



E-ISSN: 2707-8353
P-ISSN: 2707-8345
IJCRO 2020; 2(2): 75-78
Received: 14-05-2020
Accepted: 19-06-2020

Syam Gangadharan Nair
Senior Resident, Department
of Orthopedics, ESIC Model
and Super Speciality Hospital,
Asramam, Kollam, Kerala,
India

Sudheesh VS
Head of the Department,
Department of Orthopedics,
ESIC Model and Super
Speciality Hospital, Asramam,
Kollam, Kerala, India

Sachin Joseph
Senior Resident, Department
of Orthopedics, ESIC Model
and Super Speciality Hospital,
Asramam, Kollam, Kerala,
India

Aswin Thankachan
Senior Resident, Department
of Orthopedics, ESIC Model
and Super Speciality Hospital,
Asramam, Kollam, Kerala,
India

Bimal A Kumar
Consultant, Department of
Orthopedics, ESIC Model and
Super Speciality Hospital
Asramam, Kollam, Kerala,
India

Corresponding Author:
Syam Gangadharan Nair
Senior resident, Department of
Orthopedics, ESIC Model and
Super Speciality Hospital,
Asramam, Kollam, Kerala,
India

Recurrent traumatic dislocation of hip in a child: A case report

Syam Gangadharan Nair, Sudheesh VS, Sachin Joseph, Aswin Thankachan and Bimal A Kumar

DOI: <https://doi.org/10.22271/27078345.2020.v2.i2b.32>

Abstract

Traumatic dislocation of hip in paediatric population is an uncommon condition and recurrent dislocation is even rarer. Various factors are responsible for recurrent dislocation including age under 8 years, hypothyroidism, Down's syndrome, presence of acetabular fracture with deficient posterior bony support, presence of hip dysplasia, pre-existing paralytic conditions, delayed reduction, and inadequate immobilization of the hip. Timely and emergent management is the key for achieving good long term functional outcome. Here we report a case of six-year-old male child having generalized ligamentous laxity with recurrent traumatic dislocation of left hip, two times in the past two years and his 18 months follow up result.

Keywords: Recurrent, paediatric population, uncommon condition

Introduction

Traumatic dislocation of hip in paediatric population is an uncommon condition and accounts for less than 5% of hip dislocation^[1]. Posterior dislocations are more common than anterior and inferior dislocations^[2]. Hip dislocations in children are usually caused by trivial trauma and hence incidence of associated fractures are less common compared to that in adults^[3] Timely management is crucial to achieve good long term results.

Case Report

A seven-year-old male child presented to the emergency department with history of pain and restricted movements of left hip after he slipped and fell while playing football. His left lower limb was in flexed, adducted and internal rotated position. Any attempt to passive movement of left lower limb was restricted due to pain. The distal pulse of left lower limbs was well palpable and was symmetrical to opposite limb. There was no motor or sensory deficit on the affected limb. There were no physical features of any syndromic associations. There was hyper laxity of the joints of upper and lower limbs with a Beighton score of seven. (Fig1), (Fig2), (Fig3). There was no high arched palate and arm span to height ratio was normal.

Radiograph revealed posterior dislocation of left hip joint (Fig4). This was his second episode of left hip dislocation. First episode occurred two years back, at the age of four years when he had similar episode of trivial fall, which was managed conservatively by closed reduction within two hours of trauma and skin traction for 3 weeks.

The current dislocation was reduced by Allis maneuver under intravenous sedation in the emergency department within two hours of trauma and a skin traction was applied. Post reduction radiographs were taken which showed concentric hip joint reduction without any physeal injury or fractures (Fig5). An MRI was taken the next day which confirms concentric joint reduction. There were no residual complications such as avascular necrosis due to the previous episode of dislocation. There was no evidence of hip dysplasia or labral tear (Fig6). Patient was managed with skin tractions for four weeks followed by partial weight bearing for six weeks.

On 18 months follow up, child had no further episodes of dislocations, the range of movements of left hip was full and he had a normal gait

Discussion

Traumatic dislocation of hip in paediatric population is an uncommon condition and accounts for less than 5% of hip dislocation^[1].

