

ISOLATED TRAUMATIC RUPTURE OF THE ADDUCTOR BREVIS MUSCLE IN AN AMATEUR SOCCER PLAYER (CASE REPORT)

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SUMMARY

An acute tear of the adductor brevis tendon is an uncommon injury. This is one of the youngest amateur soccer player reported with adductor muscle rupture; an entity seen predominantly in middle-aged people. In this case; grade-2 traumatic rupture of the adductor brevis tendon is reported. Excising the mass was suggested, but conservative treatment followed upon patient's disapproval.

Key words: Adductor brevis, muscle rupture, groin pain, soccer

ÖZET

AMATÖR FUTBOLCUDA ADDUCTOR BREVIS KASININ İZOLE TRAVMATİK RÜPTÜRÜ (OLGU SUNUMU)

Nadir gerçekleşen ve genellikle orta yaşlı popülasyonda gözlenen adductor brevis kası rüptürü, literatürde bilinen en genç amatör futbol oyuncusu olgusu olarak sunulmaktadır. Burada adductor brevis tendonu için 2nci dereceden travmatik rüptür söz konusudur. Kitlenin çıkarılması önerilmiş, ancak olgunun istekli olmaması üzerine konservatif tedavi uygulanmasına geçilmiştir.

Anahtar sözcükler: Adductor brevis kası, kas rüptürü, kasık ağrısı, futbol

INTRODUCTION

The adductor brevis is a leg muscle that lies just behind the adductor longus. Anatomically, it originates from the anterior surface of the inferior pubic ramus, inferior to the origin of adductor longus. It is inserted on

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the pectineal line, at the superior part of the medial lip of linea aspera. It is innervated by the anterior or posterior division of the obturator nerve (L2, L3, L4). The obturator artery and medial circumflex femoral artery provide blood supply to the adductor brevis muscle. Its action is to adduct and flex the thigh, and to help its lateral rotation.

The adductor brevis is a member of the adductor muscle group, together with the pectineus, the adductor longus, the gracillis, and the adductor magnus. The pectineus, adductor brevis and adductor longus muscles are called “short” adductors, and connect the pelvis to the thigh bone. The gracillis and adductor magnus are called “long” adductors, and go from the pelvis to the knee. The main function of these muscles is to pull the legs together. They are also used quite a lot in sprinting, twisting or kicking an immobile object.

The psoas major, pectineus, adductor longus and brevis muscles are able to rotate the thigh inwards as well as outwards. Their rotating function depends on the specific position of flexion-extension and abduction-adduction of the hip joint. Flexion and abduction intensify the lateral rotating function of these muscles; extension and adduction intensify the medial rotating function.

Grading for groin strain is such that (2): grade-1 causes mild discomfort, little tenderness at particular point, with no swelling; grade-2 is more painful with swelling, pain upon touching, reduced range of motion and causing interference with running; grade-3 is very painful, with lots of swelling and total inability to run or even walk. The present case was grade-2, and was injured while playing football (12).

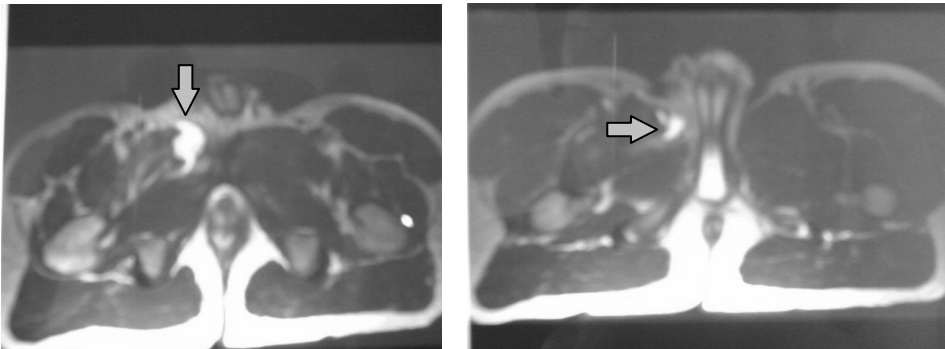
Computerized tomography (CT), MRI (3), ultrasonography (US) have been widely adopted to diagnose muscle/tendon injuries of the groin. US has been shown to be accurate and sensitive in diagnosing tendon injuries in the groin region, especially the small partial ruptures of the muscle/tendon unit. It has the advantage of being fast, inexpensive and widely available (14).

Before MRI was available; US, radio-scintigraphy and CT were used to assess muscle trauma. The high degree of soft tissue contrast and multi-planar capability of MRI allow direct visualization as well as characterization of traumatic muscle lesions (18). MRI is an important choice in assisting clinicians to make correct diagnosis concerning the patient who applies with groin pain (4). Although tear of the adductor brevis muscle tendon is an uncommon injury; radiologists should be aware of this entity to assist a diagnosis that is usually unsuspected clinically.

CASE

A 27-year-old male applied to our clinic suffering pain in his left thigh and groin (5,9,11,16), with trauma history during a football match played a month ago. Forced abduction in lower left extremity with sudden sharp pain in the groin area and inability to adduction was defined (6,12). Upon clinical examination; bruising, swelling, gap in the adductor muscle were found. Abduction and adduction were painful in the extremity. Manual muscle strength test of the adductor groups were rated at 4/5 with resisted adduction, and identical to the opposite side (8). The most consistent clinical test was focal tenderness upon palpation and pain with resisted side flexion towards the painful location.

