CASE REPORT

RARE CASE OF TRAUMATIC POSTERIOR DISLOCATION OF THE HIP JOINT IN SEVEN-YEAR-OLD CHILD

Amina Gul Shehzar Khan, Asghar Khan, Zahid Ali, Muhammad Faizan Aziz, Muhammad Asif, Sajjad Khan, Ratib Kamal, Noman Sajjad, Khizar Ali

Department of Orthopaedic, Ayub Teaching Hospital, Abbottabad-Pakistan

This case report explores the unique challenges and management strategies associated with traumatic hip dislocation in a seven-year-old child, which is very rare paediatric orthopaedic emergency, emphasizing the importance of early diagnosis, intervention and management in paediatric orthopaedic emergencies. Under anaesthesia, it usually managed by close reduction. To avoid complication, the child being followed with series of examination and investigation.

Keywords: Posterior Hip Dislocation; Paediatric orthopaedic emergency; Complications; closed reduction

Citation: Khan AGS, Khan A, Ali Z, Aziz MF, Asif M, Khan S, *et al.* Rare case of traumatic posterior dislocation of the hip joint in seven-year-old child. J Ayub Med Coll Abbottabad 2025;37(1)199–201.

DOI: 10.55519/JAMC-01-14037

INTRODUCTION

A paediatric posterior traumatic dislocation of the hip is an uncommon injury that requires immediate attention from an orthopaedic specialist.[1,2] More than 80% of paediatric hip dislocations are caused by trauma.[2] There are two categories of hip dislocations: anterior and posterior.[3] Approximately eight to nine times as often posterior dislocations occur as anterior dislocations do.[4] Since the ligaments are elastic and the acetabulum is cartilaginous, little trauma frequently causes it in younger children.[5] The diagnosis of posterior dislocation is based on the characteristic deformity of internal rotation, flexion, and adduction. Occasionally, posterior dislocation goes undiagnosed. Associated shaft fractures, which can disguise the typical signs of dislocation, are a common cause of missed diagnoses.[6] The degree of damage and injuries to the femoral head vascular supply, which are outside the surgeon's control, as well as time and the precision of the reduction, which are reliant on the surgeon's experience, all affect the prognosis of hip dislocation.[7] Avascular neurosis, sciatic nerve palsy, degenerative arthritis, coxa magna deformity, heterotopic ossification, and recurring post-traumatic hip dislocations are among the problems that can arise from posterior hip dislocations.[8] The current standards state that in order to obtain optimum muscle relaxation, acute hip dislocations should be decreased within 6 hours (maximum 12 hours), always while under sedation.[9] Because of the potential of avascular necrosis (AVN) of the femoral head, children with traumatic hip dislocations should have rapid treatment with closed reduction under general anaesthesia following a prompt and definitive physical and radiologic assessment. While concentric reduction is normally easy to execute, it may need open surgery if the piriformis tendon, labrum, joint capsule, or loose osteochondral fragments are positioned in the way of concentric reduction. [10]

CASE PRESENTATION

A seven-year-old boy presented to us in emergency with history of fall from 3–4 feet height, who fell on the ground with impact on left posterior hip area. He experienced pain and unable to move his pelvis. Brother of patient took him to the hospital in ambulance. The child presented in emergency room with left leg externally rotated and was in pain. Initial survey and resuscitation started. Digital x ray of pelvis was advised upon which posterior hip dislocation was diagnosed (Figure 1). After initial resuscitation, he was sent to orthopaedic unit where his secondary survey was done. He was prepared for general anaesthesia after proper laboratory tests and others investigations. He was taken to casualty operating room where manipulation and closed reduction done under general anaesthesia. After that skin traction with weight about one third of body was applied and shifted to ward for monitoring post procedure digital x ray of pelvis was advised, to check the relocation of joint which was normal (Figure 2). Next morning computed tomography scan with 3D reconstruction of pelvis bone was advised to look for any complication to be occurred during dislocation and relocation of hip joint. MRI required for laberum damage, acetabular fractures or any fragments in joint. MRI scan turned to be normal after post reduction of hip joint (Figure 3). The other day patient was advised to discharge to home with immobilization and weight traction for ten days. Follow up was done after ten days with fresh investigation and x rays. After this follow up plan with physiotherapy and rehabilitation was advised. Follow up plan was discussed about one month, then six months and one year.

