

## A Rare Case of Fracture Dislocation of Hip: Is There a Pipkin's Type 5?



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### Abstract

Fractures of the femoral head associated with neck fracture and posterior dislocation of the hip are uncommon. Pipkin and later Brumback classified these complex fracture dislocations. However in today's era patient have more atypical injury pattern. We encountered a case which has never been described in literature and cannot be fit into any previously described classification system. We present the radiological details and management.

**Keywords:** Femoral Head Fracture; Trochanter Fracture; Posterior Dislocation; Acetabular Fracture; Sciatic Injury; Pipkin's Types; Total Hip Replacement

### Introduction

Modern day accidents not only produce unpredictable but at times unclassifiable injuries. Fractures of the femoral head associated with posterior dislocation of the hip are uncommon as such [1]. Pipkin was the one who sub classified Epstein-Thomas type V fracture-dislocations into four additional subtypes which is still most widely followed [2]. Later Brumback et al. further classified femoral head fractures emphasizing hip stability, with type "B" injuries being unstable [3]. The paucity of these cases is the main constraint to make an algorithm of management. Nevertheless the results depend on early anatomical reduction with the potential threat of osteonecrosis irrespective of approach [4,5]. We hereby describe a case of posterior dislocation of hip which is novel and never been described before. The purpose is to make the fraternity aware of such a case which is unclassifiable even though the management protocol may not be grossly different.

### Case

A 52 year old migratory laborer had an accident at civil construction site where he fell down from a height of 20 feet landing first on knees (in kneeling position). He presented to emergency

department with severe pain in right groin, and inability to move the left lower limb. On examination the limb was shortened, externally rotated and a bony mass felt in the loin which did not move with the movement of distal thigh. There was severe tingling and decreased sensation in front and lateral aspect of leg and patient was unable to dorsiflex his ankle and toes. His pulsations were normal but he had transient hypotension with tachycardia which corrected with initial resuscitation. First X ray showed fracture about right hip (Figure 1) mostly a trochanteric fracture but a careful evaluation showed incongruity of head and a "vacant" on super lateral acetabulum. A CT scan was followed wherein the fracture was better delineated. A posterior dislocation of hip with fracture about the trochanter was seen. The head was also fractured and the infra foveal part could be seen lying the acetabulum. A fracture line also ran through the posterior wall of acetabulum which was not more than 25% of the wall and also was undisplaced (Figure 2a-2c). The patient was admitted and limb placed in Thomas splint and prepared for next morning. No attempts to reduce the dislocation were made.



Figure 1.



Figure 2(a).



Figure 3(a).

operatively. Postoperatively day one faradic stimulation was started and patient was allowed side tuning. Check X ray was done which showed a reasonable reconstruction (Figure 4). The patient was allowed sitting with non weight bearing mobilization from day 3 after the pain had subsided. 3 weeks after surgery the patient was discharged when he went back to his home state and never came back for follow up.



Figure 3(b).

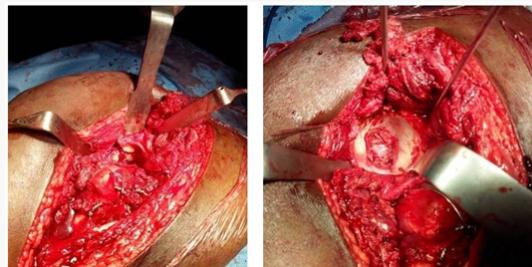


Figure 3(c).



Figure 3(d).



Figure 3(e).

Under general anesthesia, the patient was positioned laterally and a Moore's posterior approach was taken guided by dislocation and wall fracture. The gluteus maximus had a huge rent and external rotators were torn, the head was seen indenting the sciatic nerve (bowstring effect) which was contused but intact (Figure 3a). The neck was ostetomised with help of saw at the appropriate level and the calcar was reconstructed using encirclage wiring (Figure 3b). Ethibond was used to suture the greater trochanter. Next 2 temporary K wires were used in the acetabular walls and reaming done and cement less cup size 52 was fixed augmented with 2 screws (Figure 3c). The K wires were removed after the cup was found stable. The femur was prepared and uncemented corail stem size 11 was inserted and size 36x0 femoral head was found stable. C arm was used to confirm the placement of implants (Figure 3d). All soft tissues were closed in best possible way, the hip was stable (Figure 3e). An abductor brace was applied post



Figure 4.

## Discussion

Femoral head fractures in combination with posterior dislocation of the hip are rare presentation. Since first reported by Birkett in 1869 only a small number of cases have been reported world widen [6]. Epstein et al.'s found about 10% in their series. It was Pipkin who subs classified these fractures and various other classifications have been proposed by several authors who claim to be improved version [5, 7]. Pipkin's classification remains most popular and widely accepted. They divide them into 4 types with type 3 having associated acetabular fractures and type 4 having associated neck fractures. Our case is unique with fracture in the trochanteric area. The trochanteric area has never been described. The acetabular fracture is also an addition actually a combination pattern of Pipkin's 3 and 4. We believe that there should be a type 5 including a both neck and acetabular fracture in association of head fracture and a subtype T wherein fracture configuration is in trochanteric region instead of classical neck.

The cases of type 3 or 4 are very sporadic for any protocol to be made. In younger individual attempts to fix the neck fragment, often augmented with vascularised fibular graft has been made in past but long term follow up is lacking. Osteonecrosis is a complication and surgeons have tried different approaches with varying results [8,9]. In our case closed reduction was not possible and moreover the impeding ischemia to sciatic pushed us for an early operative intervention. Taking into consideration- a difficult fracture pattern, age, urgency of surgery, peripheral set up hospital and an invincible avascular necrosis; we thought a Total hip arthroplasty (THA) was an appropriate solution than open reduction. Yet the challenges of choosing the right implant from the whole Pandora box of prosthesis implants remained. In surgery, the aim was to stick to principles of bone preservation like calcar reconstruction and thus avoiding

the distal fixation stems which were reserved for future revision if a situation arose. A constrained hip would have more advantages in this circumstance of soft tissue rent, but the large head option of 36 was stable enough in our case. We admit management to be debatable with expertise hands. Final outcome does depend on return of sciatic function and proper occupational therapy since he was a laborer. A draw back in our report remains that despite best attempts to persuade the patient to visit nearest ortho clinic; he never turned up but telephonically did tell to having a over the counter sitting job in the village and satisfied with his hip.

## Conclusion

The case highlights a rare injury and attempts to give an expansion to the present Pipkin's classification. Even though the demerit of this report is a lacking follow up X ray and clinical picture, the initial presentation is worth to be noted among the practitioners and scholars.

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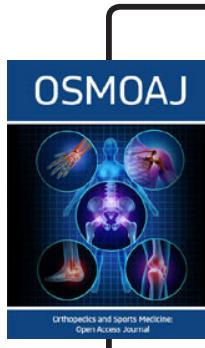
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