X-ray and magnetic resonance imaging (MRI) were obtained. There was no evidence of avulsion fracture and calcification (17) in the X-ray. MRI (Figs. 1-5) demonstrated isolated rupture of the adductor brevis muscle. Excising the mass was suggested, but the patient did not comply.



Figures 1-2. Axial MRI views of total rupture of the right adductor brevis

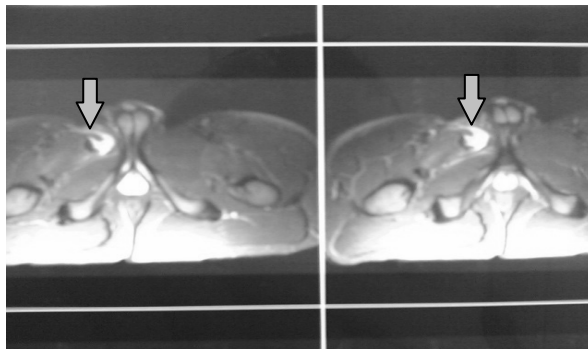


Figure 3. Consecutive axial MRI cross-sections demonstrating total rupture of the adductor brevis muscle

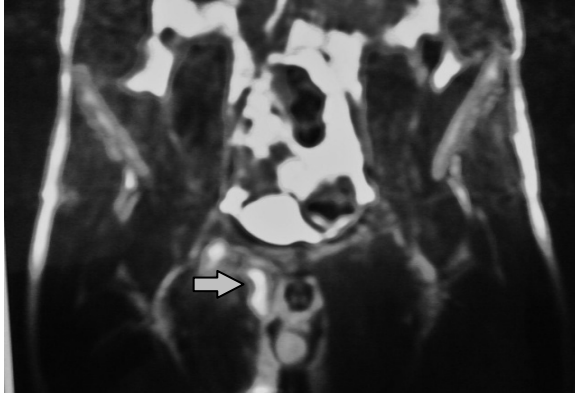


Figure 4. Coronal MRI view of total rupture of the adductor brevis muscle

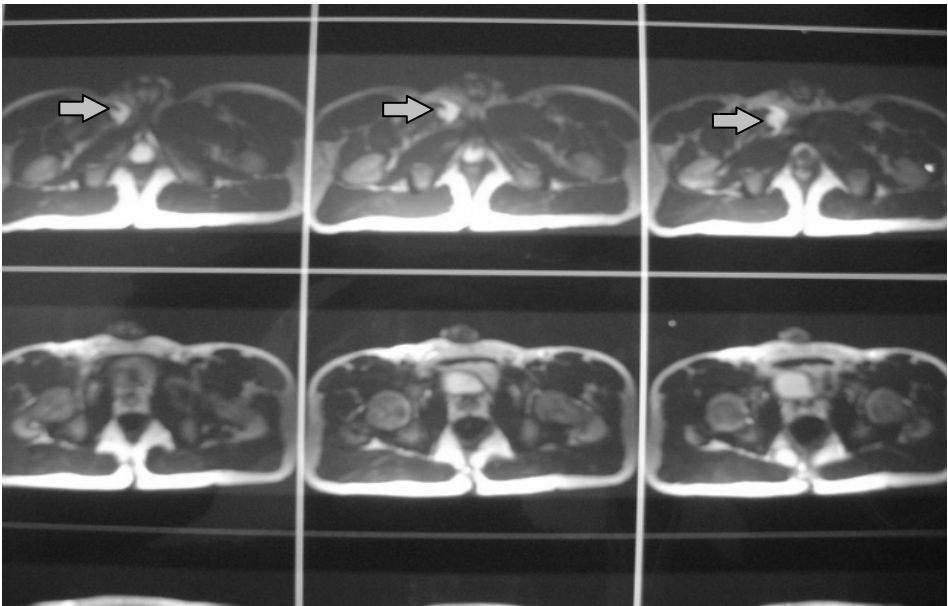


Figure 5. MRI Comparison of the ruptured and intact adductor brevis muscles

DISCUSSION

Sports related injuries of the lower extremity are frequent. RICE (rest, ice, compression, elevation) prescription is the initial treatment of acute injury (15). All authors recommend primary repair of acute tears, and excision of ruptured muscle mass in late cases (1,13). Clinicians recommend active training programme (10), along with completely restoring strength of the adductor muscle group, which is the key to

successful rehabilitation (7). Surgical intervention is to be considered if non-operative treatment fails for six months or longer. The present case has preferred only non-surgical treatment.

Besides the basic RICE conservative treatment; analgesic, anti-inflammatory and myorelaxant medication were applied for three weeks. The patient underwent an orthopaedic rehabilitation program for 15 sessions of an hour each in the Physical Treatment and Rehabilitation Centre. As a component of this program; range of motion (ROM) and stretching exercises were applied for regaining normal ROM. TENS and surface ultrasonography were applied for 20 and 10 min respectively, during each session. On the third month, the player resumed workouts with the team. He became a substitute player on the sixth month, and a full player was on the eighth month. Pertaining literature gives mean time for return to field as six months.

In connection with the nature of football; the adductor muscle group is under serious load while kicking the ball. Also playing soccer without appropriate training exercise can cause occult damage of the adductor muscles. In the world of football, adductor muscle group injuries are becoming more commonly seen, with detrimental surprises. Management of adductor injuries must be thoroughly done for keeping the soccer player in the field.

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