Figure-1: X ray at presentation, showing posterior dislocation hip

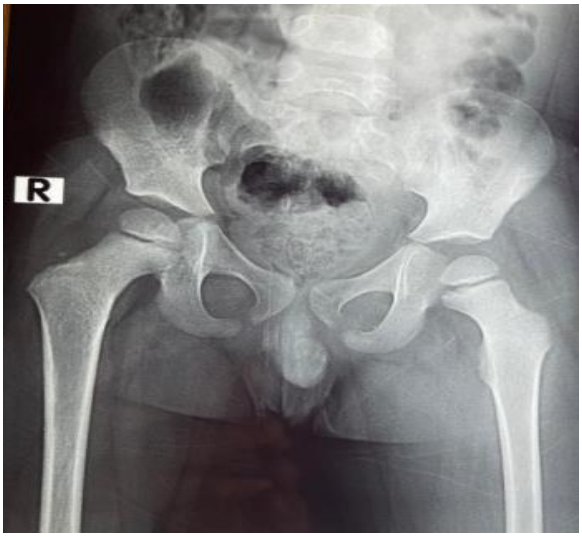

Figure-2: post procedure X ray, hip joints in normal position

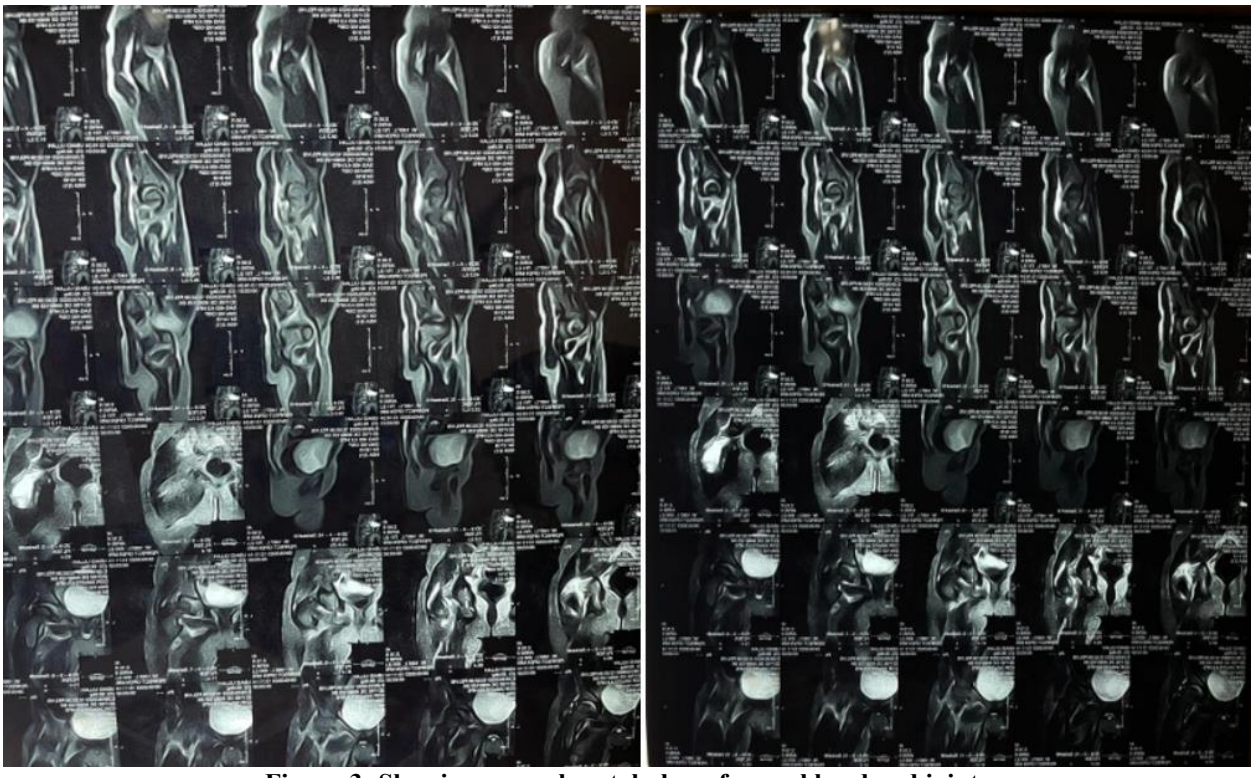

Figure-3: Showing normal acetabulum, femoral head and joints

DISCUSSION

Hip traumatic dislocation is an uncommon injury that needs to be treated immediately.[2] It may be inferior, central, anterior, or posterior. About 80% of hip dislocations in children are posterior dislocations.[5] In our case report, we discussed a seven-year-old male child with posterior hip dislocation. Hip dislocations in children under 10 years old may be linked to relatively mild hip trauma, while most hip dislocations in older children are linked to more serious injuries. Because of malleable cartilaginous parts like the labrum, acute hip dislocations in children often happen without a concomitant fracture of the acetabulum or femoral head. This is especially true in younger children.[11] Similarly our patient fell from height approximately three to four feet and there were no associated fractures. A pelvic radiograph is used to

help with the diagnosis. Once the radiograph clearly shows the diagnosis, a CT scan is rarely necessary.[12] The diagnosis was made digital x ray pelvis in our case (Figure 1). Abnormal limb posture, characterized by flexion, adduction, and internal rotation of the thigh, is the clinical diagnostic hallmark of a posteriorly dislocated hip.[13] The left leg of our patient was externally rotated. Prompt atraumatic reduction is the recommended course of treatment; ideally, this can be done in an operating room while the patient is under general anaesthesia, though successful reductions have been done in the emergency room both with and without muscle relaxation.[14]

After initial resuscitation and laboratory tests, the patient closed reduction under general anaesthesia was done in operating room. Then skin traction with weight one third of body weight was applied and shifted to ward for monitoring and post procedure x rays was advised (Figure 2). Hip dislocations in children have been associated with complications such avascular necrosis of the femur head, coxa magna, redislocation, and hip dysplasia, but overall hip dislocation prognosis is far better than in adults.[15] We advised post reduction MRI of left hip joint to look for any complications. However, the MRI of pelvic bone was normal (Figure 3). Consequently, the patient discharged to home with immobilization and skin traction for ten days. In our case, no complications were noted at one year of follow up.

CONCLUSION

Posterior hip dislocation is an uncommon injury in paediatric patients, and this case report underscores the significance of prompt diagnosis and appropriate intervention. The successful closed reduction and rehabilitation program highlight the importance of a multidisciplinary approach in managing posterior hip dislocations in children. Knowledge of the unique considerations associated with this injury in the paediatric population is essential for healthcare providers involved in the care of paediatric orthopaedic emergencies.

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Submitted: November 13, 2024	Revised: December 30, 20204	Accepted: December 30, 20204

Address for Correspondence:

Dr. Amina Gul Shehzar Khan, Department of Orthopaedic, Ayub Teaching Hospital, Abbottabad-Pakistan
Cell: +92 337 972 9052
Email: minakhan137@gmail.com