

Traumatic Anterior Inferior Hip Dislocation (Obturator Type) in Young Patient: A Rare Case Report

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Abstract

Obturator dislocations of the hip joint are a rare condition. In this case, 40 years old male patient met with a car accident and was brought to the emergency room with the complaint of severe pain in his left hip joint and inability to move his left lower limb. After X-ray, he was diagnosed as left anterior inferior hip dislocation and closed reduction was achieved within 4 hours under general anesthesia by Alli's maneuver and immobilization with Thomas splint for 3 weeks. After that patient was able to walk without any complaint with the normal range of movements after 6 weeks.

Keywords: Obturator inferior type; Alli's maneuver; Closed reduction

Introduction

The hip is a ball-and-socket joint that is inherently stable because of its bony geometry and strong ligaments, allowing it to resist significant increases in mechanical stress. Anatomic components contributing to the hip's stability include the depth of the acetabulum, the labrum, joint capsule, muscular support, and surrounding ligaments [1]. The major ligaments stabilizing the joint from directional forces include the iliofemoral ligament located anteriorly and the ischiofemoral ligament located posteriorly. Because the anterior ligaments are stronger, trauma to the hip commonly presents as a posterior dislocation when discovered (90% of cases) [2,3].

Hip dislocations usually are the result of high-energy trauma generally in the young adult [4]. Hip dislocations are commonly classified according to the direction of the dislocation of the femoral head, either anterior or posterior [5]. Most hip dislocations are posterior, caused by impaction of the femoral head upon the acetabulum from direct force to the distal femur. Anterior dislocations are less common and of two main types: superior, where the femoral head is displaced into the iliac or pubic region and inferior, where the head lies in the obturator region [6]. Anterior dislocations occur in approximately 10% to

15% of all traumatic hip dislocations with the femoral head being displaced to come to lie anterosuperiorly or anteroinferiorly to the coronal plane of the acetabulum [7]. They occur as a result of the forced abduction, external rotation, and flexion of the hip joint. Road traffic accidents are responsible for the majority of anterior obturator dislocations of the hip with dashboard impact, where sudden deceleration created the dislocating force [8]. Inferior dislocation of the hip, also called luxatio erecta femoris or infracotyloid dislocation is the rarest type of hip dislocation with a poorly understood mechanism of injury, mainly occurring from high energy incidents, mostly from road traffic accidents or sports [9].

An understanding of the vasculature is important because trauma to the hip can displace the femoral head and interrupt the blood supply, leading to Avascular Necrosis (AVN). Such problems and complications are more common in anterior than posterior dislocations.

Case Report

40 year male patient, a resident of Davangere, Karnataka met with a car accident and was brought to the emergency room. He complained of severe pain in his left hip joint and inability to move his left lower limb (restricted movement of left lower limb). On examination of the patient, left hip joint abducted at 35°, flexed at 80° and externally rotated at 20° (Figure 1). Movements at left hip joint were painful and restricted and no neurovascular impairment was determined.

After that X-ray of the pelvis with the bilateral hip joint was taken and X-ray showed obturator dislocation of the left hip joint without any associated fracture (Figure 2).

The patient was posted for closed reduction under general anesthesia within 4 hours. The patient was shifted to operation theatre and under general anesthesia patient was shifted on the floor.



Figure 1: Clinical position of the patient in the emergency room.

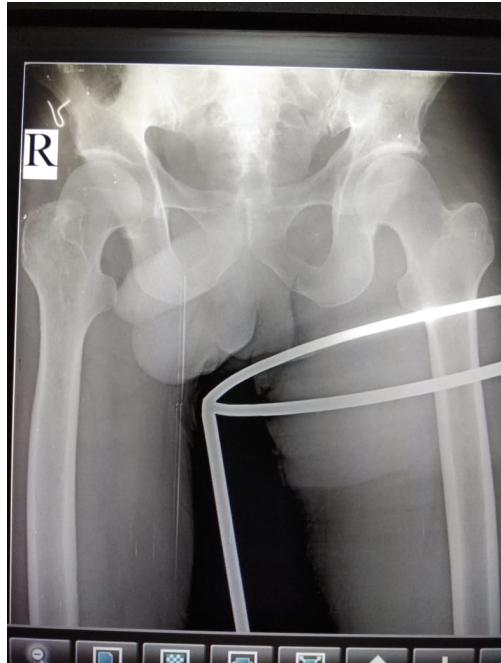


Figure 3: X-ray pelvis with bilateral hip joint showing reduced left hip joint with Thomas splint *in situ* (post-reduction).



Figure 2: X-ray of pelvic with bilateral hip joint showing obturator type left hip joint dislocation.



Figure 4: Post reduction 6 weeks follow up X-ray.

It was reduced with Alli's maneuver. In this maneuver patient was kept in supine position, with an assistant stabilizing the pelvis, the knee was flexed and lateral traction was applied to the inside of the left thigh and along with this longitudinal traction was applied in line with the axis of the left femur and the hip joint was slightly flexed. Then left hip joint was gently adducted and internally rotated to achieve the reduction.

After confirming the reduction Thomas splint was applied to the left lower limb and check X-ray was taken and reduction of left hip joint was confirmed without any associated fracture (**Figure 3**). On follow up after 3 weeks, Thomas splint was removed and was advised mobilization with partial weight bearing and with use of a walker for the next 3 weeks. Then after 6 weeks follow up X-ray was taken (**Figure 4**) and advised to walk with full weight bearing without any support.

Discussion

Hip dislocations are time-sensitive medical emergencies that must be treated promptly to prevent permanent complications. Dislocation of the hip joint is a traumatic condition in native hip injuries. So advanced trauma life support is critical to stabilizing the injured patient [10] and after that hip, dislocation should be reduced under general anesthesia.

Epstein's classification of anterior dislocation into type 1, superior (including pubic and subspinous) and type 2, inferior (including an obturator and perineal dislocations). In reality, obturator dislocations, although classified as anterior, are distinct injuries requiring a different method of reduction [11].

Hip dislocations should be reduced within 6 hours to prevent and minimize complications. An important complication following traumatic dislocation of the hip is prolonged and irreversible ischemia of the head of the femur leading to

osteonecrosis in 10%-30% or more of cases, particularly if the dislocation is accompanied by severe bone destruction [12]. In this case, the reduction is achieved within 4 hours of trauma and immobilized with Thomas splint for 3 weeks. Thomas splint was removed after 3 weeks and was advised mobilization with partial weight bearing and with use of a walker. After 6 weeks patient advised walking with full weight bearing without any support.

Conclusion

Obturator dislocation of the hip joint is a rare condition because a strong anterior capsule and the ligament of Bigelow prevent anterior hip dislocations. In this condition, early diagnosis and reduction under general anesthesia should be done to prevent further complications.

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