

## Case Report

## Bilateral asymmetrical hip dislocations with acetabulum fractures; a case report

Badaruddin Sahito<sup>\*</sup>, Awais Abro, Vijay Kumar, Bakht Hussain, Khalil Ahmed, Azam Kamboh, Abdul Qadir, Maratib Ali

Department of Orthopaedic Surgery, Dow University of Health Sciences, Ruth K M Pfau Civil Hospital Karachi, Pakistan

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## ABSTRACT

Bilateral hip dislocation is a rare injury and asymmetrical hip dislocations are even very rare entities. We are reporting two cases of bilateral asymmetrical hip dislocations with associated acetabulum fractures. Mechanism of injury in first case was fall from height and in other case road traffic accident. Associated injuries were midshaft femur fracture and sciatic nerve (Peroneal part). Anterior hip dislocation in both cases is reduced closely but posterior hip dislocation in both cases relocated openly due to ipsilateral femur fracture in first case and unstable hip in second case. Acetabulum fractures fixed with reconstruction plate. Postoperative recovery of patient was uneventful except sciatic nerve injury (Peroneal part) lead to foot drop that is supported with ankle foot arthrosis.

## Introduction

Hip dislocations are high velocity injuries, with increase morbidity and mortality [1,2]. 90% of hip dislocations are associated with road traffic accident and remaining reported due to machinery and construction injuries and only 1% are bilateral hip dislocations and 0.01–0.02% of all joint dislocations (Table 1).

It is absolutely difficult to narrate the exact mechanism in these injuries [2]. Most of these hip dislocations are associated with other injuries, those should be diagnosed and treated earlier to prevent further morbidity. Earlier the hip dislocation reduced better the functional outcome and decrease risk of avascular necrosis and arthritis.

We are presenting two cases of asymmetrical hip dislocations with acetabulum fracture and associated femur fracture and sciatic nerve injury.

## Case report 1

A 30 year male, factory worker at steel mill presented at emergency department trauma center civil hospital Karachi within half an hour with history of trauma as result of heavy fall of steel rods over both the thigh while lifting these rods from 12 feet height to down. He presented with pain and deformity of both legs. Immediately Advance trauma life support protocol followed, he was resuscitated initially and stabilized. On examination, both the lower limbs abducted, flexed and externally rotated. Distal neurovascular was intact. Radiograph full pelvis antero-posterior view showed right side anterior hip dislocation obturator type 2A, and left side posterior hip

<sup>\*</sup> Corresponding author.

E-mail addresses: [sahito.badar@hotmail.com](mailto:sahito.badar@hotmail.com), [badaruddin.sahito@duhs.edu.pk](mailto:badaruddin.sahito@duhs.edu.pk) (B. Sahito).

**Table 1**  
Literature review of asymmetrical bilateral hip dislocation.

	Author & year	Diagnosis	Associated injuries	Treatment	AVN	Other
1.	Erdem Degirmenci et al. [1]; Oct 2018	Bilateral asymmetrical hip dislocation	Femoral head fracture Pipkin I(left)	Close reduction	Yes Left side at 2 yrs	Total hip replacement
2.	Stefano G et al. [2]; 2019	Asymmetrical hip dislocation Anterior (right) Post (left)	Posterior wall acetabulum fracture (left) Brain injury	Right close reduced Left unreduced	Yes Left side at 6 months	Left side posterior wall fixed with recon plate
3.	Abdullah et al. [3]; 2017	Right posterior Left anterior intrapelvic obturator type	Left superior & inferior pubic rami fracture	Both reduced close method	Lost follow-up	Left unstable so skeletal traction for 3 weeks
4.	Dudkiewicz et al. [4]; 2000	Right posterior Left anterior	No associated injury	Right reduced close Left open reduces through anterior approach	24 month follow up No Avascular necrosis	–
5.	Martinez A A, et al. [5]; 2000	Right Anterior & left posterior	Posterior coloumn Acetabulum Open undisplaced patella fracture	Both reduced closed	No AVN 20 months follow up	Acetabulum fixed at 4 days
6.	Alshamari A et al. [12]; 2018	Right posterior & left anterior	Right Pneumothorax (chest Tube)	Both reduced close	NO AVN Three yrs. follow up	–
7.	Kanojia RK et al. [13]; 2013	Right anterior Left posterior	No associated injury	Both reduced closed	no	–

