



# Obturator Type of Hip Dislocation with Ipsilateral Non-Displaced Neck of Femur Fracture: A Case Report

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## ABSTRACT

**Introduction:** Obturator type of Hip dislocation along with ipsilateral neck of femur fracture and the anterior wall of acetabulum fracture is an infrequent finding. We are reporting a case of an 82-year-old male having combined damages, were managed through the extraction of femoral head and Total hip arthroplasty. He presented a good result on follow-up with no short-term complications.

**Keywords:** Hip dislocation, Obturator, neck of femur fracture

## INTRODUCTION

Anterior type of traumatic dislocation of the hip combined with ipsilateral fracture of neck of femur is an infrequent trauma finding.<sup>1,2</sup> Anterior type of hip dislocations accounts only 5%-13% of all dislocations of hip joint as compared to the posterior type of hip dislocation.<sup>3,5</sup> Epstein's classification elaborates the hip dislocation as anterior type and posterior type of dislocation. Anterior type of dislocation is further split into pubic and obturator type, established on the place of the head of femoral: displaced inferiorly or superiorly.<sup>6</sup> Very low incidence of obturator dislocation is found amongst all type of dislocation of hip joint; about two percent to five percent of altogether hip dislocations.<sup>7</sup> According to Epstein and Harvey,<sup>8</sup> forceful abduction is the leading factor for traumatic dislocation of hip joint because it causes impingement & lever-effect between neck of femur and acetabulum. In this course, flex position of joint causes obturator type dislocation while extension position causes public type of dislocation.<sup>8</sup> In case of continued strain, neck of femur fracture occurs.<sup>9</sup> We present the new case-report of such entities of damages.

## CASE REPORT

An 82year old male, social worker, sustained trauma in a roadside accident; where he was thrown off balance, pinned under and dragged by his motorcycle. He was taken to the Emergency Department of Lahore General Hospital Lahore after 2 hours of injury with deformity, pain, and inability

to bear weight on left hip joint. The vital signs of the patient were at optimum level. The left lower limb was in the pathological positioning in shortened, abducted and external rotated posture. The greater trochanter of femur was not palpable. The distal neurological current and vascular patency was up to mark. The radiological findings included an acetabular fracture and the femoral head occupying the obturator cavity (Fig-1). 3D-CT scan of pelvis was conducted to further evaluate the details of the injury to design the surgical strategy. 3D-CT scan (Fig-2)

(<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3880428/figure/fig2/>) revealed ipsilateral undisplaced fracture of neck of femur, fracture anterior wall of acetabulum along with anterior type of dislocation. The A&E team failed to recognize the undisplaced neck of femur fracture and attempted close reduction under sedation. The attempt was unsuccessful and resulted in displacement of neck of femur fracture.

After proper planning, the patient was prepared for elective list. Patient was shifted to Operation Theater after preoperative measures. After spinal anesthesia, supine position of patient was made on a radiolucent operating table and the affected leg was thoroughly painted and draped. For extraction of dislodged head of femur, Smith-Peterson approach was a. The head of femur was drawn out with difficulty from the obturator foramen (Fig-3). Then hybrid total hip replacement was done using Harding approach. We did not possess the instrument or expertise to perform anterior THR. Therefore, we had to use direct lateral approach. Due to anterior wall defect in acetabulum uncemented cup was used along with cemented

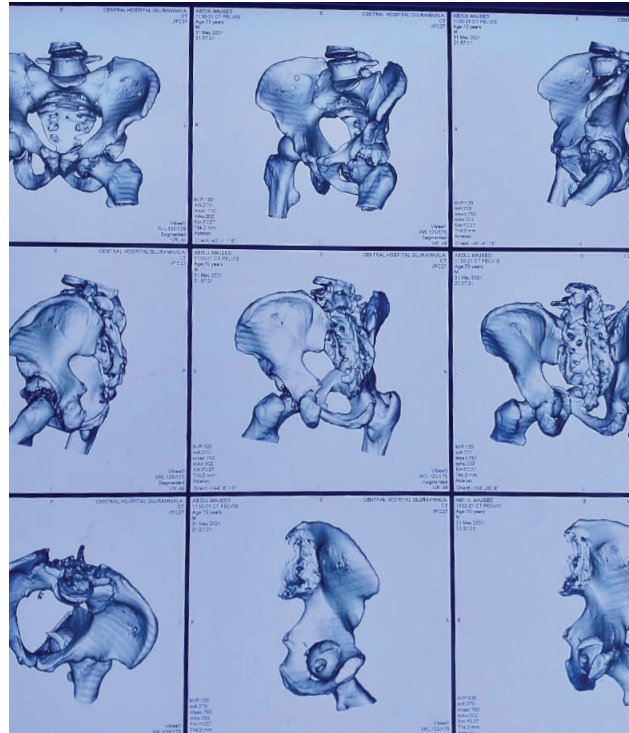
femoral component (50 mm acetabular cup and 7.5 femoral stem).

