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A RARE CASE OF IPSILATERAL POSTERIOR HIP DISLOCATION WITH POSTERIOR WALL ACETABULAR FRACTURE WITH FRACTURE NECK OF FEMUR

Orthopaedics

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ABSTRACT

High velocity motor vehicle accidents are major culprit leading to traumatic hip dislocations. We report a case of a 35 year old man who sustained posterior hip dislocation with posterior wall acetabular fracture and ipsilateral fracture neck femur following an autorickshaw accident. Prompt open reduction and internal fixation of the hip fracture-dislocation and fixation of fracture neck femur with a dynamic hip screw and posterior acetabular wall with reconstruction plate and screws were performed. Being a rare injury and reported infrequently in literature, treatment becomes quite challenging for orthopaedic surgeons. On 3 months follow up, patient shows radiological union and was able to walk with support. There were no major complications observed.

KEYWORDS

Hip Dislocation, femur neck fracture, posterior wall acetabular fracture, radiological union

INTRODUCTION

Traumatic hip dislocations occur frequently in high-energy motor vehicle accidents. Posterior dislocation of the hip joint with associated ipsilateral acetabular fracture and fracture neck of femur is an uncommon injury. Early recognition, prompt and stable reduction is the essence of successful management. A delay in diagnosis and reduction leads to preventable complications and morbidity. Final outcome depends upon the time elapsed from injury to treatment, type of fracture-dislocation, congruity and stability of the reduction and severity of injury[1, 2]. Posterior hip dislocations occur in axial force transfer through the femur to the hip joint in adduction at hip. Associated injuries are frequent in such a high impact injuries. According to varying position of the hip from extension to flexion (in adduction) leads to fracture of the wall of acetabulum or column fracture. There are case reports documenting dislocation of hip with column or wall fractures of acetabulum, with neck or intertrochanteric fracture [3]. The combination of posterior dislocation of hip with fracture neck of femur, with fracture of posterior wall of acetabulum is a rare entity and to our knowledge has been reported very few times in literature till date. There was also ipsilateral patellar fracture and lateral collateral ligament tear.We describe a case of posterior hip dislocation with posterior wall acetabular fracture and ipsilateral fracture neck of femur following a road traffic accident.

CASE REPORT

Thirty five year old man had sustained a Road Traffic Accident resulting from a hit by an autorickshaw. Patient was conscious throughout the incident. Primary stabilization was performed of as per ATLS (Advance Trauma Life Support) protocol. Patient had severe pain in the right hip and knee and was unable to move his right leg. On examination, his right leg appears to be shortened and externally rotated. Swelling and abrasions were noticed on the right hip and knee. All necessary radiographs were obtained [Figure 1] and fracture geometry was defined by CT scan Pelvis which showed posterior dislocation of the hip with posterior wall fracture of acetabulum and fracture neck of femur on the ipsilateral side [Figure 2].

Figure 1: X-ray Pelvis with bilateral hip antero-posterior view showing right fracture neck of femur and posterior wall acetabulum fracture

Figure 2: CT-Scan Pelvis with bilateral hip showing right fracture neck of femur and posterior wall acetabulum fracture

CT Brain was normal. A primary closed reduction technique for posterior dislocation of hip was attempted but was not successful. Following this, he was soon taken up for surgery in the operation theatre. In lateral position, surgical exposure was performed using standard Kocher–Langenback approach. On exposure multiple tears were noticed on the attachment of posterior capsule and short external rotators. The sciatic nerve was found stretched over dislocated head but intact. 2 guide wires were passed through the femur neck fracture into the head of femur and stable fixation of fracture neck of femur was performed under vision with the help of dynamic hip screw fixation with derotation screw [Figure 3]. Head was found vascular on drilling.

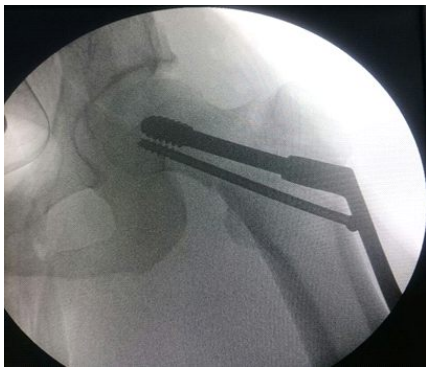

Figure 3: Fluroscopic image showing right fracture neck of femur fixed with Dynamic Hip Screw with Derotation Screw

Then the fracture geometry of pelvis and acetabulum was defined. The floor of acetabulum was cleared of debris and the head was reduced. The posterior acetabular wall fracture was fixed with reconstruction plate and screws [Figure 4] and closure done in layers after confirming under fluoroscopy.

Figure 4: Post-operative x-ray showing fixation of ipsilateral right fracture neck of femur with Dynamic hip screw and posterior wall acetabulum fracture with reconstruction plate and screws

Patellar fracture was reduced with the help of tension band wire technique and lateral collateral ligament tear was sutured after a week. Patient was advised physiotherapy from the post operative day 2 with passive followed by active assisted exercise and non weight bearing for 6 weeks. Partial weight bearing was allowed after 6 weeks. Patient is doing full weight bearing with acceptable range of motion (75 degree right hip flexion) at the end of 3 months.

DISCUSSION

Posterior dislocations account for approximately 90% of hip dislocations [1]. Position of the hip at the moment of impact and vectors and intensity of the forces affect the direction of the dislocation and whether a fracture-dislocation or a pure dislocation occurs [2]. During a motor vehicle accident, if the axial forces are applied through the femur while the hip is flexed and adducted, posterior hip dislocation usually occurs. Slight degrees of hip adduction at the time of collision, also leads to posterior wall fracture of the acetabulum. Further adduction of the femur head fixed by the tight periosteum of the ilium can cause the fracture of the femoral neck [3].Considering the emergency of such injuries, in addition to the severity of damage, duration of the dislocation has a considerable impact on patient outcome. Reduction within six hours after trauma showed better results [4]. The incidence of nerve injury in hip dislocations is approximately 10% in adults [5]. Various treatments have been reported for floating hip injury and ipsilateral femoral neck and shaft fractures. For floating hip injury, Kregor and Templeman stated that the priority of fracture fixation is the acetabular fracture fixation to prevent further damage to the hip joint [6]. However, Liebergall et al. stated that the priority of fracture fixation is the femur because reduction of the acetabulum is easy to perform [7]. In this study, we also fixed the femur neck first followed by acetabular fixation and obtained successful results within a short period of time.

CONCLUSION

Hip dislocation combined with acetabular fracture and femur neck fracture is an uncommon injury and their treatment is challenging and technically demanding for orthopedic and trauma surgeons. This article presents a rare case of posterior wall ipsilateral acetabulum with fracture neck of femur in a patient who sustained traumatic posterior hip dislocation and treated with an appropriate reduction technique using Dynamic Hip Screw for femur neck fracture and reconstruction plate with screws for posterior wall acetabulum fracture after reduction of posterior dislocation of hip joint. Early surgical intervention is important for satisfactory outcomes of such complex fracture-dislocation injuries.

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