dislocation with posterior lip fracture Thompson & Epstein type V, along with ipsilateral left midshaft displaced closed transverse femur fracture. After all evaluation patient consented and counselled about the close reduction of both the sides. Under sedation right hip anterior dislocation reduced by flexing the hip to 90 degree and simultaneously one assistant applied lateral traction and pushed back head to acetabulum. Post-reduction femoral and sciatic nerve intact and documented. Left side posterior hip dislocation tried but that was irreducible, so bilateral skin traction applied. CT scan both hip joint with 3-D reconstruction done that showed comminuted posterior lip fracture on left side. Patient prepared for the next list under general anesthesia, placed in lateral decubitus position and closed intramedullary dynamic interlocking nail done first then hip joint relocated and posterior acetabulum approached through posterior Kocher Langenbeck approach. Hip joint opened and intra-articular bone pieces removed. Posterior lip reduced and hold with K-wire and lag screw applied with reconstruction plate. Postoperatively both sides sciatic nerve intact. At two weeks stitches removed and allowed to weight bear on right side. After 6 weeks partial weight bear on left side allowed and full weight bear at three months. More than a year he is continuous follow-up. Yet no signs of avascular necrosis on both sides. Left side femur fracture also united. He has full range of motion at hip and knee joint.

## Case 2

A 32 year male presented to emergency department with history of rickshaw turned turtle. He presented 4 h after trauma at civil hospital trauma center Karachi. He presented with pain at both hip joints. Immediately ATLS protocol followed and after stabilization and evaluation life threatening injury excluded. On both lower limb examination right leg shortened, adducted and internally rotated while left leg shortened abducted and externally rotated. Distal pulses palpable but patient was unable to dorsiflex right foot suggestive of peroneal part of sciatic nerve injury and left side sciatic nerve was intact. Femoral nerve on both sides intact. X-ray full pelvis AP view showed right side posterior hip dislocation with posterior wall fracture and transverse fracture acetabulum and left side anterior hip dislocation obturator type IIA and left side superior and inferior pubic rami fracture. After consent and counselling under sedation bilateral hip joint reduced. Post reduction right side foot drop not improved and documented. Post reduction bilateral leg length becomes equal. Right side hip was unstable with stability test at 90 degree flexion. Skin traction applied on both sides. Post-reduction x-ray showed reduced both hip joints with seagull sign on right side that suggest posterior lip fracture. During shifting patient for CT scan right hip again dislocated and reduced after doing CT scan. CT scan with 3 —D reconstruction done that showed trans-tectal right transverse acetabulum fracture with posterior lip fracture. Patient admitted at ward and after two days right side acetabulum fracture operated through posterior Kocher Langenbeck approach. Posterior lip reduced and fixed with lag screw and reconstruction plate applied for the both posterior lip and transverse fracture. Per-operatively sciatic nerve was contused to sciatic notch. Postoperatively patient recovery was good. On bed mobilization started as tolerated. Stitches removed at two weeks. Allowed to weight bear on left side after three weeks and partial weight bear on right side for six weeks and full weight bear at 3 months. Patient followed regularly for more than 2 years. At last follow up he walk with high stepping gait and using ankle foot arthrosis.

