

Avulsion of Rectus Femoris Muscle from Inferior Superior Iliac Spine

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Abstract

Rectus Femoris muscle injuries are relatively common among athletes who participate in sports that require sudden acceleration and deceleration movements. Due to the nature of the sport, football players in particular are frequently prone to such injuries. The Rectus femoris muscle is one of the four quadriceps muscles and is responsible for knee extension and hip flexion. Excessive force can cause the muscle to detach from its attachment site at the inferior superior iliac spine. Rectus Femoris muscle avulsion from the inferior superior iliac spine can be extremely painful and debilitating for the patient. This type of injury occurs when the muscle is pulled away from the bone, resulting in severe pain and swelling. Rest, ice, compression, and elevation are common treatments for this injury, as well as physical therapy to help the patient regain strength and mobility. In severe cases, surgery may be required to reattach the muscle to the bone. Patients must seek immediate medical attention to avoid further damage and ensure a full recovery. Most patients can expect to recover completely and return to their pre-injury level of activity with proper care and rehabilitation.

Keywords: Rectus Femoris Muscle; Iliac Spine; Athletes.

Introduction

Avulsion injuries of the rectus femoris muscle from the anterior inferior iliac spine (AIIS) or superior iliac spine (SIS) are relatively rare but can result in significant disability and functional impairment. These injuries typically occur in young individuals involved in sports activities that require explosive movements, such as sprinting, kicking, or jumping. The rectus femoris muscle is one of the four muscles that make up the quadriceps muscle group and is responsible for extending the knee and flexing the hip joint.

Traditionally, surgical intervention has been considered the primary treatment option for avulsion injuries of the rectus femoris muscle from the AIIS or SIS. However, recent studies have suggested that conservative management may be a viable alternative for select cases, offering comparable outcomes with a potentially reduced risk of complications.

Conservative treatment involves a comprehensive rehabilitation program aimed at reducing pain, promoting healing, and restoring normal function. This approach typically includes a period of rest, followed by a gradual progression of stretching and strengthening exercises, as well as modalities such as ice, heat, and electrotherapy.

The goal of conservative management is to allow the injured muscle to heal and regain strength without the need for surgical intervention.

Several studies have reported successful outcomes with conservative treatment of avulsion injuries of the rectus femoris muscle from the AIIS or SIS. (1-6)

Case Presentation and Investigation

A case of 29 years old gentleman military, presented with a complaint of a twisting injury over his right hip while playing soccer 1.5 months before presentation in our hospital. He has slight pain over his hip which did not preventing him from doing his daily activity.

On examination, He is walking normally, with mild tenderness over anterior aspect of his right hip mainly over with Hip flexion and extension. He has a good functional range of motion with Muscle power grade 5 out of 5. X-rays were unremarkable, where MRI shows avulsion injury of right rectus femoris from anterior inferior iliac spine.

Management

In consideration of the patient's improving pain and functional abilities, our approach emphasizes conservative treatment aimed at pain control, medication management, and targeted exercises to enhance range of motion, and facilitate bone healing. Despite discussing the option of operative intervention, such as repair with suture anchors, the decision was made to prioritize conservative measures at this juncture.

In the follow-up management, we propose assessments at intervals of 2 weeks, 1 month, 3 months, 6 months, and 1 year.

At the 2-week mark, the focus was on evaluating pain levels, medication efficacy, and exercise adherence. After 1 month, we reassessed pain management, monitored progress in range of motion and muscle strength, and potentially adjusted the exercise regimen. Subsequent visits at 3 and 6 months involved comprehensive evaluations of pain, functional status, and treatment efficacy, with consideration given to modifying treatment plans as necessary. At the 6-month follow-up patient returned back to normal activities. Finally, at the 1-year mark, a thorough review of long-term progress and any persistent symptoms was performed, along with discussions regarding the need for further intervention based on the patient's response to conservative measures.

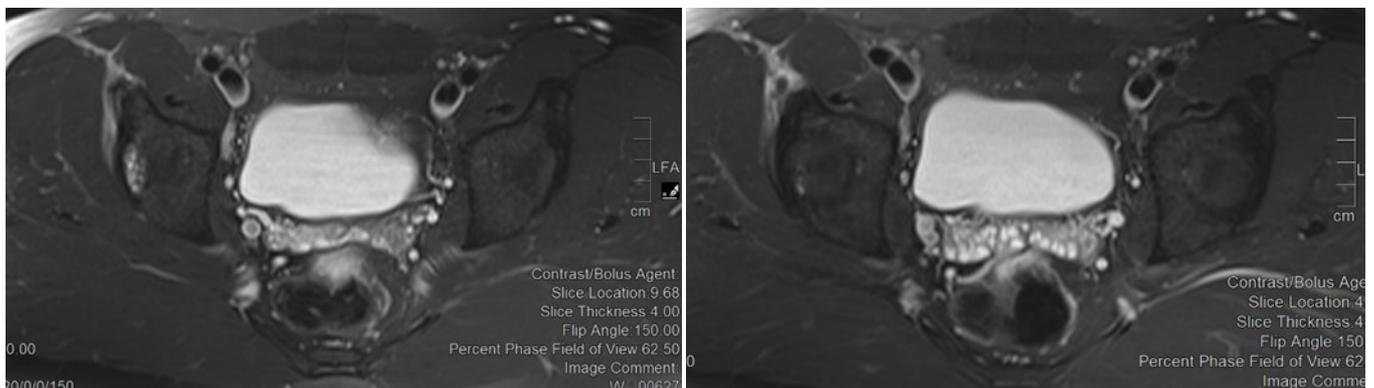


Figure 1. X ray pelvis unremarkable.

