BILATERAL ASYMMETRIC TRAUMATIC HIP DISLOCATION IN AN ADULT - A CASE REPORT

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ABSTRACT: Bilateral asymmetric traumatic hip dislocation without an associated fracture of the pelvis or femur occurring in an young adult with no previous history of hip abnormality or ligamentous laxity is a rarity. There were only 58 such cases reported in literature till date. Here is a 28 year old male patient presented to our Department of Orthopaedics and Traumatology, Rangaraya Medical College, Kakinada, Andhrapradesh, India with a history of fall from mango tree with bilateral asymmetric traumatic hip dislocation. The mode if injury is fall from a height. The dislocations were promptly reduced by closed method. Serial follow-up revealed no complications.

KEYWORDS: Asymmetric Hip Dislocation C26.289.384, Femur Head Necrosis C05.116.852.175, Emergencies C23.550.291.781

HOW TO CITE THIS ARTICLE: B. S. S. S. Venkateswarlu, C. J. Mani Kumar, K. Vamshi Krishna, G. Sandhya Rani. "Bilateral Asymmetric Traumatic Hip Dislocation in An Adult - A Case Report." Journal of Evidence based Medicine and Healthcare; Volume 2, Issue 49, November 19, 2015; Page: 8535-8538, DOI: 10.18410/jebmh/2015/1173

INTRODUCTION: Bilateral hip dislocation occurring as a result of trauma is itself a rare entity. Simultaneous anterior and posterior traumatic dislocations of both hips is even more unusual. Traumatic hip dislocation is a true orthopedic emergency, and traumatic hip dislocations currently represent 5% of all dislocations.[1] Hip joint being an inherently stable joint, requires a significant amount of force to dislocate. Therefore, dislocations of the hip joint can only be caused by high-energy trauma. The present case depicted a low energy injury with a different mechanism of injury.

CASE REPORT: A 28 year old male agricultural labourer by occupation, fell from a mango tree. He was brought to our emergency department after 12 hours with the complaints of pain and inability to move both the limbs since the time of fall. On general examination, his vitals were stable and no other systems were involved in the trauma. On local examination of the patient the right limb was in flexion, abduction, external rotation; and left limb was in flexion, adduction and internal rotation. Fullness in scarpa's triangle noted on right side and contusion over the left thigh and over the trochanter noted. Distal neurovascular status of both the limbs was normal. Anteroposterior pelvis radiograph was performed which revealed right anterior subobturator type of hip dislocation (Epstein Type II) and left posterior hip dislocation (Thompson Epstein Type I) associated with femoral head fracture and displaced (Pipkin type-1) (Fig. 1).

Submission 06-11-2015, Peer Review 07-11-2015,
Acceptance 10-11-2015, Published 19-11-2015.
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DOI: 10.18410/jebmh/2015/1173

Closed manipulation and reduction was performed under general anaesthesia in emergency OT. Left posterior hip dislocation was reduced by Allis maneuver. Right anterior subobturator type dislocation was reduced by modified Allis maneuver as described by Walker. Bilateral upper tibial skeletal traction was applied using stienmann pins with 6kgs weight each and a post reduction radiograph was taken which revealed concentric reduction of both hip joints (Fig. 2). Patient was maintained in traction for 3weeks. Post manipulation, CT Scan, MRI were done immediately (Fig. 3). He was advised to do static quadriceps exercises on bed. After three weeks, patient was allowed to sit up in bed, and gentle non-weightbearing mobilization of hip and knee joints were initiated. Weightbearing was started at the end of six weeks with the help of a walker. Followup X-ray, CT, MRI at 18 weeks revealed no changes of avascular necrosis, no arthritic changes, no heterotopic ossification (Fig. 4). No post traumatic stiffness noted. Good range of movement of both hips and a Harris Hip Score of -96 was found at 18 weeks followup for both hips. The patient is performing normal activities of daily living without any pain. The clinical progress of the patient throughout has been represented through photographs. (Fig. 6 to 11).

DISCUSSION: Bilateral simultaneous dislocations of hip joints are uncommon. Agarwal et al., reported it to be 1.25% of the total reported hip dislocations.[2] Bilateral asymmetric dislocations of hip are even rarer and only limited number of cases have been reported. Because of the violent trauma involved in these injuries, these dislocations are often associated with fractures of the acetabulum, head of femur, neck of femur, trochanter, and even shaft of femur.[3,4,5] Examining the various modes of injury described in published studies for bilateral asymmetric dislocations of the hip joints, they ranged from