## Discussion

Hip joint dislocations are serious injuries, happen due to road and factory accidents. 2 to 5% are traumatic hip dislocation [1,2] &

bilateral asymmetric hip dislocations are very rare [3]. These are high velocity injuries usually associated with acetabulum fracture, femur head, neck & midshaft fracture. [4–6] In very rare cases Abdominal, chest and head injuries are also reported to be associated with hip joint dislocations [7–9]. That’s why ATLS protocol should be followed to prevent any missed injuries. X-ray full pelvis antero-posterior view & pelvic CT scan with 3 D reconstruction provides fracture configuration and intraarticular bony pieces. [10] Immediate reduction of dislocated hip should be the priority under anesthesia. Delay in reduction of dislocated hip increase chances of avascular necrosis and osteoarthritis. Avascular necrosis also increases from 8% to 15% close reduction to more than 40% with open relocation [11,12]. 10% patients with posterior hip dislocation associated with sciatic nerve injury (Peroneal part) with chance of recovery in between 60 and 70%. [13].

All these case reports reviewed, showed excellent outcome with earlier reduction of hip dislocations. In two case reports patient develop avascular necrosis, both were associated with femur head and posterior wall acetabulum fracture. All these case reports have different patterns of injuries, different associated injuries and less problems. In our cases one patient have posterior wall acetabulum fracture with ipsilateral femur fracture and other patient have posterior wall fracture and transverse fracture acetabulum on right side and left side superior and inferior pubic rami fracture and sciatic nerve injury (Peroneal part) . All these injuries are different from all the cases reported previously in literature.

**Conclusion**

We conclude that asymmetrical bilateral hip dislocation are very rare and associated with other injuries, those should be excluded and dislocated hips should be reduced as earlier as possible to achieve the better functional results and prevent avascular necrosis and osteoarthritis.

**Case 1:**



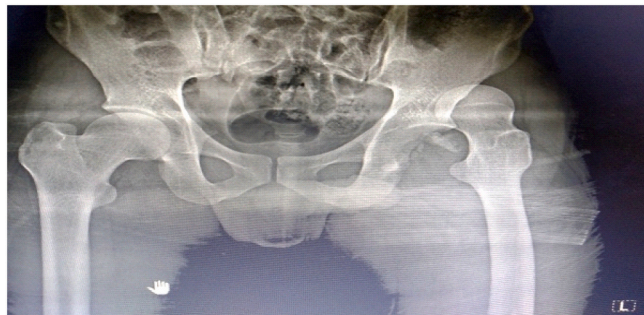
1.1 At Emergency patient position



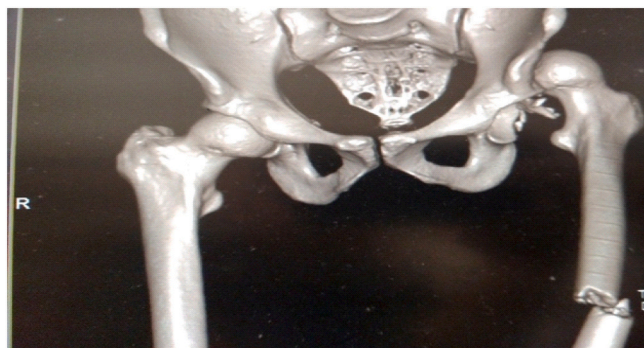
1.2 Right anterior dislocation and left posterior dislocation



1.3 Left side mid shaft femur fracture with posterior hip dislocation and anterior obturator type right hip dislocation



1.4 Post-reduction radiograph, right reduced, left not reduced



1.5 3-D CT scan posterior hip posterior lip and intra-articular bone fragments with posterior dislocation.



1.6 3D CT scan



1.7 Transverse view showing intra-articular large fragment



1.8 After acetabulum fracture union



1.9 After 6 months.

Case 2:



