Recurrent Traumatic Dislocation Of The Hip In A Child

T Tay, Y Mei

Citation

T Tay, Y Mei. *Recurrent Traumatic Dislocation Of The Hip In A Child*. The Internet Journal of Orthopedic Surgery. 2007 Volume 10 Number 1.

Abstract

Traumatic recurrent dislocation of the hip joint is an uncommon condition in the paediatric population. Hereby, we report one such case in a seven-year old child who sustained a posterior dislocation of the hip joint following a fall. To the best of our knowledge, this appears to be the first reported case of a recurrent traumatic hip dislocation in children, serving to highlight the literature review and management strategies of this type of case.

INTRODUCTION

Traumatic hip dislocation is an uncommon injury in children and adolescents. Falls are the most common cause followed by high velocity injuries such as motor vehicle accidents and sports-related incidents. It may be seen in relatively minor trauma in young children less than 10 years of age due to joint laxity and a shallow acetabular fossa.

CASE REPORT

N, a 7 years old Malay girl presented to Accident and Emergency Department with pain of the right hip and inability to move the lower limb after she slipped and fell on the floor.

Her right lower extremity was held in flexion at the hip and knee, adducted and internally rotated. She resisted attempts at passive range of motion of the hip because of pain. Pulses were felt. Motor and sensory functions were all intact. Hyperlaxity of joint were noted in upper and lower limbs. (Figure 1) No evidence of high arch palate and normal arm span to height ratio elicited. The rest of her physical examination was normal.

Figure 1

Figure 1: Hyperlaxity of the joint

The diagnosis of posterior dislocation of right hip was made. This was the third episode she had had whereby the first episode of hip dislocation occurred in 2005 after she tripped over some wires on the floor. The 2nd episode was in 2006 where she dislocated the same hip after a fall from stairs. She was sent to UMMC on both occasion and the dislocated hip was reduced and skin traction was applied for 3 weeks. She is asthmatic and her last attack was 6 months ago. Her mother also has the feature of ligament laxity but no complication has been reported.

Radiographs of the pelvis and hips were obtained in the casualty. (Fiqure 2)

Figure 2

Figure 2: Posterior dislocation of the right hip seen. There was no fracture.

The patient was sedated in the emergency department. Closed reduction of the right hip was done by Allis's maneuver. Concentric reduction was obtained. Skin traction was applied and she was sent to the ward. (Figure 3)

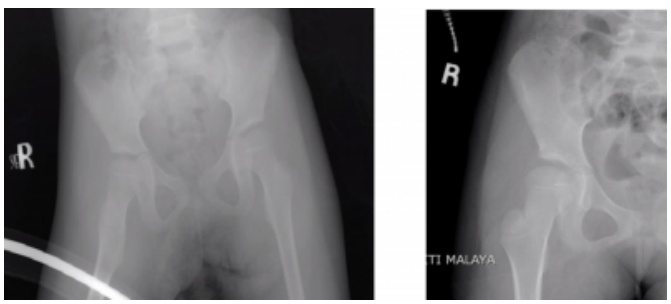
Figure 3

Figure 3: Skin traction applied

Repeat radiographs showed complete reduction with no evidence of fracture or epiphyseal injury. (Figure 4) CT scan showed normal acetabulum and no evidence of avascular necrosis of hip.

Figure 4

Figure 4: Complete reduction of hip



DISCUSSION

Traumatic dislocation of the hip is relatively rare injury in children. It is estimated that the incidence in paediatric age group is less than 0.1% of all traumatic dislocation of hip. The large series mostly in adult published by Thompson and Epstein demonstrated that this injury is twenty five times less common in children than adults.[4] Mason reviewed the literature in 1954 and found eighty-eight cases of childhood traumatic hip dislocations reported in the period from 1922 to 1954.[8] In I961, Glass and Powell sent a questionnaire to 340 orthopaedic surgeons in England and could find only forty-seven patients for study.[7] The Pennsylvania Orthopaedic Society [9,10] and Piedmont Orthopaedic Society have reported the largest American series of childhood traumatic hip dislocations with fifty-one and forty cases, respectively. One can readily understand that virtually no orthopaedic surgeon can see, treat and follow enough cases to become truly authoritative on this subject.

The soft pliable cartilage and generalized ligamentous laxity that comprise a child's acetabulum can lead to recurrent dislocation secondary to insignificant falls, as was evident in our case. However we are unable to find in the literature or personal inquiry regarding the incidence of recurrent hip dislocation as a result of hyperlaxity of joint in children. A thorough search of literature reveals such dislocations to have been attributable to fall, motor vehicle accident, basketball and rugby.

