Traumatic Obturator Dislocation of Hip Associated with Ipsilatral Subtrochanteric Femur Fracture in a Young Adult. A Case Report

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Received: 02-Jan-2024; Manuscript No. mrcs-24-141357; **Editor assigned**: 05-Jan-2024, Pre QC No. mrcs-24-141357 (PQ); **Reviewed**: 10-Jan-2024, QC No. mrcs-24-141357 (Q); **Revised:** 14-Jan-2024, Manuscript No mrcs-24-141357 (R) **Published:** 29-Jan-2024, doi: 10.4172/2572 5130.24.9(01).001-003

Abstract

Traumatic obturator type anterior dislocation of hip with ipsilateral sub trochanteric fracture is rarely encountered in clinical practice. This case presentation will describe a trauma patient with such rare scenario.

Case report: This paper reports a case of a 20-years-old male patient having traumatic anterior dislocation of hip associated with ipsilateral sub trochanteric femur fracture after the truck rolled over. There was diffuse swelling of the proximal thigh and the lower limb was externally rotated. Radiographic examination shows right femur sub trochanteric fracture with ipsilateral obturator type anterior hip dislocation. Emergency open reduction of the hip dislocation and ante-grade intra medullary nailing of the sub trochanteric fracture performed. Subsequent clinical and radiologic follow-up demonstrated good outcome.

Conclusion: The main peculiarity of the presented case is the association of obturator hip dislocation with ipsilateral femur shaft fracture. Early and stable reduction of the dislocation and firm internal fixation of the fracture as soon as possible will allow early rehabilitation and prevent late complications. At the fourth weeks of operation he started non weight bearing mobilization.

Keywords: Obturator hip dislocation • Sub trochanteric

Introduction

Traumatic anterior dislocation of hip with ipsilateral sub trochanteric fracture is rarely encountered in clinical practice [1]. But posterior dislocation of hip is repeatedly occurring and the occurrence chance is nine times higher than anterior hip dislocation due to its mode of dash board injury [2]. Traumatic anterior dislocation of hip with ipsilateral sub trochanteric fracture requires emergency evaluation, rapid reduction intervention within six hours, and early closed reduction of the joint helps to decrease risk of avascular necrosis, and chondrolysis [3,4].

The dislocated femoral head occluded the femoral artery [5]. The case of traumatic obturtator type anterior dislocation of hip with ipsilateral sub trochanteric fracture is rare and there are limited literatures about it which makes it a very challenging case. [4-7]. Here we report a case of right side traumatic obturator hip dislocation with ipsilateral sub trochanteric femur fracture in a 20 years old male patient.

Case Presentation

A 20-years-old male who was assistant driver by occupation, presented with road traffic accident of one-day duration. He was an assistant driver of a truck and the truck rolled over and he sustained trauma to his right thigh and hip area. On arrival to the emergency room analgesic given and clinically examined. Vital signs were in the normal range. On physical examination the proximal right thigh was swollen and the right hip was in abduction and external rotation position with femur head palpable in the obturator area. Femoral and popliteal pulsation was palpable. Femoral nerve and obturator nerve assessment was intact. Pelvic and thigh radiograph was taken and showed right side obturator type anterior hip dislocation with ipsilateral sub trochanteric femur fracture (Figure 1).

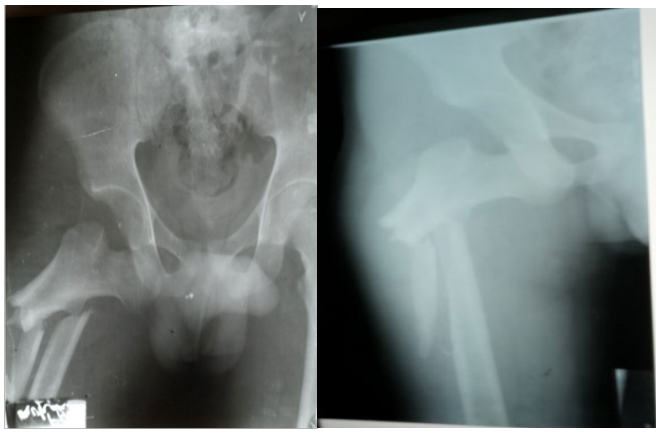

Figure 1. AP x-ray showing sub trochanteric femur fracture with ipsilateral Obturator type anterior hip dislocation.

Then the patient was taken to the Operation Theater and spinal anesthesia given. Using an incision over the greater trochanter, 5 mm Schanz pin inserted over the Greater trochanter to be used as a joy stick and closed reduction tried with sustained traction in abduction position and pressure over the femur head applied from the obturator area to push into the acetabulum but it was not successful (Figure 2). Then using anterolateral approach to the hip the capsule opened and the femur head reduced to the acetabulum. Then the sub trochanteric fracture was opened by extending the anterolateral approach of the hip distally. The fracture reduced and fixed with antegrade interlocking IM nail using piriformis entry to the femoral canal to avoid the risk of varus malreduction (Figure 3). At the end of operation, the stability of the hip checked by performing a 90-degree flexion, internal-external rotation and abduction-adduction and it was stable.

