CASE REPORT

Bilateral traumatic hip dislocation with sciatic nerve palsy

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Accepted 20 February 2015

SUMMARY

Bilateral hip dislocation is a rare condition. We report a case of traumatic bilateral hip dislocation and unilateral sciatic nerve palsy in a young woman with known idiopathic scoliosis. With prompt reduction of the dislocated hips, there was reasonable neurological recovery. There was no avascular necrosis of the femoral head or post-traumatic arthritis up to 3-year follow-up. The gender difference in incidence, as well as the predisposition of hip dislocation in scoliosis is discussed. In our case, the decreased femoral anteversion was the culprit.

BACKGROUND

Dislocation of the hip joint represents 2–5% of all traumatic dislocations.¹ Posterior dislocation is the most common type, representing up to 90% of hip dislocations. Bilateral traumatic hip dislocation is a

rare injury; 55 such cases have been reported in the literature. It is more common among males, with the majority of injuries due to motor vehicle accidents. Several cases with associated fractures have been reported.^{2–4} It is an orthopaedic emergency; early detection of this situation and prompt reduction is essential to prevent long-term complications.

CASE PRESENTATION

A 22-year-old woman with idiopathic scoliosis (figure 1) was a seat-belted passenger in a 16-seater van that had a front-end collision with a truck. She was conscious and haemodynamically stable after the accident, but reported chest pain and severe pain in both hips. Physical examination revealed that her hips were flexed, internally rotated and adducted. There was evidence of right sciatic nerve palsy with power loss of the hamstrings, triceps surae, tibialis anterior and posterior, long toe flexors and extensors, and peronei; there was sensation loss over the right foot dorsum and sole. The range of motion of both hips was limited by pain. Her pelvis was stable. There was also tenderness on left chest wall percussion.

Radiographs showed bilateral posterior hip dislocation (figure 2), fractures over the right scapula blade, left clavicle and left second and third ribs with associated left pneumothorax. Closed reduction of both hips was performed under intravenous sedation by Allis method. Both hips were stable up to 90° flexion and 45° internal rotation after the reduction. Concentric reduction of both hips was confirmed radiologically. The patient was put on bilateral femoral skeletal traction for temporary stabilisation.

Figure 1 X-ray of the whole spine showing scoliosis.

Figure 2 X-ray showing bilateral hip posterior dislocation.

To cite: Fan KY, Lui TH. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2014-204031

Figure 3 CT scan showing intra-articular loose fragments of both hips (arrows); (A) transverse view of left hip, (B) transverse view of right hip, (C) coronal view of left hip and (D) coronal view of right hip.

INVESTIGATIONS

CT of both hips showed left femoral head infrafovea fracture, and a small posterior wall fracture of the right acetabulum (figure 3). There were intra-articular loose bony fragments over both hips.

TREATMENT

Arthroscopic removal of loose bodies of both hips was performed 5 days after the injury, after optimisation of respiratory reserve by chest drain insertion and chest physiotherapy for the patient's left pneumothorax. Full weight-bearing walking was subsequently started.

The chest drain was removed after the lungs re-expanded. The patient's scapular and clavicle fractures were treated conservatively with an arm-sling.

OUTCOME AND FOLLOW-UP

Three months after the injury, the patient was able to walk unaided and gained full range of motion of both her hips. There was gradual recovery of the right sciatic nerve function. There was mild impairment of light touch sensation over the L5 and S1 dermatome. There was residual weakness of right ankle dorsiflexion and big toe dorsiflexion of MRC scale grade 4/5, which became static 5 months postinjury. The patient was able to resume normal work and daily life. MRI of both hips showed no avascular necrosis of the femoral heads (figure 4). No post-traumatic hip degeneration was noted at 3-year follow-up.

DISCUSSION

Traumatic bilateral hip dislocation results mostly from high-energy trauma such as a motor vehicle accident. Most of the reported cases are of males. This is possibly due to motor vehicle accidents being more prevalent among young males.