We had to keep the acetabular cup slightly vertical to cover anterior wall defect. The hip stability was checked preoperatively.

The post-operative course was uneventful. Patient was mobilized out of bed on the second post-operative day. Stitches were removed after 15 days. Patient was kept partial weight bearing for six weeks.



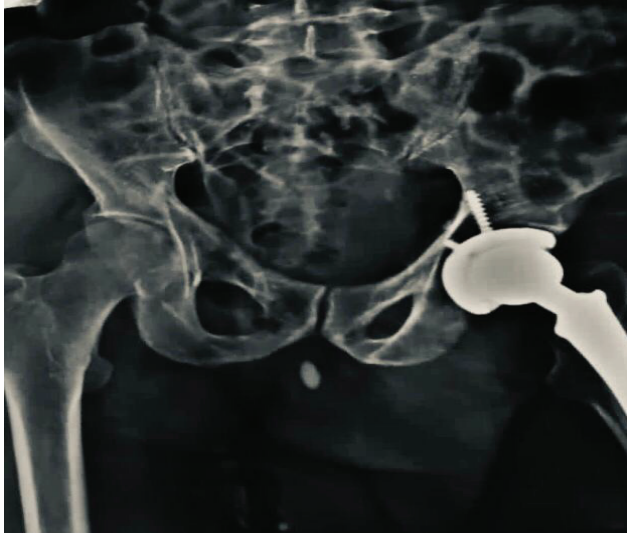
**Fig-1:** The radiograph of left hip (AP view) showed the obturator type anterior dislocation of the femoral head with a piece acetabular fracture.



**Fig-2:** CT scan reveals the obturator dislocation, a subtype of anterior dislocation of hip joint, with ipsilateral undisplaced neck of femur fracture along with large piece of antero-inferior wall of acetabulum.



**Fig-3:** Femoral head extracted from obturator cavity



**Fig-4:** Post-Operative radiograph.

## DISCUSSION

Anterior type of dislocation of hip joint is an exceptional damage, taking place in lesser than five percent of all traumatic hip dislocations.<sup>10,11,12,13</sup>

The combination of an ipsilateral femur-neck fracture along with femoral head dislocation is even more infrequent.<sup>14,15</sup> Reason is the diverse mechanisms of impacts enacting to deliver these two injuries, while these injuries together are allied with a high energy impact in a young individual.<sup>16</sup>

Anterior type of dislocation of hip joint takes place as a consequence of series of acting forces and position of the hip joint; a force impacting on an abducted, flexed and externally rotated hip joint leads to dislodging of head of femoral head.<sup>17,18</sup> As stated by Epstein's hip dislocation classification, the anterior type of dislodgment is further divided into pubic (Type-I) and obturator (Type-II) dislocation.<sup>19</sup> Obturator type of dislocation constitutes two percent to five percent of all types of dislocation of femoral head.<sup>20</sup> and is usually produced by history of fall.<sup>21</sup> In this reported case, femoral head dislodged in obturator foramen when a line of impaction was conveyed through the knee to the hip joint whereas the extremity is in a location of full flexed, abducted, and lateral rotated posture.

Combined injury of anterior type of dislocation of the femoral head with fracture of its neck takes place in two phases; initially, dislocation happens before the fracture neck of femur is complete. Consequently, the force in direction of external rotation is applied over the intact neck of femur or through the partial fracture to dislodge the femur head from the acetabular cavity. If force is continuously exerted, then it produces a fracture at

femoral neck, and the fracture parts are displaced to a significant gradation.<sup>15,16</sup>

Treatment of choices for this least common type dislocation embrace open reduction and fixed internally because it is less likely to be reduced closely through manual method alone, because the head of femur has no integrity with its neck.<sup>22</sup> Some previous reports proposed that primary arthroplasty is better course of action observing the high risk of avascular necrosis & nonunion of the femoral neck.<sup>23</sup> Sadler and DiStefano reduced the dislocation and fixed the neck of femur using sliding hip screw and side plate but during the follow-up avascular necrosis occurred, so they consumed Judet-Meyers type of graft of muscle pedicle after 12 weeks of damage. McClelland et al.<sup>22</sup> described that they operated for collar-less type of press-fit model of bipolar prosthesis in a patient of obturator type of femoral head dislocation along with neck of femur fracture.

In our case, we decided to go for THR keeping in mind the injuries, patient's age, and activity status. We used two surgical approaches as we don't have experience performing direct anterior approach for THR and lack specific instrumentations.

## CONCLUSION

Injury in combination with obturator type of femoral head dislocation with same sided neck of femur fracture is an infrequent entity. Fracture pattern can be subtle and needs careful evaluation before reduction is attempted. Treatment options include closed/open reduction of dislocation with osteosynthesis for femur neck fracture in young patient. For older patients, unipolar/bipolar hemi arthroplasty or total hip replacement can be considered.

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