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Case Report

Traumatic bilateral posterior hip dislocation in 10 year old male child

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ABSTRACT

Traumatic bilateral posterior hip dislocation in skeletally immature patient is reported very less in literature. We report a 10 yr old boy presented to us following farmyard injury with bilateral posterior hip dislocation, which was reduced manually under sedation with uneventful follow-up and complete hip range of motion at 2 year.

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1. Case report

A 10 yr old boy presented in orthopedic emergency with pain and deformity in bilateral hip with exaggerated lumbar lordosis. He was giving history of fall from tractor in farmyard while traveling in his farm with his dad.

On physical examination, the patient was in moderate distress secondary to pain. His Vital signs were: blood

pressure, 120/80 mm Hg; pulse, 72 beats per minute; and respiration, 20 breaths per minute. There was no evidence of head injury, vomiting, loss of consciousness. The pupils were round, regular, and equally reactive to light and accommodation. His neck was supple and nontender. The chest wall was stable, with symmetric respirations. The abdomen was soft and nontender; active bowel sounds were audible, and there were no external signs of trauma. Genitourinary examination showed no scrotal hematoma or blood at the meatus.

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Both lower extremity was held in flexion, adduction, and internal rotation at the hip with slight flexion at the knee. Both gluteal region was tender. Significant pain on attempting passive extension of the both hip joint. The knee was stable, and there was no effusion. The right lower extremity was held in slight abduction and extension at the hip. Range of motion of the right hip was severely restricted in all planes because of pain. There was abrasion on the right knee joint. Distal pulses were palpable, and sensation and motor function were intact in both lower extremities.

Radiographic evaluation of the pelvis and both hips revealed bilateral posterior dislocation of the hip (Fig. 1). The patient was taken to the emergency operating room, where, under sedation, the posterior dislocation was reduced by closed manipulation 2 h after admission left hip is reduced with allis technique thereafter right hip is attempted to reduce with allis technique, failing which stimson's technique used and reduction achieved.

After manual reduction patient were immobilized with abduction splint and check X-ray obtained (Fig. 2). Abduction splint removed after 2 week and patient allowed partial weight bearing when patient able to perform active straight leg raising i.e after three weeks and full weight bearing in 6 weeks.

On follow-up examination 2 years after the initial trauma, the patient had no pain, no limp, and full range of motion at both hip joints clinically. He could actively participate in sports. A pelvic radiograph demonstrated no narrowing of the joint space and no arthritic changes on the right hip joint (Fig. 3). No avascular necrosis, deformity of the femoral heads, or cyst formation in either hip joint was noted. At the end of the clinical and radiologic evaluations, the patient's both hips was rated as excellent, according to the criteria of Thompson and Epstein.¹

2. Discussion

Traumatic dislocation of the hip is an uncommon injury in children, accounting for less than 10% of all reported cases of traumatic hip dislocation. Review of the literature reveals only

Fig. 2 – X-ray pelvis with b/l hip immediate post reduction.

limited case reports or combined studies from several clinics.^{2,3}

Bilateral traumatic hip dislocations in children and adults are very uncommon, with about 50 cases reported in the literature^{4–8} there is one case report in literature mentioning about bilateral posterior dislocation of hip with bilateral sciatic nerve palsy.⁹ On searching literature we are able to find only 2 articles about traumatic bilateral posterior hip dislocation in skeletally immature patients.^{10,11}

The trauma required to produce a dislocation at the hip joint can vary from trivial, as in tripping and falling, to severe high-energy force, as in motorcycle and automobile crashes. Younger children require less force to dislocate their hips. Offierski² reported that half of all hip dislocations in children 10 years or younger resulted from minor trauma. Pietrafesa and Hoffman demonstrated that 62–93% of hip dislocations result from motor vehicle crashes.¹²

For bilateral posterior hip dislocation to happen it need both hip must be loaded while in attitude of flexion, a posterior dislocation is produced when the flexed knee strikes against the dashboard with the hip flexed and adducted. In

Fig. 1 – X-ray pelvis with b/l hip showing bilateral hip dislocation.

Fig. 3 – X-ray pelvis with b/l hip after 2 years follow-up.

our case child was fallen on ground from tractor seat located around the height of 8 feet on his knees over ground.

Simultaneous bilateral traumatic hip dislocation is a true emergency. Prompt reduction of a hip dislocation is extremely important to prevent complications. The vast majority of hip dislocations in children can be managed by closed manipulation followed by casting, traction, or bed rest. Radiographs should be taken of the pelvis after all closed or open reductions to check concentric reduction. If there is any doubt about the concentric reduction, computed tomography is indicated.¹³

The ideal time to resume weight bearing has not been established. There is no consensus in the literature about the non-weight-bearing period. Freeman¹⁴ considers this period to be 2–3 months. Funk¹⁵ suggested that upto 4 months is needed, depending on the age of the patient. Endo et al² resumed wt bearing 6 weeks following reduction. Glass and Powell¹⁶ believe that a non-weight-bearing period is not related to the outcome, but, since in some of the reported cases there was evidence of synovial irritation many weeks after injury, it would appear that weight-bearing should not be attempted for a minimum of two to three weeks. In our case we had resumed partial wt bearing after 3 weeks and full wt bearing in 6 week.

Prognosis following hip dislocation is determined by many factors like time before reduction, age of presentation, severity of trauma, associated injuries. Among them most important prognostic factor is delay between injury and reduction.¹⁷ Even under ideal conditions, however, the risk of avascular necrosis cannot be completely eliminated and incidence of avascular necrosis was 10% or less following hip dislocation in skeletally immature patients.^{17,18} A review of the literature demonstrated that three-quarters of the patients with avascular necrosis had reduction delayed by more than 24 h and that the others received severe trauma directly to the hip.^{7,18} In our case we attempted reduction 2 h following injury and there is no evidence of avn following or chondrolysis at 2 year follow-up.

3. Conclusion

Simultaneous bilateral traumatic hip dislocation in a child is extremely rare and constitutes a true emergency. The time before reduction, the severity of the trauma, and fracture-dislocation adversely affect prognosis. Careful history and physical examination is mandatory for diagnosis. Reduction should be performed as early as possible and must be confirmed with anteroposterior pelvic radiography. After reduction, patient should be immobilized until soft tissue healing take place around hip. The patient should be followed regularly with radiographs to rule out avascular necrosis.

Conflicts of interest

No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subject of this article.

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