The condition is more prevalent in males compared to females with sex ratio of 2:1 to 3:1 [3]. This may be due to higher physical activities in male children. The mechanism of injury contributing to hip dislocation in children are less trivial compared to those in adults in whom high velocity injury such as road traffic accidents are usually responsible for hip dislocation [4, 5]. This may be attributed to number of factors in paediatric hip such as shallow and cartilaginous acetabulum, increased valgus alignment of proximal femur, increased anteversion of femoral neck and more elastic ligamentous support surrounding the hip [6]. These factors may also be responsible for recurrent hip dislocation in children but we were unable to find the true incidence of recurrent dislocation due to ligamentous laxity alone in any of the literature. Posterior dislocations are more common (80%) than anterior or inferior dislocations [7]. But they are rarely associated with femoral or acetabular fractures. In the classic study published by Epstein, only 17% of children (aged 2–15 years) with posterior hip dislocations were associated with fracture (Types II to V Thompson-Epstein). Plain anteroposterior pelvis radiograph is the gold standard for diagnosing hip dislocation [3]. Careful evaluation must be done to rule out an occult physeal fracture which can get displaced during the reduction maneuver if left undiagnosed [8]. Post reduction radiograph should be carefully evaluated for incongruous reduction, physeal injury or associated femoral or acetabular fractures. Routine post reduction CT scan is not recommended for paediatric hip dislocations [9]. MRI scan is particularly important in the setting of a recurrent dislocation to rule out capsular tears, labral detachments, and fractures affecting the cartilaginous portion of the posterior wall of acetabulum [10]. There are no clear cut guidelines stating the duration of immobilisation following reduction of pediatric hip dislocation. Epstein recommended traction for 3–4 weeks for patients with simple hip dislocation, allowing for the capsular tear to heal. For patients with associated fractures of acetabular rim or floor, he suggested 6–8 weeks in traction [3]. Banks advocated immobilization for 4 to 6 months to produce disuse atrophy so that the dense appearance of avascular femoral head would then be more obvious [11]. Herrera-Soto and Price advocated immobilization in hip spica cast or bed rest with an abduction splint for children younger than 10 years; protected weight bearing for 6–8 weeks for older children and adolescents [12]. We treated our patient with skin traction for four weeks followed by partial weight bearing for six weeks to allow soft tissues to heal. Major complications associated with posterior dislocation of hip includes avascular necrosis, incongruent reduction, recurrent dislocation, proximal traumatic epiphysiolysis and rarely sciatic nerve injury. The risk of avascular necrosis is mainly dependent on the ischemia time rather than on the age or mechanism of injury, signifying the need for emergent management of this condition [13]. Predisposing causes for recurrent dislocation of hip are: age under 8 years, presence of acetabular fracture with deficient posterior bony support, presence of hip dysplasia, pre-existing paralytic conditions, delayed reduction, and inadequate immobilization of the hip [14]. Barquet suggested association of acetabular dysplasia, or a predisposing general condition like hypothyroidism or Down's syndrome to recurrent dislocation [15]. In our patient general conditions like Down's syndrome, Marfan's syndrome and hypothyroidism were ruled out during initial assessment. Hip dysplasia, incongruent reduction and labral

tear were ruled out with the help of MRI. The only positive physical finding was the presence of generalized joint and ligament laxity with a Beighton score of seven which we concluded as the attributing factor to the recurrent hip dislocation in the patient.



