Simple hip dislocations in the elderly

Introduction

The hip joint is an intrinsically stable joint as a result of the bony and labral anatomy of the acetabulum and femoral head. Hip dislocations are often associated with major trauma. Pure or simple dislocations without associated fractures are rare (Foulk and Mullis, 2010). Elderly patients tend to have hip or pelvic fractures or fracture–dislocations of the hip following major trauma (Rommens et al, 2015). This article presents what the authors believe to be the first case in the literature, of pure posterior hip dislocation in an elderly patient following minor trauma.

Discussion

Hip dislocations are uncommon injuries, representing only 5% of all traumatic joint dislocations. It has been reported that 70–100% of posterior hip dislocations result from motor vehicle collisions (Clegg

Figure 1. Anteroposterior pelvic radiograph at initial presentation demonstrating simple posterior left hip dislocation with no evidence of any associated fractures. There are mild osteoarthritic changes in the right hip.

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Figure 2. **a.** Lateral radiograph confirming posterior hip dislocation. **b.** Axial computed tomography scan with no acetabular or femoral head/neck fractures before reduction.

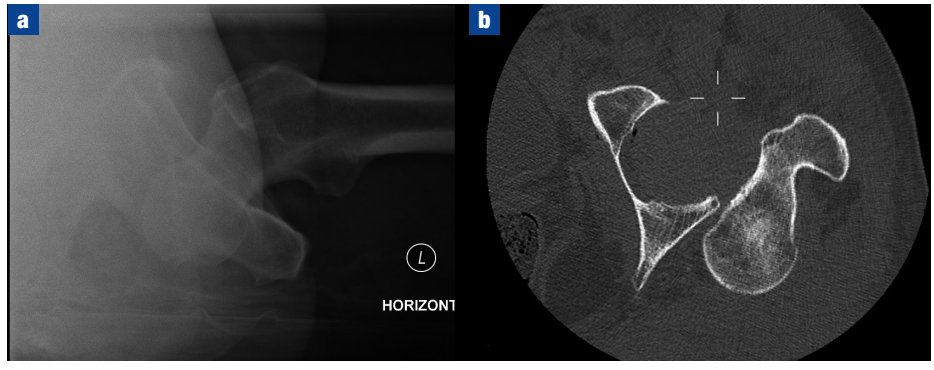

Figure 3. Fluoroscopy images intraoperatively following successful closed reduction and examination under anaesthetic to confirm concentric reduction and stability.

CASE REPORT

An 82-year-old man attended the emergency department following a fall off his bed landing awkwardly on his left side. He sustained a minor head injury with no loss of consciousness and was unable to bear weight. He was brought in by ambulance with a shortened and internally rotated left limb. His age and this presentation understandably gave the initial impression of a hip fracture. His past medical history included atrial fibrillation, hypertension, ischaemic heart disease, diverticulosis, and mild right hip osteoarthritis. He lived alone in a bungalow and mobilized independently unaided. His general clinical examination was unremarkable. His left limb was shortened, mildly flexed and internally rotated with pulses present distally but paraesthesia in the leg in both superficial and deep peroneal nerves distribution, suggestive of compression of the sciatic nerve around the hip.

His plain radiographs (*Figures 1* and *2a*) confirmed a left simple posterior hip dislocation. An urgent computed tomography scan was undertaken ruling out any associated femoral neck or acetabular fractures (*Figure 2b*). He then underwent an emergent closed reduction under general anaesthetics. The hip was reduced using the Allis manoeuvre of in-line traction with an assistant applying counter pressure on the pelvis, adduction of the flexed hip, traction, then abduction and extension of the hip with an audible clunk confirming the reduction. Fluoroscopy images (*Figure 3*) confirmed the reduction which appeared concentric. Examination under anaesthetic revealed a stable joint in functional ranges of motion.

Post reduction computed tomography scan (*Figure 4*) confirmed concentric reduction with no femoral head fractures or loose bodies in the joint. The paraesthesia resolved post reduction and the patient was mobilized as tolerated and had an uneventful recovery.

Figure 4. Post reduction computed tomography scan **(a)** coronal, **(b-c)** axial and **(d)** sagittal planes. Theses images confirm concentric reduction, absence of any acetabular or femoral head fractures or loose osteochondral fragments in the joint.

LEARNING POINTS

- Simple hip dislocations do occur in the elderly with minor trauma in a similar way to hip fractures. They must be recognized and treated promptly to prevent potential complications.
- Advanced imaging such as computed tomography scanning is a useful adjunct to rule out associated fracture before attempted closed reduction.
- Emergent closed reduction is necessary to reduce the risk of complications such as nerve injury and femoral head avascular necrosis.
- Indications for operative management include an irreducible hip dislocation, associated femoral neck fracture, incarcerated fragments in the joint, femoral head splitting fractures, incongruent reduction and an unstable hip following reduction.

et al, 2010), so patients must be assessed in accordance with the Advanced Trauma Life Support principles. The mechanism of posterior dislocations is thought to be through forced adduction, internal rotation, and some degree of flexion of the hip. The direction of the femoral head at the time of injury determines whether a hip dislocation occurs with or without acetabular fracture (Upadhyay et al, 1985).

Associated nerve injuries have also been reported with a 10% incidence after traumatic hip dislocation involving the peroneal component of the sciatic nerve, mainly as a result of the nerve being stretched by the dislocated femoral head. Time to reduction is crucial in reducing the risk of major nerve injury (Cornwall and Radomisli, 2000).

Emergent closed reduction is necessary to reduce the risk of complications such as nerve injury and femoral head avascular necrosis. Many techniques have been described, but the Allis (1895) manoeuvre is familiar to most orthopaedic surgeons and has a high success rate. Once the simple hip dislocation is reduced and deemed stable with fluoroscopy at the time of closed reduction, patients can mobilize as tolerated and return to normal activities gradually. The long-term risk of avascular necrosis of the femoral head varies from 2 to 10% in the literature, with time to reduction considered a contributing factor. However, the common sequelae of simple hip dislocation is post-traumatic arthritis which has been reported in 20–40% of patients (Clegg et al, 2010; Foulk and Mullis, 2010). BJHM

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