Traumatic Posterior Dislocation of Hip in Child: A Case Report

Dinesh Dhar

1Senior Specialist Orthopedics, Nizwa Regional Referral Hospital, Sultanate of Oman

ABSTRACT

Traumatic hip dislocation in children is uncommon, but like in adults, it is an orthopedic emergency. We report a rare case of traumatic posterior dislocation left hip in a 9 year old boy following a motor vehicle accident. The dislocation was promptly reduced by closed manipulation in Accident and Emergency department with the application of above knee skin traction which was maintained for 3 weeks followed by non-weight bearing crutch walking for another 6 weeks. On follow up, the patient had a good outcome without any evidence of avascular necrosis (AVN). In this rare case report a literature review of pediatric hip dislocation with treatment recommendations have been highlighted.

Keywords: Traumatic Posterior Dislocation; Hip; Children; Avascular Necrosis

INTRODUCTION

As compared to adults, traumatic dislocation of the hip joint is a very rare condition in the pediatric population. In children, laxity of iliofemoral ligaments and soft pliable acetabulum predisposes the immature hip joint to dislocation even with minor trauma [1].

CASE REPORT

A 9 year old boy sustained trauma to left hip in a motor vehicle accident (MVA); a car roll over. He was brought to Accident and Emergency Department (ED) with complaints of pain around left hip, limited movements of the left lower limb and abdominal pain. On examination, the patient had stable vitals, pallor, tender left hypochondrium and affected left lower limb shortening. Lower limb was held in flexion, adduction and internal rotation. There was no distal neurovascular deficit. Ultrasound of abdomen found intraperitoneal free fluid, splenic injury. Antero-posterior radiographs of pelvis confirmed Type 1 (Thompson-Epstein classification) posterior dislocation of left hip without any associated fracture (Figures 1 & 2). Under sedation in ED the dislocation was reduced by gentle manipulation using Allis technique and affected limb immobilized in above knee skin traction. Post reduction radiographs of left hip showed a concentric reduction (Figure 3). Total time elapsed from injury to the reduction of dislocation was around 3 hours. Abdominal trauma was managed conservatively and once it was decided that patient will not need an abdominal surgical procedure, management of hip injury began. Bucks traction on left lower limb was maintained for 3 weeks with x-rays at weekly interval. After 3 weeks, traction was removed and the patient was mobilized under physiotherapist care with non weight bearing crutches for 6 weeks. He was seen on follow up at 3 and 6 months and was found to have a normal hip examination with a painless full range of movements of the left hip and no evidence of AVN on follow up radiographs (Figure 4).

DISCUSSION

Traumatic hip dislocation in children constitutes a true orthopedic emergency. Less than 5% of all traumatic dislocations occur in children less than 14 years of age [2, 3]. Male to female incidence is 3:1 with no difference in predilection to certain side of the body [3]. Bilateral dislocation occurs in less than 1% [4]. The femoral head may dislocate in any direction but like in adults, posterior dislocation occurs more frequently [4]. Most common age group for a traumatic hip dislocation is between 7-10 years [1]. Trivial falls in children less than 10 years can lead to dislocation of hip. On the other hand, significant trauma is required for dislocation to occur in adults. The difference is due to general-
Figure 1: Antero-posterior view of pelvis showing posterior dislocation of the left hip

Figure 2: Posterior dislocation of the left hip

Figure 3: X-ray immediately after reduction of left hip

-ized ligament laxity and soft acetabular cartilage. However in children older than 10 years, high energy trauma such as due to MVA or sports related activities is common cause [5,6]. Fractures with dislocation are not as common in children as compared to adults [7]. Our patient sustained significant trauma due to MVA; car rollover with associated abdominal trauma. Children with posterior dislocation of the hip present with the affected hip in flexion, adduction and internal rotation with associated shortening of affected limb and femoral head palpable posteriorly compared to the normal limb. Neurovascular assessment should be recorded in all cases. Plain radiographs are adequate to confirm the diagnosis of dislocation hip. CT scan or MRI may be used in cases where incongruity is noted on plain radiographs due to loose osteocartilaginous fragments, inverted labrum or haemarthrosis, all of which prevent congruous reduction [8].

The main goal of treatment is an early reduction of dislocated hip preferably in first six hours after injury in order to minimize the chances of AVN. Closed reduction and manipulation by any of the known methods can accomplish the reduction of hip in most cases [4]. In our patient, reduction was done in ED by Allis method which reduced the total elapsed time between injury and reduction, which is an important factor for vitality of femoral head [4].

The common consensus in the management of traumatic hip dislocation in younger children is immobilization in a hip spica cast for 3-4 weeks followed by progressive protected weight-bearing and range of motion exercise. In older children, 2-6 weeks of traction followed by protected weight-bearing is recommended [2,3]. Our patient, after discharge was allowed non-weight bearing with crutch walking for next 6 weeks.

The major complications known to be associated with hip dislocation is AVN of the femoral head [5]. Its incidence ranges from 5-10%. However, if the reduction is delayed more than six hours, the risk of AVN increases 20 folds [9]. Increased age, high energy trauma is also associated with high risk of AVN [3]. Other complications associated with hip dislocation include fractures of femur neck, separation of the capital epiphysis, heterotrophic calcification, coxa magna, neurovascular damage and osteoarthrosis [10]. Post traumatic hip dislocation in children is an orthopedic emergency early diagnosis and prompt reduction within 6 hours is important to avoid complications. Good results can be obtained with an appropriate management.
Figure 4: Follow up X-ray at 6 months

REFERENCES