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Case Report

Neglected simultaneous bilateral asymmetric traumatic hip dislocation in a young male managed by closed reduction manoeuvres in a resource-limited setting: A case report

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ABSTRACT

Background: Asymmetric bilateral hip dislocations are rare, representing approximately 0.01 %–0.02 % of all joint dislocations. The treatment of neglected hip dislocations is difficult or impossible by closed reduction manoeuvres. This is a report of an unusual clinical entity of neglected simultaneous bilateral asymmetric traumatic hip dislocations in a young male, managed by closed reduction manoeuvres.

Case presentation: This is the case of a 29-years-old male who presented with neglected simultaneous bilateral asymmetric traumatic hip dislocations 5 weeks post injury. His condition was managed by closed reduction manoeuvres due to financial constraints. Under spinal anaesthesia, the left hip was successfully reduced. Due to an associated posterior acetabular wall fracture, the presence of osteo-chondral fragments and labral lesions, adequate reduction of the right hip was not achieved. The functional Harris Hip Score (HHS) of the left hip improved on every subsequent follow-up visits at the clinic from 70 at day 45 to 86 at day 90. The HHS of the right hip was poor at day 45 but however increased to 90 after total hip replacement was done.

Conclusions: This is an unusual case of neglected simultaneous bilateral asymmetric traumatic hip dislocations in a young male, managed by closed reduction manoeuvres. Closed reduction of such injury is difficult and seldom successful with uncertain long term functional outcome.

Background

Bilateral hip dislocations are rare injuries constituting 1.25 % of all hip dislocations [1]. Asymmetric bilateral hip dislocations are much rarer and result from complex high energy injury mechanisms [2]. Although neglected traumatic dislocations of joints are generally rare, they are not uncommon in developing countries [3]. We hereby report a rare and unusual clinical entity of neglected simultaneous bilateral asymmetric traumatic hip dislocation in a young male, and present the difficulty faced in the management of this case in a limited resource setting.

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Case presentation

This is the case of a 29-year-old male who was a victim of a road traffic crash 5 weeks before presentation at our orthopaedic clinic. He was a pillion rider on board a commercial motorcycle that had a head-on collision with a fast-moving vehicle and was projected. Instantaneously, he had pain, inability to bear weight on both lower limbs and deformities on both hips. He was transported to a nearby primary healthcare centre where bilateral hip dislocation was diagnosed. Closed reduction of both hips was attempted but was unsuccessful. He decided against medical advice to pursue treatment by traditional bone setters.

He consulted 5 weeks after the accident at our orthopaedic clinic presenting with pain, inability to bear weight and deformities on both hips. On physical examination, the left hip was flexed, abducted, and externally rotated. The right hip was flexed, adducted, and internally rotated as shown in Fig. 1. There was minimal muscle atrophy with no neurovascular abnormalities in both lower limbs.

Radiographs of the pelvis revealed bilateral asymmetric hip dislocations (Fig. 2A). Computed tomography (CT) scans showed a left inferior anterior hip dislocation (Obturator type; Epstein IIA) with the femoral head fixed at the inferior and anterior side of the obturator foramen (Fig. 2B). There were no acetabular or femoral head fractures in the left hip. The CT scans also showed a posterior dislocation of the right hip with a posterior wall acetabular fracture (Thompson-Epstein III) and the presence of free osteochondral fragments in the acetabular cavity (Fig. 2B).

Due to financial constraints to afford total hip arthroplasty (THA) as a preferred treatment option, we opted with his consent to attempt closed reduction manoeuvres under anaesthesia in the operating room. A combination of spinal anaesthesia, with maximum muscular relaxation and mild sedation, was carried out by the anesthesiology team. With the patient lying supine, we carried out a combination of gentle progressive soft manoeuvres described by Allis to reduce both hips successively. The reduction was checked using a pelvic radiograph and CT scan which both confirmed a concentric reduction of the left hip and an unsuccessful reduction of the right hip although the right femoral head came to a sub-luxed position (Fig. 3A & B).

Transcondylar traction was done on the right lower limb and maintained for 45 days, and he was discharged on day 50. A control X-ray still showed a subluxed right hip. At this time, the Harris Hip Score (HHS) was 70 in the left hip and 46 in the right hip. At this time, the patient had no choice but consented to only a right THA. An uncemented right THA was done on day 70, without any operative incidences and the patient was discharged 7 days later. Rehabilitation commenced on the functional HHS of both hips improved on every subsequent follow-up visit at the clinic from 70 on day 45 to 86 on day 90 for the left hip, and from 46 on day 45 to 90 on day 90 for the right hip.