pedestrian being hit by a car to head on collision of vehicles and motorcycle crash.[2,6,7] The single common mechanism involved in most of these cases was a sudden deceleration injury. Bilateral asymmetrical hip dislocation results from a peculiar "WIND SWEPT" position of the legs at the time of impact.[6] In the present case the mechanism seems to be of low energy, i.e., fall from a tree suggesting that the patient might have suffered a double hit over each of the hips in a tumbling fall from a tree. Upadhyay et al., suggested that patients with reduced femoral anteversion, as measured by ultrasonography represent an extreme of the population who were more likely to suffer from a simple posterior hip dislocation rather than a fracture dislocation, as the reduced anteversion acts like medial rotation to make the hip more susceptible to the dislocating force.[8] Several studies have shown that the risk of osteonecrosis occurring after a hip dislocation is related to the length of time the hip remains dislocated. The risk rises after a delay of six hours or after repeated attempts of closed reduction.[9,10] Avascular necrosis is reported to occur in 4% of hip reduced within 6 hours and 58% of those that remained dislocated for more than 6 hours.[9,11] Agarwal et al. have recommended a routine magnetic resonance imaging (MRI) scan at around three months following injury for early detection of AVN.[2] Incidence of post-traumatic arthritis has been stated to be approximately 24% in patients of hip dislocations.[3,4] In posterior hip dislocation, sciatic nerve injury can occur at a rate of 7-19%.[12,13] Post reduction CT scan is recommended to determine intra-articular free fragments, reduction and associated femoral head and acetabular fractures; however, the most efficient and harmless method for diagnosis and follow-up of avascular necrosis is MRI.[14] An important prognostic factor is the direction or type of dislocation. The prognosis for central dislocations is the worst. It is best for anterior dislocations. Associated acetabular and femoral head fractures also worsen the prognosis.[15,16]

CONCLUSION: In conclusion, traumatic hip dislocation is a true orthopedic emergency. Bilateral asymmetric traumatic hip dislocation is rare and needs immediate intervention. Prompt reduction of hip dislocations in the Emergency Department can reduce the incidence of avascular necrosis of the femoral head. Proper diagnosis, early closed or open reduction, evaluation of the reduction with CT and assessment of soft tissue damage (capsule, muscles and ligaments), accumulation of fluid and blood with MRI will help in anticipating complications and in planning the management to have a better outcome.

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Fig. 1: Pre reduction x ray

Fig. 2: Post reduction x ray

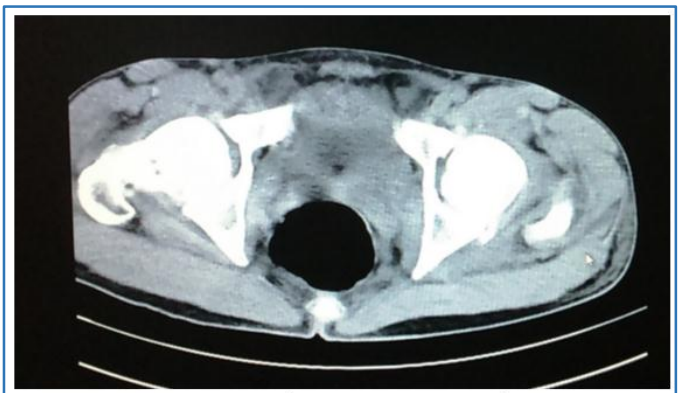

Fig. 3: Post reduction ct scan axial cut showing bilateral congruous reduction

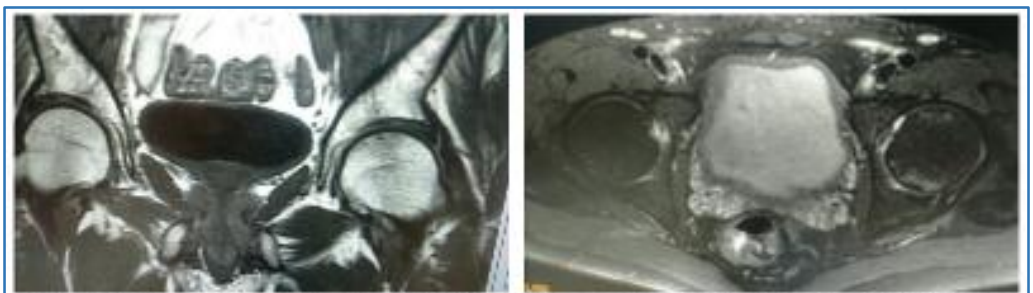

Fig. 4: Immediate post reduction MRI images sagital and axial cuts STIR images

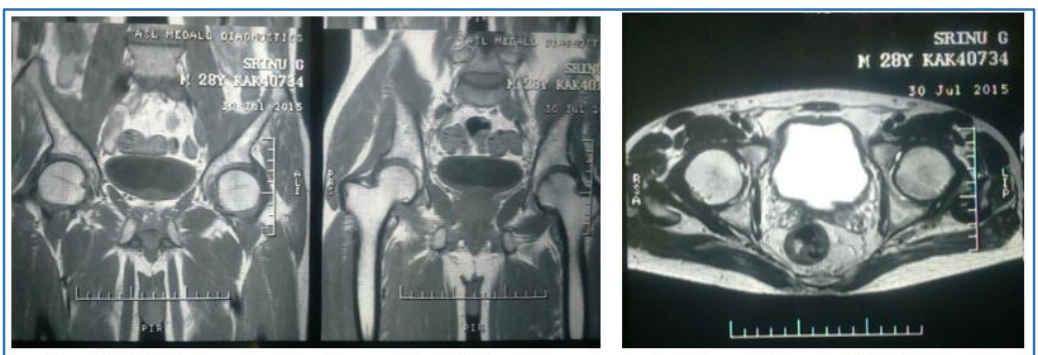

Fig. 5: MRI images at the end of 18 weeks sagital and axial cuts STIR images

Fig. 6: Pre reduction clinical photograph

Fig. 7: Post reduction photograph on skeletal traction with isometric quadriceps exercises

Fig. 8: Squatting

Fig. 9: Sitting cross legged

Fig. 10: Standing

Fig. 11: Active Straight leg raising