2.1 Patient position at presentation time

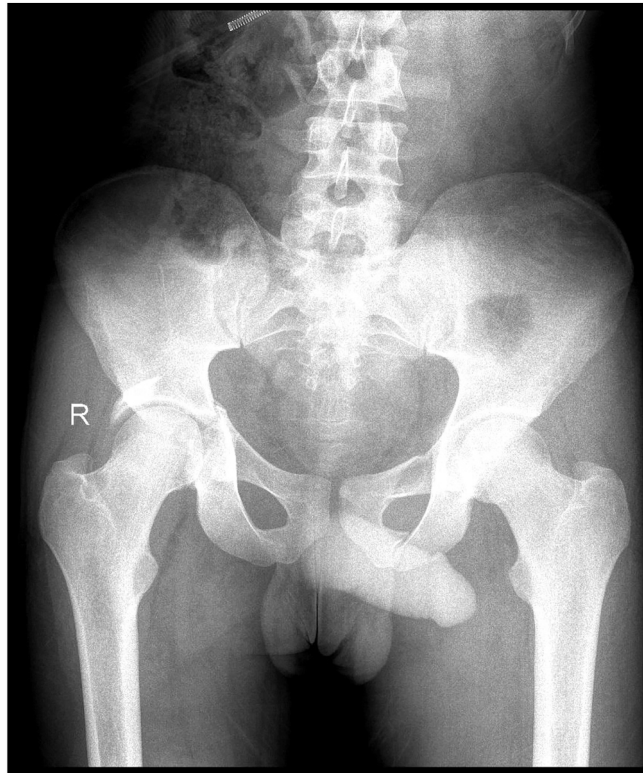


2.2 AP view showing right transverse fracture acetabulum with posterior lip and bilateral asymmetric hip dislocations, right posterior and left anterior.



2.3 After reduction of both hip joints, skin traction applied

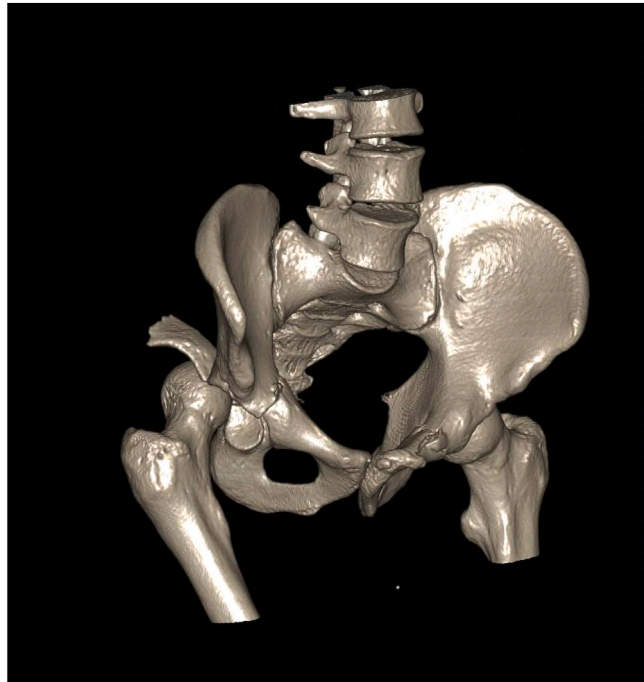




2.4 Post-reduction radiograph showing both hip reduced and seagull sign on right side.



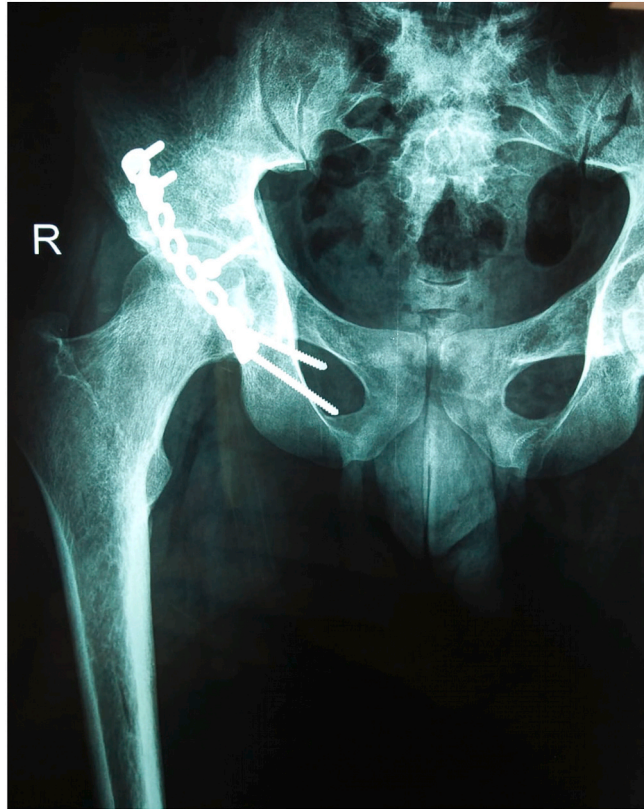
2.5 CT scan with 3D reconstruction showing transverse fracture of right acetabulum and left superior & inferior pubic rami fracture.



