


CASE REPORT

A bilateral asymmetrical hip dislocation: A rare case report

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Abstract

A 17-year-old male was ejected from the motorcycle and brought to the Emergency Department with bilateral hip dislocation and absence of pelvic or femur fractures or sciatic nerve injury. Closed reduction and postreduction examination were performed with a bilateral stable full range of motion in all directions.

KEYWORDS

bilateral, dislocation, hip, trauma

1 | INTRODUCTION

The hip joint is the most stable joint in the body. Dislocation of the hip joint occurs following high-energy trauma. 85%–90% of these dislocations are posterior. Anterior hip dislocation is rare (10%–15% of hip dislocations). Bilateral hip dislocation is very rare, accounting for only 1% of all hip dislocations, and asymmetry of dislocation is even rarer, accounting for 0.01%–0.02% of all joint dislocations.^{1,2} The first published case report of bilateral hip dislocation described a right posterior superior dislocation and a left anterior-inferior dislocation after an accident of a vehicle loaded with furniture.³ Precise trauma evaluation is essential to rule out the associated injuries that may lead to chronic morbidities. An early reduction

must be applied early to avoid avascular necrosis.⁴ In this article, we report a case of 17-year-old male with bilateral hip dislocation with no associated injuries. This rare case report will add to the limited data about bilateral hip dislocation through discussing the mechanism, diagnosis, management, and follow-up.

2 | CASE REPORT

A 17-year-old male was the third person in the back of the motorcycle while the driver was showing off by his motorcycle, in which he was ejected outside the road. He arrived at our Emergency Department 4 h after the trauma, on arrival, the patient was conscious of Glasgow Coma Scale

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(GCS) 15/15, hemodynamically stable, C/O: severe pelvic pain and inability to stand or even sit, we follow Advanced Trauma Life Support (ATLS) protocol as the first step in management. Also, we noticed his right leg was internally rotated, adducted, and flexed, while the left leg was held in slight flexion, external rotation, and abduction. A pelvic radiograph performed in the emergency room revealed bilateral hip dislocation with the femoral head displaced anterosuperior on the left side and posteriorly on the right side, and there was no associated fracture of the pelvis, acetabulum, or femur (Figure 1). The lack of prerelocation computerized tomography (CT) scan is a shortcoming of our report. Although prerelocation CT is preeminent in the treatment protocol of such high-energy injury, not all patients can afford it due to the limited financial capacity. Both hips were reduced within 40 min of admission (about 5 h from the trauma) by closed manipulation under general anesthesia and muscle relaxants. We used the Allis maneuver in a supine position to reduce the right hip, and the left hip was reduced by reverse Bigelow's maneuver in lateral decubitus position. On table examination, both hips were stable in all directions. A radiograph after reduction confirmed concentric reduction in both hips (Figure 2). A CT scan excludes any intra-articular fragments or associated fractures (Figure 3). The patient was admitted for 1-day postreduction without traction, discharged on the second day with instructions of non-weight bearing for 2 weeks and physiotherapy as local protocol. At 2-week follow-up, the patient was well and pain-free and had no mechanical symptoms, with full range of movement (ROM) in all directions and he started a partial weight-bearing using a walking frame. At 6-week follow-up, the patient was well, with full ROM in all directions and started a full weight-bearing. In addition to the bilateral asymmetrical injury, there was an absence of

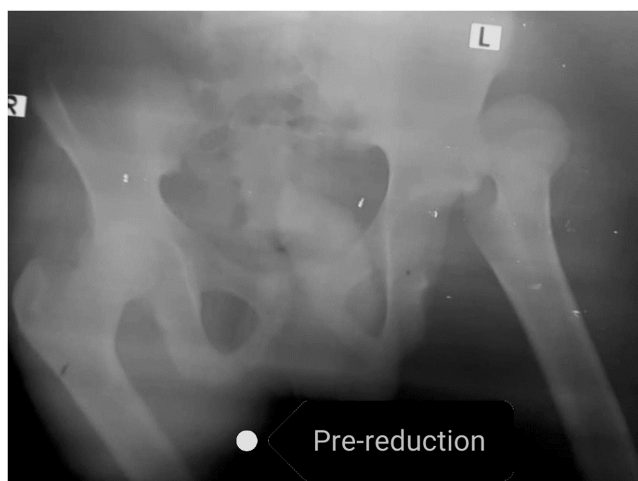


FIGURE 1 Pelvic X-RAY revealed bilateral hip dislocation, without associated fracture of the pelvis, acetabulum, or femur.

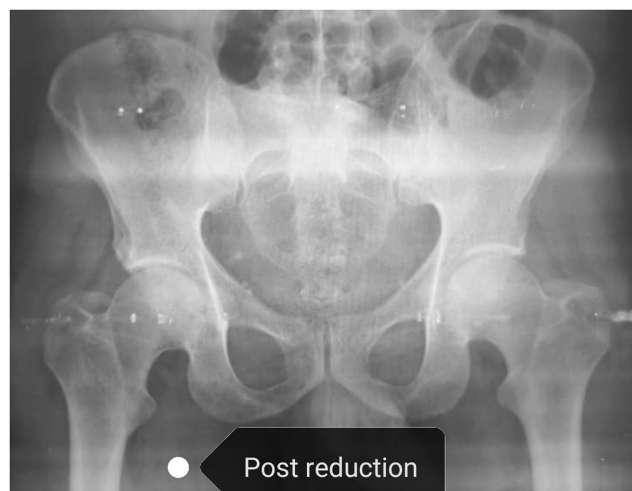


FIGURE 2 Pelvic radiograph after reduction confirmed concentric reduction in both hips.

