culture and sensitivity analysis. The sheath was then extended and the needle removed. Next, a

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