Hip dislocations tend to be mostly posterior, in view of the anatomical configuration of the ball and socket hip joint, but anterior and inferior dislocations have also been reported infrequently. These injuries often occur after a blow to the knee with the hip and knee in flexion. The leg would be adducted, flexed and internally rotated at the hip, as in this case. There is a relative shortening of the extremity and protrusion of the greater trochanter into the gluteal region. Anterior dislocations, on the other hand, are usually caused by an excessive external rotation or a direct blow to the greater trochanter with the hip externally rotated. The leg would typically be held in abduction, extension and external rotation. A plain radiograph may confirm a fracture, avulsion, dislocation or soft-tissue injury. In cases of hip dislocation, other views of the hip joint (e.g. oblique and lateral views) may be difficult to obtain because of the limited range of motion in some patients. Additional radiographs of the same extremity may be indicated to rule out other fractures or injuries.

There is a controversy regarding how much immobilization after reduction is proper. Freeman concluded that patients

should be non weight bearing for 2-3 months to guard against synovial irritation.[5] Banks advised immobilization for 4 to 6 months to produce disuse atrophy, hence the dense appearance of femoral head in vascular necrosis would then be obvious.[6] In this case the patient was immobilized for 3 weeks in skin traction followed by partial weight bearing for 6 weeks to allow soft tissue healing.

Major complications that are known to be associated with dislocation of the hips include avascular necrosis of the femoral head leading to premature osteoarthritis, neurovascular damage, fracture of the neck of femur and separation of epiphysis.3 Coxa magna, premature epiphyseal fusion, and heterotopic calcification have also been noted to occur as long-term sequelae to this clinical entity.

The role of surgical intervention in childhood traumatic hip dislocation remains uncertain because mostly these hips can be reduced easily without complication. However, surgery is to be employed if evagination through soft-tissue defects is demonstrated. Soft-tissue interposition, such as entrapment of the acetabular labrum, is a rare but important cause of failed reduction of a hip.[11] Early diagnosis of incomplete reduction due to interposition of soft tissue is important, because delayed treatment is associated with a greater incidence of avascular necrosis of the femoral head and early onset of osteoarthritis.

In conclusion, this case report serves to highlight that traumatic dislocation of the hips in children is rare but not to be missed out. A high index of suspicion is required, as early recognition and prompt relocation of the hip joint by either closed or open techniques, will help to prevent potentially serious complications.

CORRESPONDENCE TO

Dr. Terence Department of Orthopaedic Surgery, Faculty of Medicine, University of Malaya, 50603 Kuala Lumpur, Malaysia. Tel: 0124388687 Email: terencetkw99@yahoo.com

References

1. Gartland JJ, BennerJH. Traumatic dislocations in lower extremities in Children. Orthop Clin North Am .1976; 7:687-700
2. Hamilton PR, Broughton NS: Traumatic hip dislocation in childhood. J Peadiatr Orthop 1998; 18:691-694.
3. Barquet A. Natural history of avascular necrosis following traumatic hip dislocation in children: a review of 145 cases. Acta Orthop Scand.1982; 53:815-820
4. Thompson, V. P and Epstein, H.C. Traumatic Dislocation of The Hip. A Survey of Two Hundred and Four Cases Covering a Period of Twenty One Years. J Bone and Joint Surg 33-A: 746-778, July 1951
5. Freeman, G.E. Jr, Traumatic Dislocation of the Hip in Children. A case report of seven cases and review of the literature. J. Bone and Joint Surg 43-A: 401-406, Apr 1961
6. Bank,S.W. Aseptic Necrosis of the Femoral Head Following Traumatic Dislocation of The Hip. A Report of Nine Cases J. Bone and Joint Surg 23: 753-781, Oct 1941
7. Glass, Alan,and Powell,H. D. W.: Traumatic Dislocation of the Hip in Children. An Analysis of Forty-seven Patients. J. Bone and Joint Surg., 43-B: 29-37, Feb. 1961.
8. Mason, M. L.: Traumatic Dislocation of the Hip in Childhood. Report of a Case. J. Boneand Joint Surg., 36-B: 630-632, Nov. 1954.
9. Pennsylvania Orthopaedic Society: Traumatic Dislocation of the Hip Joint in Children. Report of the Scientific Research Committee. J. Bone and Joint Surg., 42-A: 705-710, June 1960.
10. Pennsylvania Orthopaedic Society: Traumatic Dislocation of the Hip Joint in Children. Final Report of the Scientific Research Committee. J. Bone and Joint Surg., 50-A: 79-88, Jan. 1968.
11. Chun KA, Morcuende J, El-Khoury GY. Entrapment of the acetabular labrum following reduction of traumatic hip dislocation in a child. Skeletal Radiol. 2004 Dec; 33(12):728-31. Epub 2004 Jul 28

Author Information

Terence Tay
Department of Orthopaedic Surgery, Faculty of Medicine, University of Malaya

Yong Su Mei
Department of Orthopaedic Surgery, Faculty of Medicine, University of Malaya