Another factor for this disparity is the intrinsic instability and the difference in anatomy. Upadhyay *et al*⁵ performed ultrasonographic measurements on a series of patients who had sustained

posterior hip dislocation, demonstrating significantly less femoral neck anteversion. Females generally have more femoral anteversion and this maybe another reason that hip dislocation is less prevalent in females.

We report a case a woman with a known history of idiopathic scoliosis. Burwell and colleagues^{6 7} has found that people with scoliosis have decreased femoral anteversion. Local femoral anteversion in females was reported to be 16°. The femoral anteversion in our patient, measured from CT, was 12° over the right side, and 10° over the left. The decrease in femoral anteversion may have predisposed our patient to posterior hip dislocation.

Figure 4 MRI of both hips showing no avascular necrosis.

Hip dislocation is an orthopaedic emergency. Delay in the reduction of a dislocated hip joint increases the incidence of avascular necrosis, which develops in 26% of hip dislocations.¹ Better outcome has been suggested if reduction is carried out within 6 h postinjury. In our case, early recognition of bilateral hip involvement and reduction of the hips within 3 h after injury may have contributed to the prevention of development of avascular necrosis of the femoral head.

Sciatic nerve injury is the most common neurological complication, followed by posterior hip dislocation, with reported prevalence of 10%.⁹ Prompt diagnosis of the neurological condition and immediate reduction of the dislocated hip is the key to maximise neurological recovery. Postreduction CT is useful to confirm congruent reduction of the hips and to detect any associated intra-articular fracture or loose fragment. Early

removal of intra-articular loose fragments in this case prevented the development of post-traumatic hip degeneration.

Contributors KYF prepared the manuscript. THL supervised and proofread the work.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

Learning points

- ▶ Bilateral traumatic hip dislocation is a rare situation.
- ▶ It is an orthopaedic emergency. Early detection and prompt reduction of the hips can prevent development of late complications.
- ▶ Postoperative CT is useful to confirm congruent reduction of the hips and to detect any associated intra-articular fracture or loose fragment.

REFERENCES

- 1 Shukla PC, Cooke SE, Pollack CV Jr, *et al.* Simultaneous asymmetric bilateral traumatic hip dislocation. *Ann Emerg Med* 1993;22:1768–71.
- 2 Bansal VP, Mehta S. Bilateral hip dislocation: one anteriorly, one posteriorly. *J Orthop Trauma* 1991;5:86–8.
- 3 Gittins ME, Serif LW. Bilateral traumatic anterior/posterior dislocations of the hip joints: case report. *J Trauma* 1991;31:1689–92.
- 4 Loupasis G, Morris EW. Asymmetric bilateral traumatic hip dislocation. *Arch Orthop Trauma Surg* 1998;118:179–80.
- 5 Upadhyay SS, Moulton A, Srikrishnamurthy K. Biological factors predisposing to traumatic posterior dislocation of the hip without fractures. *J Bone Joint Surg Br* 1983;65:150–2.
- 6 Burwell RG. Aetiology of idiopathic scoliosis: current concepts. *Pediatr Rehabil* 2003;6:137–70.
- 7 Burwell RG, Aujla RK, Kirby AS, *et al.* Ultrasound femoral anteversion (FAV) and tibial torsion (TT) after school screening for adolescent idiopathic scoliosis (AIS). *Stud Health Technol Inform* 2008;140:225–30.
- 8 James A. Hip dislocations. In: Browner. *Skeletal trauma*. Eds: Browner BD, Levine AM, Jupiter JB, Trafton PG, Krettek C. Vol II, 4th edn. WB Saunders, 2008:1781–817.
- 9 Schwartz SA, Taljanovic MS, Ruth JT, *et al.* Bilateral asymmetric hip dislocation: a case report and literature review. *Emerg Radiol* 2003;10:105–8.

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