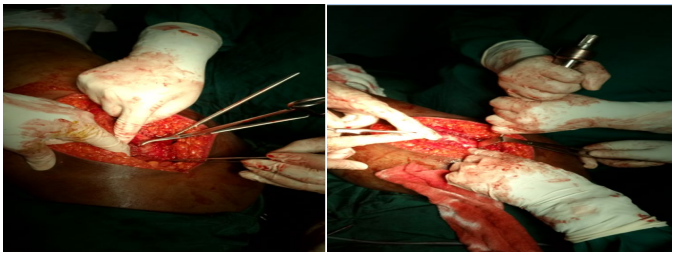

Figure 2. Intraoperative picture showing 5 mm schanz pin inserted over the Greater Trochanter and laterally directed traction applied to reduce the femur head.

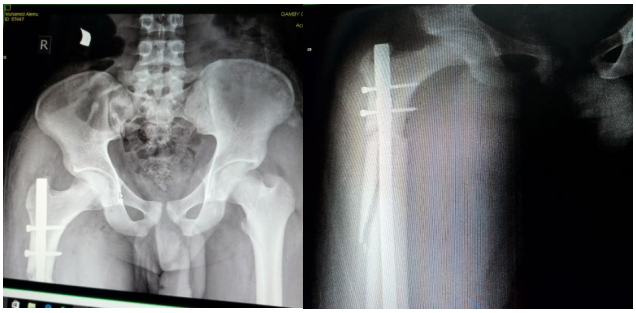

Figure 3. Post-operative x –ray showing right femur head reduced and the sub trochanteric femur fracture fixed with interlocking IM nailing.

Post operatively the left lower limb was immobilized by posterior splint with the knee in extension position for two weeks. Subsequently knee bending exercises and quadriceps strengthening started. Then he started partial weight bearing mobilization with walker after four weeks. Radiologic assessment using X-ray was done regularly starting from six weeks postoperatively till one year. Subsequently the patient resumed his daily activities without any hip pain and he has no functional limitation.

Discussion

The hip is a stable joint with a good congruence between the femoral head and acetabulum and reinforced by thicker capsule and strong ligaments [4]. So it requires significant trauma for hip dislocation. The commonest is posterior dislocation while the anterior hip dislocation accounts 10%-15% cases while obturator hip dislocations occurred in less than 5% of all traumatic hip dislocations [6]. Anterior hip dislocations result from high energy trauma which causes forced abduction and external rotation of the hip [5]. Based on the position of hip at the time of impact, it can be superior type, if in extension position or inferior type if the hip was in flexed position [8]. Joint reduction with fracture fixation allowed early rehabilitation and a delay more than six hours resulted four fold increased risk of avascular necrosis development [3,4,7]. Traumatic anterior dislocation of hip with ipsilateral sub trochanteric fracture requires a special mention because of peculiar mechanism of injury. Problems encountered in treating such cases. Hip dislocation is an orthopedic emergency requiring urgent reduction to prevent late complications like AVN of femur head, osteoarthritis, neurovascular injury and heterotopic ossification [4].

For this particular case of traumatic anterior dislocation of hip with ipsilateral sub trochanteric fracture; closed reduction tried with sustained traction in abduction direction and pressure over the femur head applied from the obturator area to push into the acetabulum but it was not successful. According to experience of another case report mandatory open reduction is indicated in cases of failed closed reduction, particularly in irreducible dislocations and closed reduction of hip dislocation associated with ipsilateral extremities fracture [9].

Then using anterolateral approach to the hip the capsule opened and the femur head reduced to the acetabulum. Some previous case presentation followed similar treatment approach and others applied closed reduction of dislocated hip [5,6]. One case report does not recommend open reduction for acetabulum dislocation at all [7]. The sub trochanteric fracture was opened using lateral approach to the femur and fracture reduced and fixed with ante grade interlocking IM nail [3].

Conclusion

The outcome of such cases depends on rapid evaluation and early intervention and usually it requires a multidisciplinary approach to identify and treat associated life threatening conditions. Early and stable reduction of the dislocation and firm internal fixation of the fracture as soon as possible will allow early rehabilitation and prevent late complications. The main peculiarity of the presented case is the association of the anterior – inferior dislocation with ipsilateral femur shaft fracture. The latter can be explained by the developing of powerful forces that act on the shaft. Another rare aspect of this case is the absence of associated acetabular fracture even though he had contra lateral iliac wing fracture. Hip dislocation is an orthopaedic emergency requiring urgent reduction to prevent late complications like AVN of femur head. Other complications include osteoarthritis, neurovascular injury and heterotopic ossification.

Acronyms and Abbreviation

Avn: Avascular Necrosis

Im: Intramedullary

Ethical Considerations

Written consent was obtained from the study participant data handling was done in accordance with the Helsinki declaration.

Consent for Publication

Not applicable.

Data Sharing Statement

The data used for the study are available from the corresponding author at any time.

Funding

Not applicable.

Disclosure

The authors declare that they have no competing interests.

Author's Contribution

All authors made a significant contribution to the work reported, whether that is in the write up, discussion, revising, or critically reviewing the case; gave final approval of the version to be published; have agreed on the journal to which the case has been submitted, and agree to be accountable for all aspects of the work.

Acknowledgements

We would like to thank our patient, for his valuable contribution and consent.

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Cite this article: Wuhib M. Traumatic Obturator Dislocation of Hip Associated with Ipsilatral Subtrochanteric Femur Fracture in a Young Adult. A Case Report, *Med. Rep. Case Stud.* 2024, 09(01), 001-003.