

# Superior Hip Dislocation with Rectus Bony Avulsion (Straight with reflected head): A Rare Case Report

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**Abstract:** Superior dislocation of hip with rectus bony avulsion is a rare condition which mainly happens due to domestic fall and high velocity trauma of motor vehicle accidents. Rectus femoris avulsion fracture leads to pulling of fragment and it lies close to hip joint. X-ray will usually show the presence of the fragment near the hip joint. Avulsion injury of the rectus femoris usually results due to sudden powerful contraction of the muscles of rectus femoris or sometimes it can be due to sudden knee flexion with traction.

**Case Report:** 41 Year old male developed pain in left hip area and unable to move the left hip joint after an episode of domestic fall. On Physical Examination tenderness was present in the left hip area with hip joint restricted range of motion. There was no distal neurovascular compromise. Patient was primarily immobilised using Thomas Splint. Imaging done using X rays and CT of the pelvis suggestive of superior dislocation of the hip with bony avulsion at the site of rectus insertion. Patient was planned for relocation of the hip with open reduction and internal fixation with cortico-cancellous screws.

Post operatively the limb was immobilised in Thomas splint for 3 weeks followed by start of Range of motion of the hip joint as per pain tolerance. Partial weight bearing was started after 3 months of the surgery.

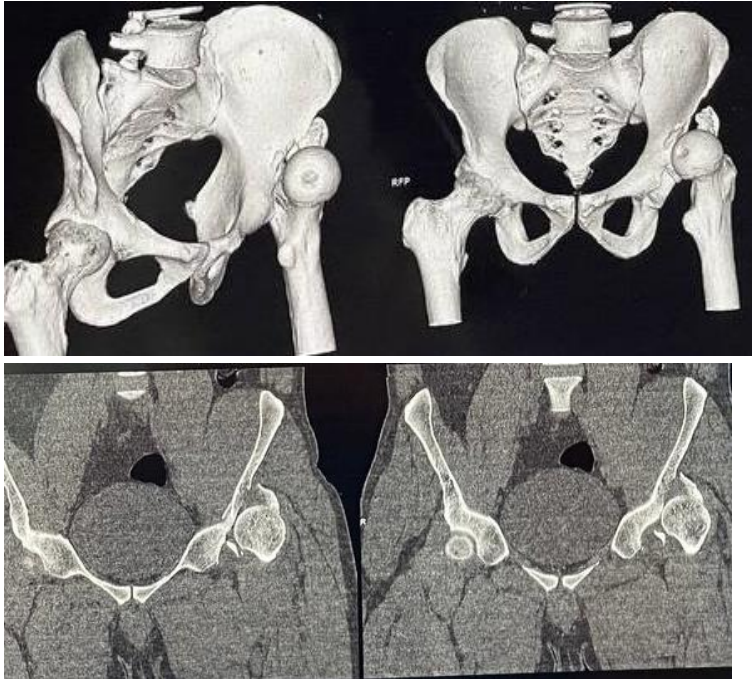
**Keywords:** Hip, Dislocation, Avulsion, Fracture, Rectus

**Introduction:** Superior dislocation of hip with rectus bony avulsion is a rare condition which mainly happens due to domestic fall and high velocity trauma of motor vehicle accidents. Rectus femoris avulsion fracture leads to pulling of fragment and it lies close to hip joint. X-ray will usually show the presence of the fragment near the hip joint. Avulsion injury of the rectus femoris usually results due to sudden powerful contraction of the muscles of rectus femoris or sometimes it can be due to sudden knee flexion with traction.

**Case Report:** 41 Year old male developed pain in left hip area and unable to move the left hip joint after an episode of domestic fall. Patient was on Tab Levetiracetam 500 mg at night since

last 8 years. On Physical Examination tenderness was present in the left hip area with hip joint restricted range of motion. There was no distal neurovascular compromise. Patient was primarily immobilised using Thomas splint. Imaging done using X rays and CT of the pelvis suggestive of superior dislocation of the hip with bony avulsion at the site of rectus insertion. Patient was planned for relocation of the hip with open reduction and internal fixation with cortico cancellous screws.

