Irreducible posterior fracture dislocation of the hip
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**Clinical History:**

Moped driver who hit a stationary car sustaining a closed injury to his left hip.

**Imaging Findings:**

The patient, travelling at around 30 miles/hour on a moped hit a stationary car. He did not have any significant past illnesses. On examination he was haemodynamically stable and his only injury was localised to the left hip. Clinically the left hip was internally rotated and shortened. Sciatic nerve was not affected. Radiographs of the pelvis revealed a posterior fracture dislocation of the left hip (Thompson and Epstein type I) (Fig 1).

Closed reduction under sedation was attempted in the emergency unit. Further radiographs of the left hip revealed that the hip was still dislocated with possible fracture fragment or soft tissue interposition (Fig 2). The patient had a CT of the left hip which showed that the posterior lip fracture of the acetabulum was interposed, preventing the reduction of the hip dislocation (Fig 3). Under general anaesthesia and lateral position through a standard posterior approach the left hip was exposed. Femoral head had button holed through the posterior joint capsule and piriformis. The interposed fracture fragment was reduced without loss of soft tissue continuity following which the hip reduced. The fracture was fixed with two partially threaded cancellous screws (Fig 4). The hip joint was stable in all directions. Post operative recovery was uneventful. Patient was non weight bearing for six weeks and then started on full mobilisation.

**Discussion:**

Hip joint is a well contained ball and socket joint which does not dislocate as easily as the shoulder joint. The preventive mechanism is mainly by the bony contour of the acetabulum which contains the spherical femoral head in association with the labrum, capsule and ligaments. 80% of hip dislocations are posterior and produced by axial loading of a flexed hip forcing the femoral head out of the acetabulum posteriorly. A pure dislocation occurs when the hip is adducted and a fracture dislocation occurs when the hip is abducted. Associated sciatic nerve palsy (10-14%) can occur as it runs directly posterior to the hip joint. Rarely sciatic nerve palsy can be a late complication when the nerve is encapsulated by heterotopic calcification (1). Quite often it is a neuropraxia that resolves, if not, the prognosis is poor. A significant number of patients, up to 25%, have associated ipsilateral knee injuries (2).

Dislocation of the hip has to be reduced within six hours of the injury when the incidence of avascular necrosis is 5% which rises to 50% when the delay is more than six hours. Several traditional techniques have been used to manipulate the posterior dislocation of hip – Bigelow’s, Stimson’s, Allis’ etc., and modifications of these techniques as described by Walden PD (3) and Howard (4). After closed reduction of hip Hougaard et al, recommend computerised tomography to rule out intra articular fracture fragments (5). Avascular necrosis may develop up to 3 years post injury and the incidence is dependent on the time between injury and reduction of the dislocation. Protected weight bearing has no effect on the development of avascular necrosis. When there is no associated
posterior fracture dislocation early weight bearing is possible. Heterotopic ossification occurs in 2% after dislocation or fracture-dislocation of the hip, especially when open reduction has been necessary, but it is usually not disabling. Fracture dislocations of the hip are significant injuries with a potential for serious complications both in the immediate future and long term. This case is presented to stress the fact that fracture dislocations of hip may require open reduction within six hours and should be undertaken with care to prevent further soft tissue disruption.

**Differential Diagnosis List:** Irreducible posterior fracture dislocation of the left hip

**Final Diagnosis:** Irreducible posterior fracture dislocation of the left hip

**References:**

Cornwall R, Radomisli TE.
Nerve injury in traumatic dislocation of the hip.

Walden PD, Hamer JR.
Whistler technique used to reduce traumatic dislocation of the hip in the emergency department setting.

Hougaard K, Lindequist S, Nielsen LB.
Computerised tomography after posterior dislocation of the hip.

Tabuenca J, Truan JR.
Knee injuries in traumatic hip dislocation.

Howard CB.
A gentle method of reducing traumatic dislocation of the hip.
Description: Radiograph of pelvis showing posterior fracture dislocation of left hip. Origin:
Figure 2

Description: Failed closed reduction of fracture dislocation of left hip. Origin:
Description: CT scan of left hip showing interposition of posterior acetabular lip fragment preventing closed reduction. Origin:
**Description:** Radiograph showing concentric reduction of left hip and fixation of posterior acetabular lip fracture with two screws. **Origin:**