

CASE REPORT

A RARE CASE OF IPSILATERAL HIP AND KNEE DISLOCATION

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ABSTRACT: High velocity road traffic accidents leads to complicated lower limb injuries. Such injuries demand highly experienced surgeon and are associated with high morbidity and mortality. Hip or knee dislocations are two different orthopaedic emergencies. Concomitant fracture dislocation of the hip and knee is rare and very few cases have been reported in the literature. A 45 year old man with history of fall from motorcycle came to the casualty. He had ipsilateral hip and knee dislocation. Immediately patient was shifted to operation theatre and closed reduction was performed under general anaesthesia. Reduction was confirmed under fluoroscopy and post-operative x-rays were taken. The functional results were excellent. After 2 months patient made an uncomplicated recovery and had satisfactory functional outcome with right hip having 110° flexion and right knee flexes to 120°. There was no neurological deficit. The urgency, that the treating surgeon shows in managing these injuries, significantly affects the prognosis and outcome finally achieved by these patients (golden period in reducing the hip joint has been described to be 6 hours).

KEYWORDS: Hip Dislocation, Knee Dislocation, Concomitant.

INTRODUCTION: High velocity road traffic accidents leads to complicated lower limb injuries. There can be severe disruption of osseous and soft tissue framework around hip and knee.¹ Such injuries demand highly experienced surgeon and are associated with high morbidity and mortality. Hip or knee dislocations are two orthopaedic emergencies. Concomitant fracture dislocation of the hip and knee is rare and very few cases have been reported in the literature. The significance of timely intervention (early and adequate resuscitation to stabilize the general condition of the patient, complete primary survey to look for other life-threatening conditions and a secondary survey to rule out other associated injuries and complications) in managing these situations cannot be understated.

CASE REPORT: A 45-year-old motorcyclist came to the casualty following a road traffic accident. The patient was riding the motorcycle car and sustained the injury when his motorcycle underwent a head to head collision against a bus. Patient's vital signs were stable. On examination, his right lower limb was in an attitude of flexion, adduction and internal rotation with painful restriction of all active and passive movements of the hip joint and right knee joint. A globular bony mass was palpable in the gluteal area and the "Vascular sign of Narath" was positive. The bilateral distal pulses were present and there was no distal neurovascular deficit. On the right side, there was an obvious deformity of the knee joint. There was no evidence of any external injury on either side. Regular monitoring of the capillary blood flow using continuous pulse-oximetry was carried out. Radiographs demonstrated a posterior dislocation of the right hip classified as Thompson and Epstein Type I. There was also a posterior dislocation of the right knee associated with fibula head fracture.

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Patient was immediately shifted to operation theatre where under general anaesthesia close reduction of posterior dislocation of right hip was performed using Allis manoeuvre and after that posterior dislocation of right knee was closely reduced using axial limb traction combined with derotation of tibia in the same sitting. There was no instability in both joints after fixation when he was examined under anesthesia. A well-padded anterior and posterior above knee slab was given after the reduction was confirmed under fluoroscopy.

After 2 months patient made an uncomplicated recovery and had satisfactory functional outcome with right hip having 110° flexion and right knee flexes to 120°. On examination, there was no evidence of knee ligaments instability.

DISCUSSION: Hunter (1969)² was the first to report the association of knee injuries with dislocation of the hip. In a series of 58 dislocations of the hip, he reported 24 knee injuries.

Gillespie (1975)³ reviewed 135 posterior dislocations of the hip of which 35 had a concurrent knee injury. He considered these to be the result of two distinct mechanisms: those due to a direct blow on the front of the knee when the hip is flexed and adducted (e.g., fracture of the patella), and those attributable to a valgus, varus, or rotational strain applied to the knee, such as collateral ligament rupture.

Motsis et al⁴ reported Concomitant ipsilateral traumatic dislocation of hip and knee following high-energy trauma.

Dubois et al⁵ reported Simultaneous ipsilateral posterior knee and hip dislocations.

Schierz et al⁶ reported Ipsilateral hip and knee dislocation.

Till date very few cases of Ipsilateral dislocation of the hip and knee has been described. The typical mechanism for posterior hip dislocations involves a deceleration accident that follows an axial impact on the knee, usually against the dashboard (following road traffic accident) or fall from height with the hip and knee joints in flexed position. Position of the hip, direction of the force vector and the anatomy of the proximal femur determine whether the patient suffers from isolated dislocation or fracture-dislocation. In a seated motorcyclist an axial component of this force would initially dislocate the femoral head; persistence of this force would result in posteromedial dislocation of the knee with preservation of the medial collateral ligament.¹

A high association of these injuries with diverse complications, such as neurovascular injuries, avascular necrosis of femoral head, coxarthrosis, stiffness, heterotopic ossification, recurrent instability, chronic pain and degenerative arthritis in the knee is well-known. Clinical examinations to rule out associated vascular or neurological injuries or compartment syndrome and other investigations including CT scans of the hip and knee joints (in addition to X-rays) to assess the joint and fracture morphologies and CT-angiography of the limb before and after the reduction are necessary in these situations. MRI scan may also be necessary at follow up to diagnose avascular necrosis of the hip joint or associated meniscal or cruciate injuries in the knee joint.⁷

The urgency, that the treating surgeon shows in managing these injuries, significantly affects the prognosis and outcome finally achieved by these patients (golden period in reducing the hip joint has been described to be 6 hours).⁴

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The usual management protocol includes an immediate attempt at closed reduction of the joints (knee followed by hip joint). However, factors like soft tissue impingement, capsular button-holing, or associated fractures may preclude any possibility of closed reduction, if so, an emergent open reduction should be appropriately planned⁷. Additional treatment involving knee ligament reconstruction is required to maximize knee function in healthy and active patients.

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Fig. 1: X-Ray AP view pelvis with both hip showing right hip posterior dislocation



Fig. 2: X-Ray AP view right knee showing posterior dislocation

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Fig. 3: X-Ray AP view pelvis with both hip (post reduction right hip)



Fig. 4: X-Ray AP view right knee post reduction

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