



Case Report

Athletic pubalgia misdiagnosed as lumbar radiculopathy – A case report

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ABSTRACT

Background: Athletic pubalgia is a painful complex syndrome encountered by many athletes involved in sports. Multiple pathologies often coexist, and many systems can refer pain to the groin. The current case reflects the failure to distinguish pubalgia from lumbar radiculopathy.

Case Description: Originally, a 47-year-old male with left-sided inner thigh pain was diagnosed as having a L3-4-disc herniation and spinal stenosis; he underwent a L3-4 and L4-5 laminectomy/discectomy. For 2 years postoperatively, the pain persisted. Ultimately, he underwent surgical reinsertion of the adductor muscle and experienced immediate and sustained pain relief.

Conclusion: This case report highlights how pubalgia may be misdiagnosed as a lumbar disc herniation and may inadvertently lead to unnecessary lumbar surgery.

Keywords: Adductor muscle, Athletic pubalgia, Groin pain, Lumbar, Radiculopathy

INTRODUCTION

Athletic pubalgia (AP) is a tendinopathy characterized by a breakdown of the pelvic stabilizers at the confluence of the rectus abdominis insertion, adductor origin, and pelvic floor at the pubic ramus. It is a common sports-related injury (e.g., ice hockey and soccer). Acute injury is associated with extension of the trunk, and concomitant abduction of the hip. There is a significant correlation of AP with hip disease, especially femoroacetabular impingement.^[2]

The current case reflects the failure to distinguish pubalgia from lumbar radiculopathy which led to an unnecessary lumbar laminectomy L3-4 and L4-5 and discectomy.

CASE DESCRIPTION

A 47-year-old male presented with low back, left groin pain, and lateral hip pain exacerbated by sitting and getting up from a sitting position. He was originally diagnosed with a lumbar disc herniation at the L3-4 and L4-5 levels plus spinal stenosis and underwent a L3-4 and L4-5 laminectomy/discectomy. The postoperative course was complicated by headaches secondary to intracranial hypotension from a cerebrospinal fluid leak that required repair on three separate occasions (reoperations).

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Two years of persistent groin pain and postoperative lumbar magnetic resonance (MR) positive for arachnoiditis

For 2 years following these procedures, he continued to complain of the intense left-sided inner thigh pain. The postoperative lumbar MR imaging (MRI) showed postsurgical changes without significant spinal stenosis, but adhesive arachnoiditis (e.g., clumping of the lumbar nerve roots) and a residual pseudomeningocele [Figure 1]. The electromyography demonstrated right mid and lower lumbar paraspinal irritation.

Second opinion surgeon diagnosed on MR of the hip-adductor muscle tear

A second opinion surgeon requested an MRI of the hip (e.g., first author) that revealed edema, a partial thickness tear, severe sprain of the adductor muscle of the hip, and partial

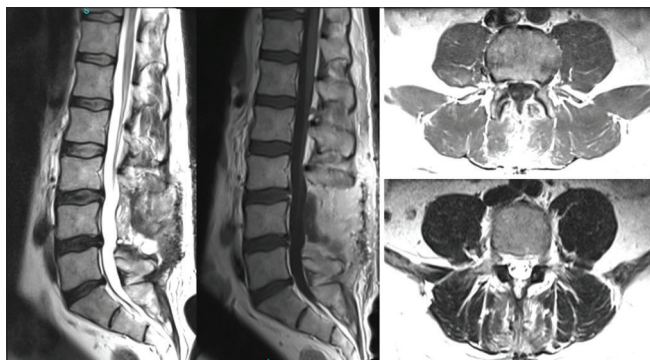


Figure 1: T1 and T2 sagittal and axial magnetic resonance imaging of the lumbar spine showing postoperative L3-4 and L4-5 decompressive laminectomy with wide central canal and neural foramina and postoperative pseudomeningocele.

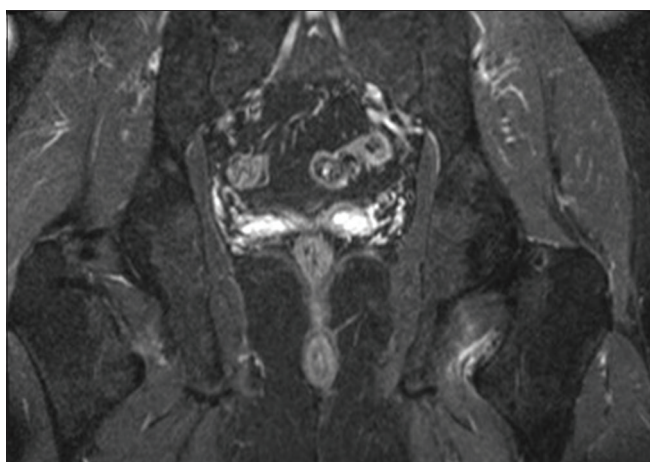


Figure 2: Magnetic resonance imaging of the hip showing edema within adductor muscles extending to the left lesser trochanter, there is a partial thickness tear and severe sprain of the adductor muscles of the left hip.

thickness tear of the origin of the left common hamstring tendons – the true cause of the left thigh pain Figure 2.