**Pre-Operative CT Scan of Pelvis:**



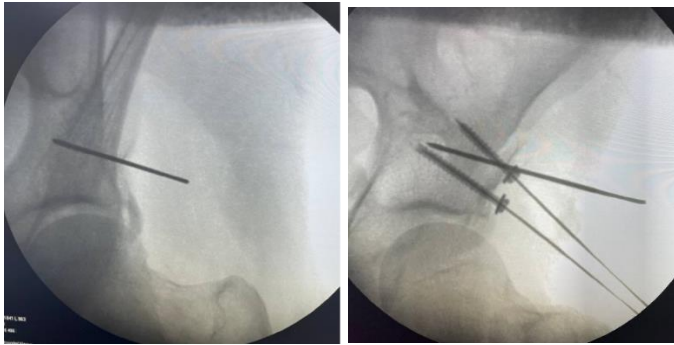
**Intra OP:**

Patient was taken in supine position. Incision was taken from ASIS to proximal femur by Iliofemoral approach (Smith Petersen Approach).

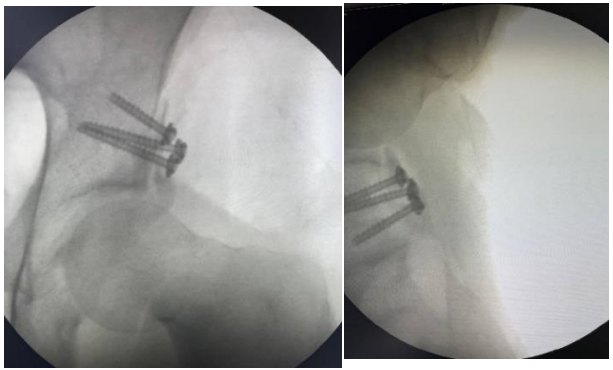


Rectus femoris avulsion was present. Rectus and sartorius was split. Rectus muscle was identified with bony pieces (4x3cm).

Temporary fixation was done using K-Wires and confirmed with image intensifier.



Fixation of bony piece was done with fully threaded 4 mm Titanium CC Screws.



**Post operative protocol:**

Patient was started on IV antibiotics and other supportive medications including nonsteroidal anti-inflammatory drugs (NSAIDs). The limb was immobilised in Thomas splint for 3 weeks followed by start of Range of motion of the hip joint as per pain tolerance. Partial weight bearing was started after 3 months of the surgery.

X Ray after 3 month follow up: Callus formation can be seen at the surgical site



**Discussion:** Hip dislocation along with bony avulsion of the rectus (straight head with reflected head) are mainly due to a traumatic events that can happen in sports event or can occur during domestic fall[1]. While sprinting and kicking sudden forceful contraction of these muscles lead to this event. In Adults the apophysis is closed after a certain age and sudden muscle contraction can lead to muscle strain which can lead to this event.

Middle age group are more prone for post traumatic dislocation of the hip joint[2]. Hip is one of the joints which is too stable, extreme force is needed for its dislocation which happens after a major trauma. Sudden abduction, extension and external rotation can lead to superior hip joint dislocation[3].

Adolescents which are athletes are more prone to pelvic avulsion injuries[4]. They can present as reflected head of rectus femoris, Ischial tuberosity, AIIS, ASIS avulsion fractures. Sudden contraction of muscles like sartorius, rectus femoris, tensor fascia lata with knee in flexion and hip in extension can result in avulsion fracture of ASIS and AIIS.

Hip flexion with adductors and hamstrings sudden contraction can lead to avulsion fracture of ischial tuberosity[5]. These can also happen by repetitive stress but athletes are more prone due to more chances of sudden forceful contraction of muscles. Some patients who underwent iliac crest bone graft extraction are more prone to ASIS fracture[6].

Possibly a violent hip joint hyperextension, followed by superior dislocation of the hip might be the mechanism of injury in this case report[7]. The diagnosis was done based on the clinical examination of the leg and the pelvis with hip radiographs.

Avulsion fractures at the AIIS are displaced laterally and are small, can be managed conservatively (most authors)[8]. These small fractures heal by formation of callus. Patients recover slowly and satisfactorily in some time. Patients start their daily activities in due course of time.

Management of these avulsion fractures (whether conservative or operative) is a matter of debate and it depends mainly on the surgeon. Usually if the displacement of the fragment is more than 3 cm or if post surgery there will be anatomical reduction and articular surface with stability is restored, then surgical management (Open reduction and internal fixation) is done. Surgical management is also followed where prolonged bed rest and immobility needs to be avoided.

## **Conclusion:**

Post traumatic hip dislocations with bony avulsion with or without capsular lesion should be individually addressed. In this case report we have explained about the pre operative planning and correct decision making which was done based on the imaging studies.

## **Abbreviations:**

AIIS: Anterior Inferior Iliac spine

ASIS: Anterior superior Iliac spine

CC Screws: Cortico-cancellous screw

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