Discussion and conclusions

To the best of our knowledge, this is a rare and an unusual case of neglected bilateral asymmetric hip dislocations in a young man seen beyond 4 weeks post injury. Due to lack of financial resources to pay for a better treatment option (open reduction and/or THA), we opted for closed reduction manoeuvres under spinal anaesthesia with maximum soft tissue relaxation [3]. Interestingly, the left hip was successfully reduced but the right hip was brought only to a sub-luxed non-congruent position due to the presence of a posterior wall acetabular fracture and osteo-chondral intra articular.

Historically, the first case of simultaneous bilateral asymmetric traumatic hip dislocations was reported in 1845 in a 30 year-old male following a road traffic crash [4]. This injury occurs mostly in young adults and results from violent injury mechanisms during road traffic crash, direct impact from collapsing objects like walls, fall from height, pedestrian struck by motor vehicle and airplane crash [5].

Neglected dislocation of the hip was defined by Oni as dislocation lasting for more than 1 week after injury [6]. This definition is based on the fact that patients seen within 1 week of injury can be successfully treated by manipulative reduction just as in fresh cases. Beyond this time, the acetabulum becomes filled with fibrous tissue, and capsular contractures occur across the base of the acetabulum. Loose intra articular osteochondral fragments and labral tears become adherent to the acetabulum, making reduction difficult or impossible by closed manoeuvres [4–6]. Neglected joint dislocations are more common in developing countries because patients

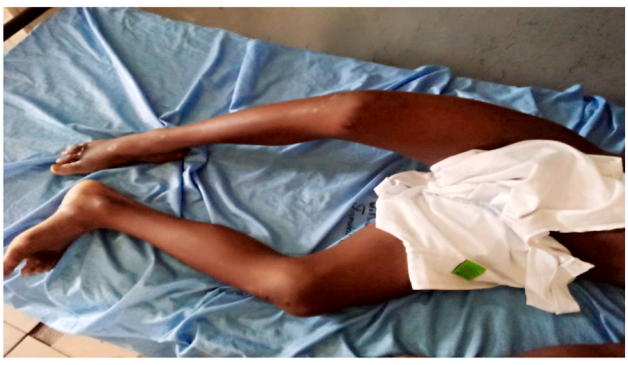

Fig. 1. Clinical picture of the patient showing i. Left hip flexion, abduction and external rotation. ii. Right hip flexion, adduction and internal rotation.

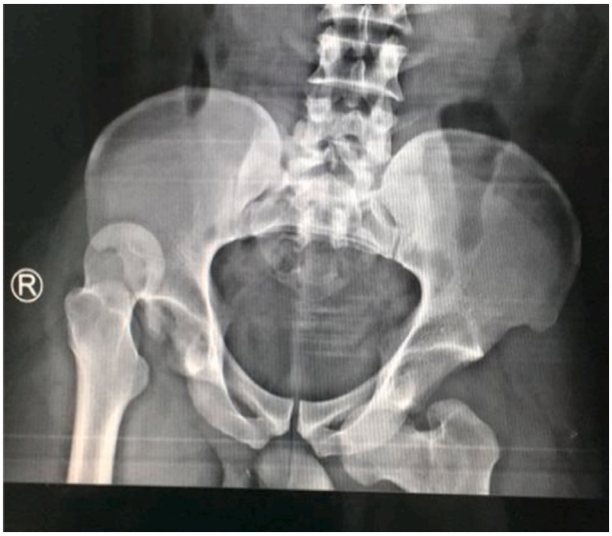

Fig. 2. A: X-rays showing asymmetric hip dislocation; right posterior superior, and left anterior inferior.
B: CT scans showing Obturator type Epstein IIA anterior left hip dislocation and Thompson-Epstein III posterior superior right hip dislocation.

usually attend hospital many days after trauma, and have a penchant for seeking unorthodox medical treatment for musculoskeletal injuries [3].

Neglected hip dislocations have been generally managed by various treatment options including continuous traction, open reduction and hip fixations, osteotomy, hip arthrodesis, and total hip arthroplasties [5,6]. Continuous traction and closed reduction manoeuvres have seldom been successful in treating old hip dislocations due to the difficulty of reduction, which is usually proportional to the delay in securing proper treatment, hence these treatment methods are less applied than open reduction and arthroplasty. The poor outcome score of the right hip of our patient before THA is in accordance with other cases of neglected unilateral hip dislocations that were treated non-operatively [7]. The neglect time is considered as the main prognostic factor and determinant of outcome after closed reduction. Other significant factors include concominant acetabular fractures, lesions of the labrum and the presence of osteo-chondral intra articular fragments preventing reduction [7]. These concomittant injuries were present in the right hip of our patient.