Fig 1: Passive apposition of the thumb to the flexor aspect of the forearm



Fig 2: Passive dorsiflexion and hyperextension of the MCP joint beyond 90°



Fig 3: Passive hyperextension of the knee beyond 10°



Fig 4: Plane radiograph of pelvis showing posterior dislocation of left hip



Fig 5: Post reduction radiograph

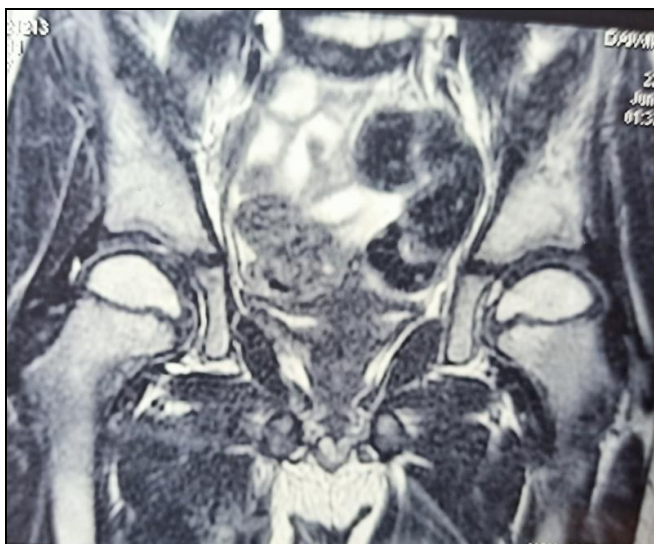


Fig 6: MRI showing concentric reduction of hip joint

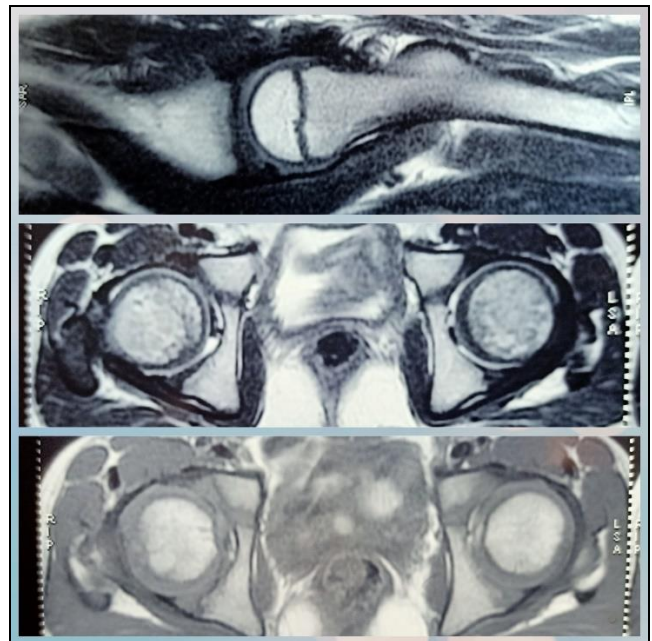


Fig 7: MRI showing absence of physeal injury or labral tear

Conclusion

Paediatric hip dislocations are uncommon condition which need emergent intervention to avoid long term complication. In a patient presenting with recurrent hip dislocation risk factors such as syndromic associations, hypothyroidism, capsular / labral tears and incongruent reduction must be ruled out. Hyper laxity may be the underlying cause for recurrent dislocation when all other causes are ruled out. Patient should be followed up till skeletal maturity to assess the functional outcome and to detect late complications.

References

1. Baker JF, Leonard M, Devitt BM, Queally JM, Noel J. Traumatic hip dislocation in a 3- year-old girl. *PediatrEmerg Care*. 2011;27(12):1178-9.
2. Başaran SH, Bilgili Mss, Erçin E, Bayrak A, Öneş HN, Avkan MC. Treatment and Results in Paediatric Traumatic Hip Dislocation: Case series and review of the literature. *Turkish Journal of Trauma and Emergency Surgery*. 2014;20(6):437-42.
3. Epstein HC. Traumatic dislocations of the hip. *Clin Orthop Relat Res* 1973;(92):116-42.
4. Vialle R, Odent T, Pannier S, Pauthier F, Laumonier F, Glorion C. Traumatic hip dislocation in childhood. *J Pediatr Orthop* 2005;25(2):138-44.
5. Offierski CM. Traumatic dislocation of the hip in children. *J Bone Joint Surg Br* 1981;63(2):194-7.
6. Ráliš Z, McKibbin B. Changes in shape of the human hip joint during its development and their relation to its stability. *J Bone Joint Surg Br* 1973;55(4):780-5.
7. Brandão GF, Américo LR, Soares CB, Faria RG, Teixeira LE. Traumatic posterior dislocation of the hip in children: Report on five cases. *Revista Brasileira de Ortopedia (English Edition)* 2010;45(2):196-9
8. Kennon JC, Bohsali KI, Ogden JA, Ogden III J, Ganey TM. Adolescent hip dislocation combined with proximal femoral physeal fractures and epiphysiolysis. *J PediatrOrthop* 2016;36(3):253-61.
9. Mehلمان CT, Hubbard GW, Crawford AH, Roy DR, Wall EJ. Traumatic Hip Dislocation in Children: Long-

- Term Followup of 42 Patients. *ClinOrthopRelat Res.* (1976-2007). 2000;376:68-79.
10. Rieger H, Pennig D, Klein W, Grünert J. Traumatic dislocation of the hip in young children. *Arch Orthop Trauma Surg.* 1991;110(2):114-7.
 11. Banks SW. Aseptic Necrosis of the Femoral Head Following Traumatic Dislocation of the Hip: A Report of Nine Cases. *JBJS.* 1941;23(4):753-81.
 12. Herrera-Soto JA, Price CT. Traumatic hip dislocations in children and adolescents: pitfalls and complications. *J Am Acad Orthop Surg* 2009;17(1):15-21.
 13. Mehlman CT, Hubbard GW, Crawford AH, Roy DR, Wall EJ. Traumatic hip dislocation in children. Long-term followup of 42 patients. *Clin Orthop Relat Res* 2000;(376):68-79.
 14. Liebenberg F, Dommissie GF. Recurrent post-traumatic dislocation of the hip. *J Bone Joint Surg Br.* 1969;51(4):632-7.
 15. Barquet A. Recurrent traumatic dislocation of the hip in childhood. *J Trauma* 1980;20(11):1003-6.