2.6 CT with 3D reconstruction showing posterior wall large piece with dislocated hip.



2.7 Postoperative X-ray



2.8 After 4-month fracture united



## 2.9 Lateral view. Fracture united

Consent: Patient consented for picture, video taking & for research publication

## References

- [1] E. Değirmenci, Y.E. Kaya, K.E. Özturan, Asymmetric bilateral hip dislocations and unilateral femoral head fracture: a CASE report, *Trauma Case Reports*. 17 (2018 Oct 1) 48–51.
- [2] G. Stefano, S. Andrea, M. Alberto, M.M. Gian, Asymmetric bilateral hip dislocation in young man: a case report, *Acta Bio Medica: Atenei Parmensis*. 90 (Suppl. 1) (2019) 183.
- [3] A.S. Abdullah, A. Abdelhady, A. Alhammoud, Bilateral asymmetrical hip dislocation with one side obturator intra-pelvic dislocation. Case report, *Int. J. Surg. Case Rep.* 33 (2017 Jan 1) 27–30.
- [4] I. Dudkiewicz, M. Salai, S. Horowitz, A. Chechik, Bilateral asymmetric traumatic dislocation of the hip joints, *J. Trauma* 49 (2) (2000) 336–338.
- [5] A.A. Martínez, F. Gracia, J. Rodrigo, Asymmetrical bilateral traumatic hip dislocation with ipsilateral acetabular fracture, *J. Orthop. Sci.* 5 (3) (2000 May 1) 307–309.
- [6] G. 7. Pipkin, “Treatment of grade IV fracture-dislocation of the hip,”*The Journal of bone and joint surgery. American volume*, vol. 39, no. 5, pp. 1027–1042, 1957.
- [7] C.C. Wu, C.H. Shih, L.H. Chen, Femoral shaft fractures complicated by fracture dislocations of the ipsilateral hip, *J. Trauma* 34 (1) (1993 Jan) 70–75.
- [8] David J.M.D. Hak, James A. Goulet, MD Severity of injuries associated with traumatic hip dislocation as a result of motor vehicle collisions *The Journal of Trauma* 47 (1999) 60–63.
- [9] Yue, James J; Sontich J K; Miron Stefan D. et al. Blood flow Changes to the femoral head after acetabular fracture or dislocation in the acute injury and perioperative periods. *J. of Orthopaedic Trauma*, 2001 15(3): 170–176.
- [10] V. Giordano, P.R. Costa, J.D. Esteves, J. Félix, Júnior, Franklin CE, Amaral NP. Luxações traumáticas do quadril em pacientes esqueléticamente maduros, *Rev. Bras. Ortop.* 38 (8) (2003) 462–472.
- [11] N.O. Onyemaechi, G.O. Eyichukwu, Traumatic hip dislocation at a regional trauma centre in Nigeria, *Niger J Med* 20 (1) (2011) 124–130.
- [12] R.K. Kanojia, S.R. Patra, S. Gupta, Bilateral asymmetric dislocations of hip joints: an unusual mechanism of injury, *Case Reports in Orthopedics*. 2013 (2013).
- [13] A. Alshammari, B. Alanazi, I. Almogbil, S.M. Alfayez, Asymmetric bilateral traumatic hip dislocation: a case report, *Annals of Medicine and Surgery*. 32 (2018 Aug 1) 18–21.