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Distal rupture of the adductor longus in a skier☆,☆☆

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ABSTRACT

Acute adductor longus ruptures occur infrequently and have been rarely described in the literature. Schlegel et al. reviewed a series of adductor longus tendon ruptures and found that all ruptured proximally. A 42-year-old man with right hip pain 3 weeks following a skiing injury underwent magnetic resonance imaging (MRI), which demonstrated a distal adductor longus avulsion. The diagnosis of acute adductor longus injury can be difficult on physical examination alone, but MRI can accurately depict the site of injury. Surgery may be indicated for a proximal avulsion, but a distal injury may heal with nonoperative treatment, as in our case.

1. Introduction

The adductor longus muscle is a small triangular-shaped muscle, which originates from the pubic body and inserts onto the middle of the linea aspera of the femur (Fig. 1). Acute tears of the adductor longus occur infrequently and have rarely been described in the literature. Schlegel et al. retrospectively reviewed adductor longus tendon ruptures in 19 National Football League (NFL) players from 1992 to 2004 documented by magnetic resonance imaging (MRI). They found that all of the tendon ruptures occurred proximally, and 14 of the 19 adductor longus injuries were treated non-operatively [1]. To the authors' knowledge, no study has documented a distal avulsion of the adductor longus with MRI. Moreover, there is only one documented case of a distal avulsion, which was reported by Dr. Symeonides, an orthopaedic surgeon in Greece, in the early 1970's [2].

2. Case report

A 42-year-old male presented with right hip pain 3 weeks following a hyper-abduction type skiing injury. At the time of injury, sharp pain and a tearing sensation extended superiorly from the medial aspect of the knee to the groin.

On examination diffuse bruising was noted over the medial thigh, and there was a tender palpable defect in the region of the adductor longus. Hip range of motion included 100° of flexion, 10° of internal rotation and 45° of external rotation. Adductor strength was mildly weaker (4+/5) compared to the contralateral side.

Radiographs showed large anterosuperior cam lesions (Fig. 2). Although a proximal adductor injury was suspected, an MRI of the right hip demonstrated distal avulsion of the tendon (Fig. 3) along with extensive intramuscular edema and a fluid collection/hematoma in the tendon gap. The adductor longus origin was intact.

Conservative management included rest and rehabilitation aimed at a return to full sporting activity within a 4 month time frame. At 3 weeks, the swelling and ecchymosis decreased, and the patient was bearing full weight on the right hip. Mild pain persisted with palpation. At 5 months, the patient reported no pain and adductor strength was 5/5 on physical examination. Follow-up MRI demonstrated scar formation at the insertion with markedly decreased edema in the distal aspect of the muscle (Fig. 4). At that time, the patient was encouraged to resume all activities.

3. Discussion

The complex anatomy of the hip region complicates diagnosis of acute adductor longus injuries with physical examination alone [3]. MRI can significantly aid in the diagnosis of adductor longus injury. In our case, MRI also documented healing of the muscle insertion. In cases where adductor injury is suspected, the authors recommend an

☆ Each author certifies that his or her institution has approved the reporting of these cases, that all investigations were conducted in conformity with ethical principles of research.

