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Case Report

A Case of Traumatic Posterior Hip Dislocation in a 3-Year-Old Girl

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Abstract

Traumatic hip dislocations are rare in children but constitute an orthopaedic emergency due to the risk of avascular necrosis of the femoral head. This case report highlights the management of a posterior hip dislocation in a 3-year-old girl following a high velocity road traffic accident. The objective is to emphasize the importance of prompt diagnosis and reduction of dislocated hip to prevent complications such as avascular necrosis. This case highlights the significance of early intervention in achieving favourable outcomes in paediatric hip dislocations.

Introduction

Traumatic hip dislocations in children are rare, constituting less than 5% of paediatric dislocations [1]. In children under 10, even minor trauma can lead to hip dislocation due to ligamentous laxity, a relatively loose joint capsule, and greater joint flexibility [2]. In older children, however, high-energy trauma is generally required to cause a hip dislocation [1,3,4]. Posterior dislocation is the most common type, accounting for approximately 95% of traumatic hip dislocations [3]. These injuries are often associated with fractures due to high-energy mechanisms involved. Nearly 13% of traumatic hip dislocations have association with a fracture, more frequently fracture of the ipsilateral femur [5]. Avascular Necrosis [AVN] is the feared complication of hip dislocation. The only statistically proven risk factor is delay between dislocation and reduction. If the delay is greater than six hours, the risk of avascular necrosis is increased 20-fold [3]. Therefore, hip dislocations are time-sensitive medical emergencies, and prompt reduction is the most important point in its treatment [5]. The reduction can usually be achieved with gentle manipulation in children, and therefore, performing the reduction in the emergency department is recommended for most hip dislocations [5].

This case highlights the management of a rare traumatic posterior hip dislocation in a young child who sustained high-velocity trauma without associated fractures, emphasizing the importance of prompt intervention.

Case Report

Clinical Presentation

A 3-year-old girl was brought to the emergency department after falling from a two-wheeler following high-velocity collision with a four-wheeler. She was apprehensive and uncooperative, but we noticed an abnormally positioned right lower limb. The right lower extremity was flexed, adducted, and internally rotated [Figure 1]. No neurovascular deficits were noted.

Figure 1: Abnormal positioned right lower limb.

Figure 2: X-ray showing posterior dislocation of the right hip.

Management

X-ray revealed a posteriorly displaced femoral head, superior and slightly lateral to the acetabulum, which indicated a posteriorly dislocated right hip [Figure 2]. Prompt closed reduction of this dislocation by Allis manoeuvre was performed. Total elapsed time from injury to reduction was 3 hours. Post reduction neurovascular examination was normal. A CT scan was performed to check for additional injuries that may require surgical treatment and it revealed no fractures, hence patient was immobilized with skin traction for 4-6 weeks.

Outcome

At 5 weeks, skin traction was removed and the patient regained full range of pain-free motion. Radiograph showed no evidence of avascular necrosis. At a 12 week follow up, the patient had resumed normal activities without complications. Long term follow-up is planned, with a review scheduled in one year.

Discussion

Traumatic hip dislocations in children require urgent intervention to reduce the risk of avascular necrosis of the femoral head, a catastrophic complication of this injury [3]. The other main complications after traumatic hip dislocation include re-dislocation and early osteoarthritis [4]. Most children have an excellent outcome after this injury [4]. Despite the rarity of isolated hip dislocations in young children, this case demonstrates the importance of timely ED-based closed reduction of hip dislocations in children to prevent avascular necrosis and ensure favourable outcomes. Our findings align with literature emphasizing the efficacy of early reduction in preventing avascular necrosis in paediatric hip dislocations. This report contributes to the limited cases of isolated paediatric traumatic hip dislocations without fractures, particularly in the emergency setting.

Conclusion

This case of traumatic posterior hip dislocation in a 3-year-old girl highlights an unusual presentation in a paediatric patient with a high-energy injury but no associated fractures. The favourable outcome, with complete recovery and no evidence of avascular necrosis on follow-up, underscores the critical importance of early recognition and rapid reduction in paediatric hip dislocations to prevent long-term complications and ensure optimal recovery.

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Conflicts of Interest

No conflict of interest was declared by the authors.

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