Although early diagnosis and timely reduction are both essential in the appropriate management of patients with traumatic hip dislocations to prevent possible complications, closed reduction of chronic unreduced hip dislocations is associated with the development of avascular necrosis and arthritis [6–10]. Long term follow-up is therefore important for identifying these complications especially in the left hip of this unusual case of neglected bilateral asymmetric traumatic hip dislocations. At the time of this write-up, the latest visit of our patient was 3 months during which he reported mild left hip pain that did not affect function The clinical aspects of the right hip were unremarkable. Nevertheless, his visits at the clinic have been made regular in order to rule out chronic complications such as avascular necrosis and arthritis.

This is a rare and an unusual case of neglected simultaneous bilateral asymmetric traumatic hip dislocations described in a 29-year-old male Cameroonian seen 5 weeks post injury. His left hip was successfully reduced while the right hip couldn't get to congruency, and therfore required a THA. Closed Reduction of neglected simultaneous bilateral asymmetric traumatic dislocations of the hips is difficult with uncertain long term functional outcome. Open reduction and/or THA are the mainstay of treatment.

Ethics approval and consent to participate

Administrative approval was obtained from the Director of the Limbe Regional Hospital, informed consent was obtained from the patient.

Consent for publication

Written informed consent was obtained from the patient for publication of this case and accompanying images. A copy of the written consent is available for review on request.

Availability of data and materials

Not applicable.

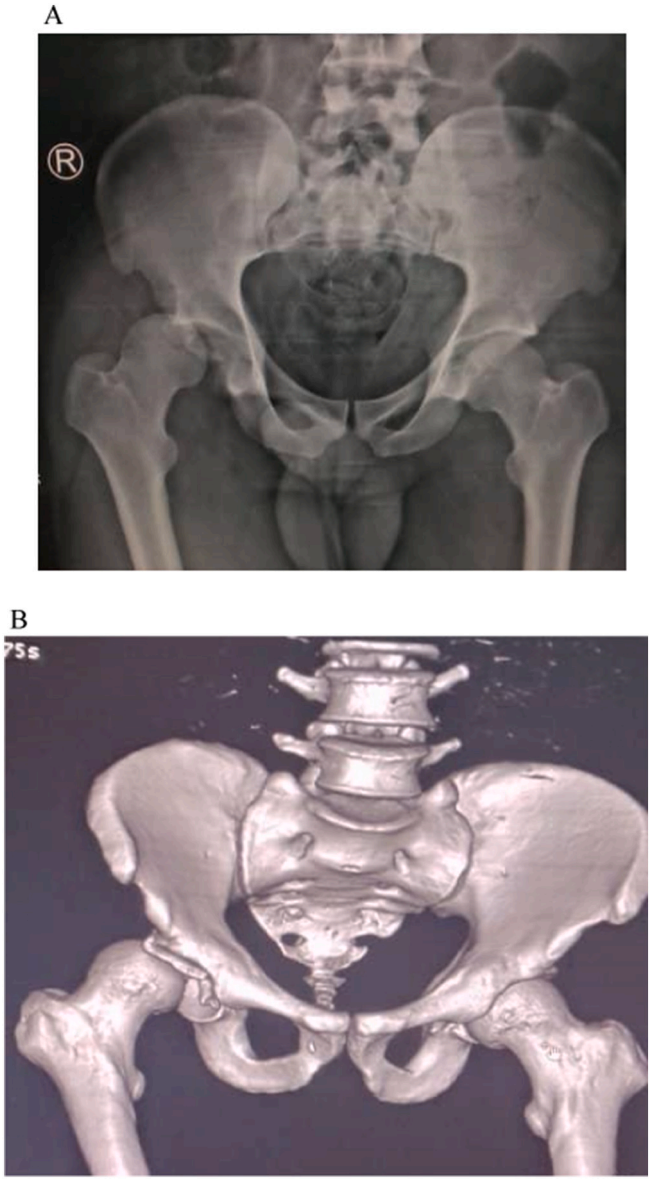

Fig. 3. A: Post reduction X-ray showing a reduced concentric left hip, and a nonreduced right hip.
B: Post reduction CT scan showing a reduced left hip, and a subluxed right hip.

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Not applicable.

CRediT authorship contribution statement

TCN, ZN, TMJ and BTH carried out the procedure in the operating room under the supervision of MMD, PF and EPW. TCN, NMN, and TMJ contributed in writing the manuscript. All authors read and approved the final manuscript.

Declaration of competing interest

The authors declare that they have no competing interests.

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