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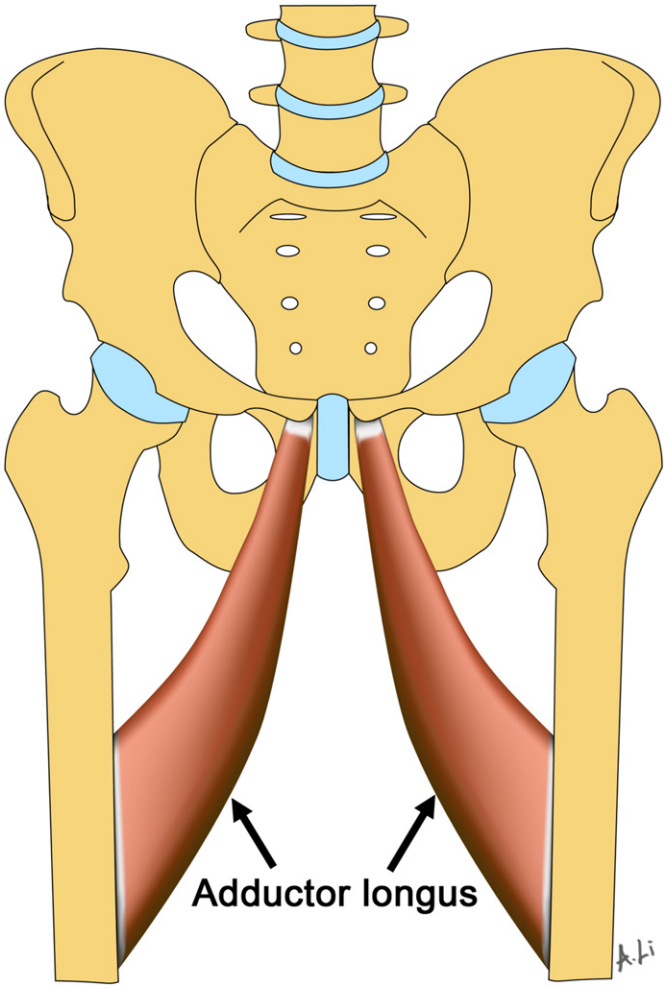

Fig. 1. Illustration demonstrates the broad distal insertion of the adductor longus onto the linea aspera of the femur.

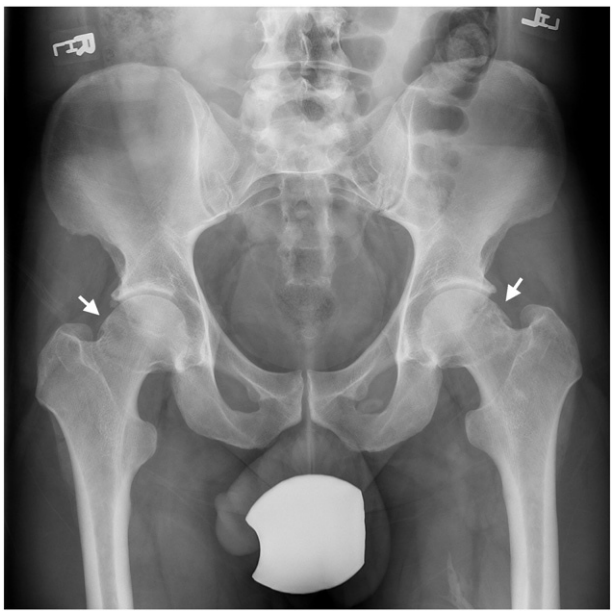

Fig. 2. AP radiograph of the pelvis, in a 42-year-old male with right hip pain 3 weeks following a skiing injury, demonstrates no acute osseous abnormality. Note is made of bilateral cam lesions (white arrows).

initial large field of view (with coverage from the pelvis to the thigh), fluid sensitive sequence to localize the site of injury. The more common, albeit infrequent, proximal avulsions off the pubic body are well visualized on coronal images of the pubis (Fig. 5). The coronal images are helpful in determining the degree of tendon retraction and can provide a road-map for the orthopaedic surgeon.

Although no literature is available on the management of distal adductor longus avulsions, support for both nonoperative and surgical management of proximal injuries is published in the literature [4–7]. Rizio and Vogt described successful surgical reattachment of the tendon using suture anchors [8,9] while Sangwan reported successful results with excision of the ruptured muscle mass [10]. Yet Schlegel demonstrated that nonoperative treatment resulted in a significantly faster return to play [1]. Cadaveric studies have suggested that the small cross-sectional area of the proximal adductor longus tendon may contribute to the difficulty associated with repair [11].

In our case of a distal adductor longus rupture, conservative management yielded a good clinical outcome. Follow-up MRI at 5 months post-injury demonstrated scarring of the muscle to the linea aspera with resolution of the edema and fluid collection/hematoma. Given the dearth of evidence in the literature, treatment of this rare injury must be individualized. Patient characteristics, particularly age and activity profile should be considered, as should the degree of tendon retraction. With a suspected adductor injury, MRI is excellent for localizing the site of injury. The distinction between a proximal and distal injury is critical in the surgical decision-making process. More case series are warranted to determine the optimal treatment for distal ruptures of the adductor longus muscle.

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