

# Rare Case of Distal Complete Adductor Longus Muscle Tear

Ajmal Shad CM<sup>1</sup>, Jinu CK<sup>1</sup>, C.K. Vasu<sup>2</sup>, Pavithran<sup>2</sup>

## ABSTRACT

**Introduction:** The adductor longus muscle is a triangular shaped long muscle. The Subtotal or total ruptures of the adductor longus muscle are rare and only minimal number of cases are reported in the literature.

**Case report:** We present a case of 37 years old male patient complaining of swelling in the medial upper and mid aspect of the right thigh and diagnosed as distal complete right adductor longus muscle tear.

**Conclusion:** The adductor longus can be torn or over-stretched, which is commonly known as a groin pull. The adductor longus is one of the major muscles that receives nerves from the lumbar plexus, along with the adductor brevis, adductor magnus, gracilis, and obturator externus muscles.

**Keywords:** Adductor longus muscle, Magnetic resonance imaging (MRI), Trauma, Ultrasound

## INTRODUCTION

The adductor longus muscle is a triangular shaped long muscle. The muscle originates from the ramus of the pubic bone and is inserted to the middle part of the femur at the linea aspera. The Subtotal or total ruptures of the adductor longus muscle are rare and only minimal number of cases are reported in the literature. Previous history of trauma helps in the diagnosis and patient may also give history of swelling in the region of thigh.

Since only few cases are reported in the literature we present an interesting case of distal complete adductor longus muscle tear.

Ultrasound remains a popular imaging modality for the assessment of muscle injury and has some advantages over MR, Magnetic resonance (MR) imaging has been applied to muscle injuries for more than a decade.<sup>1,3</sup> MR imaging has become a valuable tool for evaluation of traumatic muscle injuries.

## CASE REPORT

We present a case of 37 years old male patient, Department of radiology, KMCT Medical College, Mulkam, Kozhikode, Kerala complaining of swelling in the medial upper and mid aspect of the right thigh.

According to the patient, swelling is seen only at the time of flexion and he gives history of trauma 10 years back, even though patient had pain at that time, now patient only gives history of swelling.

On clinical examination adductor longus muscle contraction against resistance showed swelling in the medial proximal aspect of thigh. Ultrasound was done for the same and showed no mass or collection and later MRI was done.

MRI showed absence of the right adductor longus muscle bulk in the in its expected medial location towards the femoral shaft as compared to the opposite side, and muscle also appears retracted (fig.1 and fig.2) and bunched up along with minimal altered signal intensity of adductor longus muscle in STIR sequences

as compared to other side and diagnosed as distal complete right adductor longus muscle tear. Conservative treatment was started with physiotherapy after the diagnosis.

## Anatomy

The adductor longus muscle is a hip abductor muscle located in the inner thigh. The muscle originates in the superior aspect of the pubis, below the pubic tubercle. It inserts at the middle third of the linea aspera of the femur along the medial lip.

## DISCUSSION

Groin injuries are one of the most common injuries in team sports. Despite their high incidence there are only very little literature available on imaging and diagnosis in acute groin injuries. It is said that adductor longus muscle strain is one of the most common acute muscle strain injury.

In this case study we describe a rare case of distal complete adductor longus muscle tear. History of trauma plays an important role in the diagnosis of such cases.

A typical trauma mechanism is an eccentric overload caused by forced abduction during contraction of the adductor muscle group.<sup>4</sup> Besides the pain, a hematoma and weakness of the adductors are the other associated findings. In cases with a tumor-like swelling in the proximal medial part of the thigh, an old rupture of the adductor longus muscle should be considered if there is a history of previous trauma.<sup>5</sup> There is only minimal literature available about the treatment of an isolated rupture of the adductor longus.

Schlegel et al. Treated 19 national football league patients with adductor longus rupture, of which 14 underwent conservative treatment and 5 underwent surgery.<sup>6</sup> A study by mann et al. Showed that the adductor longus had minimal activity during sprinting. In most of the intramuscular injuries with tears, conservative treatment is the first choice of treatment<sup>7</sup> Surgical interventions are preserved in patients, complicated with the onset of myositis ossificans or in the acute phase associated with an acute compartment syndrome.<sup>7</sup> Ultrasound is considered as the primary investigation modality, and MRI is used for confirmation.

Based on the severity of the injury it is classified into four grades: 1. Grade 0 injuries (clinical acute groin injury with no radiological abnormality), 2. Grade I (edema without architectural disruption), 3. Grade II (oedema with architectural disruption/partial tear) and 4. Grade III injuries (complete tear).

<sup>1</sup>Assistant Professor, <sup>2</sup>Professor, Department of Radiology, KMCT Medical College. Manassery Mulkam, Kozhikode, Kerala, India

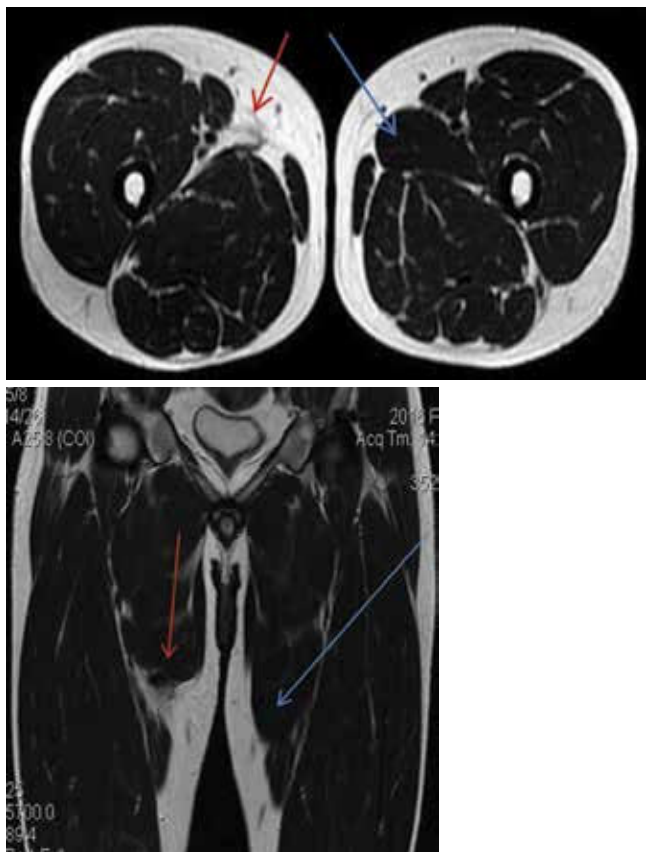
**Corresponding author:** Dr. Ajmal Shad CM, Assistant Professor, Department of Radiology, KMCT Medical College, Mulkam, Kozhikode, Kerala, India

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**Figure 1 and 2:** Axial (fig.1) and Coronal (fig.2) T2WI images of the thigh shows absence of the muscle bulk in its expected medial location on right side (red arrow) as compared to the normal left side (blue arrow). Muscle in the right side is also seen retracted and bunched up.

## CONCLUSION

Adductor longus is most frequently injured muscle, however only few cases are reported in the literature. History of trauma and MRI plays a vital role in the diagnoses.

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