

Case Report

Case report of isolated lesser trochanter avulsion fracture

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ABSTRACT

An isolated lesser trochanter avulsion fracture is a rare injury. It is of two types, true fracture which occurs only in adults or as epiphyseal separation which are found in adolescent population. It is caused by a sudden forceful eccentric contraction of the iliopsoas in an attempt to accelerate or decelerate the body. In this case report, 15 year old male football player presented with acute onset of pain while playing football, associated with difficulty in walking. On X ray, it was lesser trochanter avulsion fracture which was fixed with cortical screw with washer+ fibre wire+5 mm suture anchor. the outcome was good. The patient reverted to his obvious activities with normal range of movement. The minimal invasive surgical management have better outcome with faster healing, early mobilization, good range of hip movement.

Keywords: Lesser trochanter avulsion fracture, Cortical screw with washer, Fibre wire, Suture anchor

INTRODUCTION

Avulsion injuries of the lesser trochanter apophysis are relatively uncommon but predominantly occur in adolescent male athletes. It has been reported in the literature that isolated lesser trochanter avulsion fractures account for less than 1% of sports injuries.¹

Avulsion fractures of the lesser trochanter occur typically during sport due to strong muscle contraction of the iliopsoas on an apophysis with an open growth plate. The cartilaginous growth plate may be at increased risk of trauma compared to the musculotendinous units.² The primary mechanism of acute injury is a sudden forceful eccentric contraction of the iliopsoas in an attempt to accelerate or decelerate the body, typically occurring during athletic activity. An alternative mechanism of injury is a sudden excessive passive muscle stretching.³

CASE REPORT

In this case report, 15-year-old male football player presented with acute onset of pain in right groin area while playing football. He had to immediately stop the play and

also difficulty in walking and running. On examination, there was tenderness over the lesser trochanter, hip flexion is restricted.

Xray showed an isolated avulsion fracture of lesser trochanter.

He was taken up for surgical fixation of the fracture on the same day.



Figure 1: Lesser trochanter avulsion.

Fergusons approach to hip. The patient is typically placed in a supine position with the hip flexed, abducted, and externally rotated. A longitudinal incision is made along the adductor longus muscle, usually 3 cm distal to the pubic tubercle.



Figure 2: Fergusons approach.

The dissection involves separating the adductor longus and gracilis muscles, then working between the adductor brevis and adductor magnus to reach the hip joint capsule and lesser trochanter is identified

The avulsed lesser trochanter is then pulled and fixed with suture anchor and an additional cortical screw with washer along with fibrewire. The fixation and fracture reduction is confirmed under intraoperative c-arm.



Figure 3: Intraoperative image.



Figure 4: Fixation with cortical screw with washer.



Figure 5: Suture anchor fixation.



Figure 6: Immediate postop x-ray.

Postoperatively, wound site healed well.

The patient is advised no weight bearing for 4 weeks, avoid hip flexion.

After 4 weeks, the boy started restricted weight bearing for 2 weeks, then followed by complete weight bearing. Hip flexion exercises started. Moderate exercises started 8 weeks after surgery and returned to sports activities 12 weeks after surgery. After 16 weeks post surgery he started playing football.

Xray shown fracture healing after 4 weeks of fixation and completely healed after 12 weeks of surgery.



Figure 7: 4 weeks postop.



Figure 8: 12 weeks postop.

DISCUSSION

Isolated lesser trochanter fracture is not a usual presentation of hip fracture. The first case of lesser trochanter fracture was documented in 1925, the second case reported in 1932.^{4,5} It was documented that lesser trochanter fracture has an association with malignancy and suspecting of malignancy increase if the lesser trochanter fracture happens without history of trauma.⁶ Lesser trochanter fracture injury is most likely to occur as a sports-related trauma. Avulsion fractures typically occur during adolescence age.

The treatment for avulsion lesser trochanter fracture is individually tailored from being conservative with observation and follow up to surgical interventions whenever as needed. However, most of the Lesser trochanter fracture managed non-operatively with bed rest for 6-8 weeks, use of crutches, non-steroid anti-inflammatory treatment. Followed by tolerant weight bearing period for 8 weeks to 4 months. Patient can return to sport activity after 6-8 months of the time of injury

We report a case of Lesser trochanter fracture where the patient underwent surgical fixation. After 4 weeks, patient start progressive weight bearing. After 8 weeks of the injury, the patient was walking and running without limitation nor pain. After 12 weeks from the time of injury the x-ray shows complete healing of the fracture with

formation of good callus. The patient returned to non-contact sports by 12 weeks and to full sport activities by 16 weeks.

Post operative Xrays taken after 12 weeks showed complete fracture healing.

CONCLUSION

Though isolated lesser trochanter fractures are rare, the management of the fracture remains perplexed. Surgical fixation has an advantage of anatomical reduction, faster healing and early mobilisation and return to sports. However, majority opts for a conservative management which delays return to normal activities especially in sports person. Hence for a high-level athlete, surgical fixation is a better choice than conservative management, as the return to sports after injury is faster in surgical fixation.

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