

Case Report

Bilateral femoral head fracture associated with bilateral posterior hip dislocation

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Abstract: Femoral head fracture associated with posterior dislocation of the hip joint is a rare and severe injury. The rates of femoral head necrosis were 5% (reduction within 6 hours of fracture) and 50% (reduction greater than 6 hours after fracture). In all cases of hip dislocation requiring urgent reduction, early anatomic reduction and internal fixation of the femoral head fracture are critical steps to attain good results. A 45-year-old woman sustained injury following an accident and was diagnosed with bilateral femoral head fractures with bilateral posterior dislocation of the hip joints. We implemented manipulative restoration for both hip joints 3 hours after the injury, followed by an open diaphysis and internal fixation operation 7 days later, in which both the femoral heads were reset and fixed by three 4.5 mm screws. 6 weeks later, the patient could get out of bed with the support of crutches and was kept at partial weight-bearing for 12 weeks postoperatively. The patient had normal function of both hip joints, and she felt no pain after a 12-year follow-up. Overall, we found that femoral head necrosis did not occur in the patient.

Keywords: Femoral head fracture, posterior hip dislocation

A 45-year-old woman sustained injury in an accident. The X-ray revealed dislocation of both hip joints and fractures of the anteromedial femoral heads (**Figure 1A**). The diagnosis was as follows: (1) Bilateral femoral head fractures with bilateral hip joint posterior dislocations; (2) left tibial plateau fracture; and (3) traumatic shock.

Avoiding the dangers of sciatic nerve compression and femoral head necrosis, we implemented manipulative restoration for both hip joints peremptorily 3 hours after the injury. Despite successful restoration of both joints, the femoral head fragments were not replaced (**Figure 1B**). With the patient in stable condition 7 days later, the open diaphysis and internal fixation operation were carried out for both of the femoral heads. Under direct vision, both the femoral head fragments (approximately size 4 cm × 4 cm left, 4 cm × 3 cm right) were reset and fixed by three 4.5 mm screws. The ends of the screws were inserted into the subchondral bone. Two days after the operation, the patient's legs were held with 2 kg of weight for 4 weeks to maintain skin traction. Moreover, we suggested

that the patient practice flexing and extending both the hip and knee joints intermittently. Six weeks later, the patient could get out of bed with the support of crutches and remained at partial weight-bearing for 12 weeks postoperatively. There were no signs of cystic degeneration or indication of collapse of either femoral head in the X-ray and CT after a follow-up of 12 years. The patient's hip joints had normal function, and she felt no pain (**Figures 2 and 3**). Overall, we found that femoral head necrosis did not occur in the patient.

Femoral head fracture associated with posterior dislocation of the hip joint is a rare and severe injury. The injury had been reported to occur at a frequency of 6~16% by Marchetti [1]. Phillips et al believed that the rates of femoral head necrosis were 5% (reduction within 6 hours of fracture) and 50% (reduction greater than 6 hours after fracture) [2]. In all cases of hip dislocation requiring urgent reduction, early anatomic reduction and internal fixation of the femoral head fracture are critical steps to attain good results.

Bilateral femoral head fracture associated with posterior hip dislocation

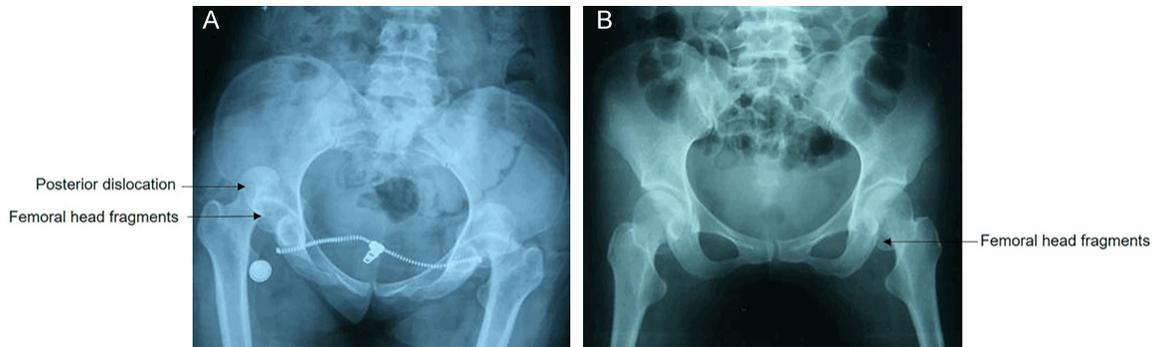


Figure 1. A. X-ray showing posterior dislocation of both hips with associated fractures of femoral heads before operation; B. X-ray showing the positioning of both hips where both the femoral head fragments had not been replaced after operation.

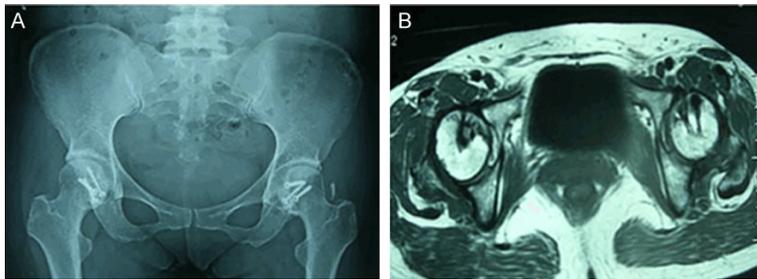


Figure 2. A. X-ray showing 12 years after operation, where both the hip joint spaces and femoral head shapes were normal; B. CT taken 12 years post-operation, where both the hip joint spaces and femoral head shapes were normal.



Figure 3. 12 years after operation, the flexion function of the patient's both hip joint was normal. With consideration to a tibial plateau fracture, the range of flexion of her left knee joint was approximately 95°.

Acknowledgements

Written informed consent was obtained from the patient at the time of her treatment for the use of material in future research.

Disclosure of conflict of interest

None.

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