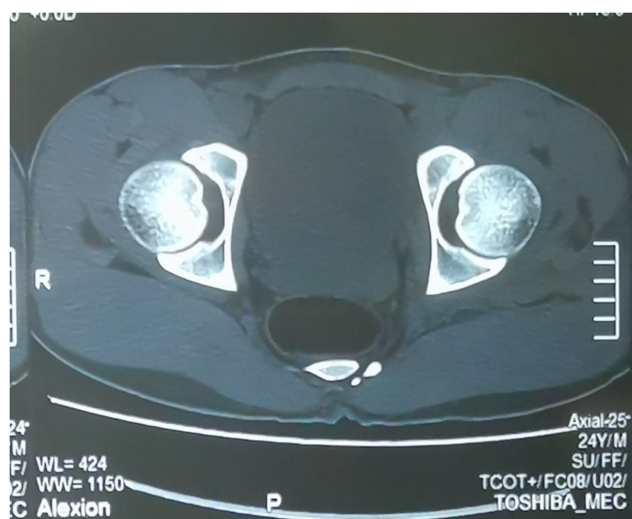


FIGURE 3 Pelvic CT scan excludes any intra-articular fragments or associated fracture.

associated pelvic or femur fracture or sciatic nerve injury in such a high-energy injury.

3 | DISCUSSION

Bilateral hip dislocation is rare. Furthermore, the asymmetry of the dislocation is even rarer, that is because of the stability of the hip joint which comes from the intrinsic factors such as the anteverted femur and acetabulum, depth of the acetabulum cavity augmented by the labrum, extrinsic factors like the thick capsule and a strong group of muscles and ligaments around the joint. That makes the asymmetric dislocation a high-energy trauma that needs a high level of medical suspicion of other injuries else than the dislocation itself.⁵⁻⁹ Since the hip joint

is the most stable joint in the body, the dislocation needs high-energy force. ATLS protocol should be done after such trauma. Associated injuries that are present in up to 95% of patients including proximal femoral fractures, pelvis, acetabular fractures and fractures of the ipsilateral lower limb are always to be looked for carefully.¹⁰⁻¹² In contrast to our case which has no associated fracture, head, chest, and abdominal injuries are associated with hip dislocations, which is inconsistent with our patient who reported no associated injury.¹¹⁻¹³ Similar to our study Alshammari A et al. reported a bilateral asymmetrical hip dislocation with no concomitant fractures.¹⁴ Unlike our case, many cases reported associated acetabulum fractures.^{15,16} Clinical examination is the most essential technique to diagnose hip dislocation. Plain X-ray pelvic is enough to confirm the dislocation, and CT scan postreduction is mandatory to confirm the accepted reduction, concentric without a loose body inside the joint and to exclude any pelvic or femur fracture as done in our case.¹⁷ Hip dislocation classification in our case is as follows: right posterior hip dislocation radiographic classified according to Thompson-Epstein as type 1, simple dislocation with at most insignificant posterior wall fracture. Left anterior hip dislocation radiographic classified according to Epstein as 1A: superior dislocations with no associated fracture. Dislocation reduction must be applied expediently to avoid complications including avascular necrosis.⁴ That explains the dependence on clinical examination in the presence of bad quality plain radiograph as in our case who was brought to us after 4 h from the trauma in the absence of a CT scan machine in the Emergency Department. The reduction should be done with a properly closed maneuver to prevent the iatrogenic acetabulum or pelvic fractures and to prevent the risk of open reduction complications. Open reduction is chosen in case of associated fracture in pelvic or femur, if the dislocation is irreducible or if the reduction is not concentric.^{18,19} After closed reduction, weight-bearing should be avoided for only 2 weeks starting mobilization as soon as the pain permits, which is consistent with our protocol.¹⁹

4 | CONCLUSION

Bilateral hip dislocation injury may affect the functional prognosis if the reduction was not performed in the first 6 h after the trauma. Clinical management and radiological planning must be performed before the reduction. Associated lesions must be systematically explored and well treated following ATLS protocol. Interprofessional cooperation between the surgeon (who decides the

amount of mechanical load needed for pelvic ring fixation), and the physical therapy staff is needed for efficient rehabilitation.

AUTHOR CONTRIBUTIONS

Adnan Ayman Mohammed Adnan Alnaser and Hozifa Mohammed Ali Abd-Elmaged were involved in supervising, writing up, editing and reviewing contents and images for the report. Fatima Elbasri Abuelgasim Mohammed and Reyad Abd Albagi Ahmed Abd ALLAH were involved in writing up and editing of images for the report. Mohamed Abdalla Mohamed Ahmed Hussien contributed to report writing. All authors have approved the manuscript and agreed with its submission to the journal.

ACKNOWLEDGMENT

None.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy restrictions.

ETHICAL APPROVAL

IRB approval is not required for case reports.

CONSENT

The patient and his family provided written consent for the publication of the case.

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How to cite this article: Alnaser AAM, Abd-Elmaged HMA, Mohammed FEA, Abd ALLAH RAA, Mohamed Ahmed Hussien MA. A bilateral asymmetrical hip dislocation: A rare case report. *Clin Case Rep.* 2022;10:e06439. doi: [10.1002/ccr3.6439](https://doi.org/10.1002/ccr3.6439)