Ipsilateral Posterior Hip Dislocation and Femur Shaft Fracture – A Rare Presentation

Noama Iftekhar¹, Talha Rasool², Vladislav Pavlovich Zhitny³, Sajjad Rasool⁴

Abstract

Introduction: Posterior hip dislocation with an ipsilateral femur fracture is a rare injury – unfortunately, due to high-speed crashes, these complex injuries are increasing in nature.

Case Presentation: This case report examines a 24-year-old male who was involved in a high-speed motorcycle accident. X-ray imaging after clinical suspicion exhibited a posterior hip dislocation and ipsilateral femoral shaft fractures. Following unsuccessful reduction, the patient was treated under general anesthesia with a temporary external fixator followed by intramedullary nailing of the shaft.

Conclusion: Hip dislocation is a traumatic injury and an emergency. Although the treatment of a posterior hip dislocation can prove difficult in the context of an ipsilateral fracture, a closed reduction with intermedullary nailing can prove difficult and might require a Schanz screw of external fixation for the purposes of leverage and reduction.

Keywords: Complex fracture, ipsilateral femur fracture, orthopedic trauma, posterior hip dislocation.

Introduction

At present, posterior hip dislocation with an ipsilateral femur fracture is a rare injury with reported incidence of 1 in 100,000 [1, 2, 3]. Initial diagnosis of the posterior hip dislocation is delayed in nearly half of the cases due to focus on the obvious femoral fracture and resulting deformity [1]. Proper identification of both injuries requires careful examination by the emergency department and trauma team. In this report, we present a case of a young Pakistani male who suffered from a posterior hip dislocation and ipsilateral femur fracture following a vehicular accident.

Case Presentation

A 24-year-old Pakistani male presented to the emergency department following a high-speed motor vehicle accident. The patient was riding a motorcycle when the vehicle flipped over. The patient reported extensive generalized pain in his pelvic region, as well as sharp pain down his thigh. At the time of admission, the patient’s vitals were stable, and the patient was responsive to questions. The patient had obvious deformity of the right thigh. On initial observation, the right leg appeared to be slightly shorter than the left leg. Open wounds were observed on the right forearm and right leg.
In the case management, we then applied a temporary external fixator to the femur shaft while under general anesthesia. All of the procedures were completed under the same anesthesia – external fixator was first applied for manipulation/reduction of the hip joint. When reduction was achieved, we then converted the bicortical fixation to unicortical for manipulating fracture fragment of femur. After passing of guide wire for interlocking nail (ILN), we removed the external fixator to complete the procedure of ILN. We then proceeded to complete a closed reduction of the hip joint using an Allis maneuver. Secondary to the reduction, the fixator was removed. An ILN was placed in the femur for purposes of fixation. Skin traction was applied to the affected leg for 2 weeks to rest the joint. Isometric exercises of the affected limbs were held of the affected limbs in traction. Post-operative recommendations were for non-weight-bearing activity with axillary crutch walking for 4 weeks. This was followed by partial weight-bearing with fracture with union of femoral shaft.

Skin traction was applied to the affected leg for 2 weeks to rest the joint. Follow-up period was 4 months for the union of femur shaft fracture and 2 years for avascular necrosis of femoral head.

**Discussion**

Ipsilateral posterior hip dislocation and fracture of the femur shaft are unique, rare injuries achieved reportedly by high impact motor vehicle accidents [1, 2, 3, 4, 5]. The mechanism of injury typically is as follows: Hip dislocation often occurs first and continued adduction results in the femur fracture. In addition, longitudinal compression on a flexed and adducted hip is also thought to be a mechanism of injury [5, 6]. Delayed treatment of a hip dislocation often occurs, and open fracture can result in avascular necrosis of the hip [7, 8]. Neurologic injury typically accompanies traumatic dislocation, with the peroneal branch of the sciatic nerve occurring in many posterior hip fracture and dislocations [9]. Hip dislocation is a traumatic, dangerous orthopedic emergency which must be treated immediately; but, completing a successful reduction of the hip in context of this injury proves difficult because the proper traction and force necessary are not achievable [5, 6].

There is currently limited literature on the treatment of these combination injuries. Based on the skill and training of a surgeon, the surgical treatment varies. At present, closed reduction is preferred over an open reduction, as there are more frequent complications associated with open reduction – hemorrhage, infection, and avascular necrosis [5, 6, 9]. Closed reduction preceded by a temporary fixator followed by an ILN has been reported by other surgeons, as well, to show satisfactory results with few complications [1, 5, 6, 10].

**Conclusion**

Managing a posterior hip dislocation – an emergency trauma
condition – in combination with an ipsilateral femur fracture requires a thorough physical examination and radiographic imaging. Management using closed reduction and intramedullary nail fixation, accompanied by Schanz screw, may be required for appropriate leverage and reduction.

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