There was also some evidence of a hip labral tear, secondary to underlying femoroacetabular impingement. The physical examination was also notable for tenderness along the inner aspect of the thigh, pain on straight leg raising on the left, tenderness with hip abduction, and flexibility limited to 50–70%. Subsequently, he underwent surgical reinsertion of the adductor muscle and experienced immediate and sustained relief of his symptoms.

DISCUSSION

Definition and clinical presentation of pubalgia: a sports-related injury

AP, sometimes called “sports hernia,” occurs due to a strain or tear of the adductor muscle group. It typically presents as pain, sometimes severe and disabling along the inner aspect of the thigh and groin, and typically follows an acute injury or a repetitive eccentric load the trunk flexors and hip adductors. Tenderness to palpation of the adductors reproduces pain in 36% of athletes around the pubic ramus; pain is variously elicited with resisted adduction and resisted sit-ups. With acute injuries, there is also associated swelling. Note, this all occurs without an inguinal hernia being present.^[3]

Pathophysiology

The pathophysiology of pubalgia is attributed to an injury to where the rectus and adductors attach to the Pubic ramus and pelvic floor. Here, functional overuse, and microtrauma (e.g., caused by traction induced on the muscle attachments during sudden sharp changes in direction, repetitive kicking and lateral motions), result in this injury. The literature shows improvement with return to physical activities after surgery in >80% cases.

MR findings of pubalgia

MRI with gadolinium may confirm the diagnosis or differentiate between adductor strain, osteitis pubis, and a sports hernia.^[4,5] On MRI, adductor injury is best demonstrated by hyperintensity on fat-saturated fluid sensitive sequences within the tendon and/or muscle belly secondary to disrupted fibers. Bony edema around the pubic symphysis, fractures, or avulsions can also be seen. Although a secondary cleft sign (a continuation between a physiological central fluid-filled cleft and a pathological secondary cleft within the symphyseal fibrocartilage seen on short T1 inversion recovery coronal images) is also a frequent finding among patients, it is unclear whether this represents a breach in the rectus abdominis tendon insertion extending into the adductor tendon origin or is the result of chronic abnormal stress on the pelvic ring.

Table 1: Differential diagnostic between pubalgia and lumbar radiculopathy.^[1,4]

Characteristics	Athletic pubalgia	Lumbar radiculopathy
Location of the pain	“Deep” groin or lower abdominal pain with exertion	Medial thigh and medial knee
History	Repetitive kicking, quick starts, changes in direction	Pain/sensory deficits unrelated to sports or trauma
Exacerbating symptom	Increased symptoms resisted sit-up, hip adduction at 0.45 and/or 90° hip flexion, abdominal curl-up	Provocative maneuvers – SLR – worse radiculopathy/pain
Physical examination	Tenderness pubic tubercle – pelvic floor weakness and surrounding musculature Adductor/hip flexor weakness dynamic movement	SLR positive Motor strength deficits Sensory deficits
Gait	Dysfunction with movement pelvis/femoral alignment of lower extremities Trendelenburg gait or abductor lurch	Antalgic gait, leaning and limping on the affected limb owing to exacerbation of nerve compression with weight-bearing
MRI signs	Rectus disruptions are seen as a cleft sign with increased signal on T2-weighted images at the rectus abdominis/adductor aponeurosis	Anatomy of the root sleeve

SLR: Straight leg raising, MRI: Magnetic resonance imaging

Misdiagnosis with lumbar disc disease

Patients with pubalgia may be misdiagnosed as having lumbar disc herniation, particularly as then present with groin pain and thigh pain. Table 1 here, the lack of significant lumbar MR findings should indicate that lumbar surgery is not warranted.

CONCLUSION

AP is very common among people participating in sports. Spine surgeons should familiarize themselves with AP when evaluating patients complaining of inner thigh pain. They should learn to differentiate these patients from those with lumbar disc herniation warranting lumbar surgery.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms.

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Conflicts of interest

There are no conflicts of interest.

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