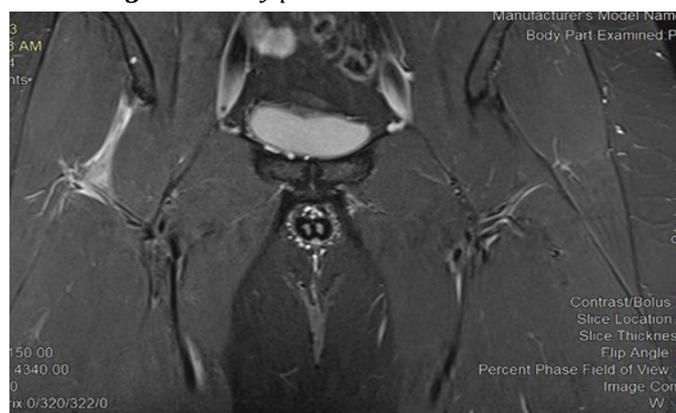


Figure 2. MRI pelvis, axial cut showed avulsion of right rectus femoris from origin.

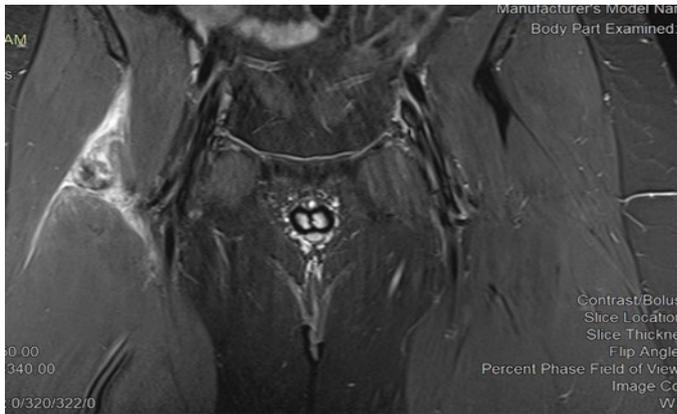


Figure 3. MRI pelvis, coronal cuts showed avulsion of right rectus femoris from origin.

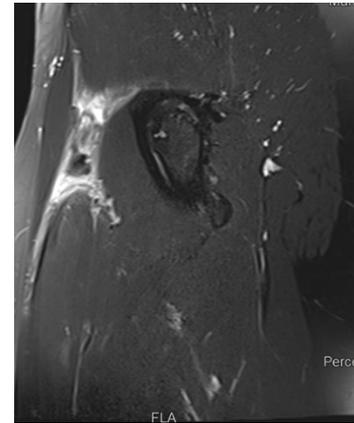


Figure 4. MRI pelvis, sagittal cuts showed avulsion of right rectus femoris.

Discussion

Avulsion of the rectus femoris muscle from the inferior superior iliac spine is a common injury among athletes, particularly football players (1). The injury is often caused by a sudden, forceful contraction of the muscle during an explosive movement such as kicking or sprinting. Symptoms of the injury can include pain, swelling, and loss of function (2).

In this case, a football player was presented with an avulsion of the rectus femoris muscle from the iliac spine. The patient was treated non-operatively, which involves rest, ice, compression, and elevation, as well as physiotherapy to help restore strength and function. After 1 and a half months of treatment, the patient has shown signs of improvement (3).

Non-operative treatment is often the preferred approach for avulsion injuries, as it allows the patient to avoid the risks associated with surgery and provides an opportunity for natural healing to occur (4). The aim of non-operative management is to control pain and swelling, promote healing, and prevent secondary complications such as muscle weakness or atrophy.

Rest is a critical aspect of non-operative treatment, as it allows the injured muscle to heal (5). The use of ice, compression, and elevation can also help to reduce swelling and pain. Physiotherapy is an essential component of the treatment plan, as it can help to restore strength, flexibility, and range of motion (6). This may include exercises such as stretching, range of motion exercises, and muscle-strengthening exercises.

The patient in this case has shown signs of improvement after 1 and a half months of non-operative treatment. However, it is important to note that the success of non-operative treatment can depend on a number of factors, including the severity of the injury and the individual's response to treatment. Some patients may require longer periods of rest and rehabilitation before returning to their normal activities.

Football players frequently sustain injuries from the rectus femoris muscle avulsion. Non-operative therapy is frequently chosen because it can promote healing and function restoration. In order to achieve the best results, patients should closely adhere to their treatment plan and collaborate with their healthcare provider. The success of non-operative treatment can rely on a number of variables. For rectus femoris avulsion injuries from the inferior superior iliac spine, non-operative treatment may be an effective option to surgery, especially when the injury is not severe and the patient is able to endure a structured rehabilitation program.

Conclusion

In conclusion, Avulsion of the rectus sheath is a rare injury. The non-operative treatment of avulsion injuries can be effective in promoting healing and restoring function in young people. With appropriate care and rehabilitation, most patients can expect a full recovery and a return to their normal activities.

Conflicts of Interest

The authors declare that they have no conflict of interests.

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