

Fracture of the femoral head without dislocation

A case report

Fracture of the femoral head without dislocation of the hip sustained in a traffic accident and diagnosed by computed tomography is reported. The authors are not aware of similar reports.

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In 1957, Pipkin reviewed 25 cases of fracture of the femoral head in association with dislocation of the hip and proposed a still current classification. Four to 25 per cent of all posterior dislocations of the hip are associated with a fracture of the femoral head (Maroske et al. 1983). To our knowledge, we report the first case of a fracture of the femoral head occurring without dislocation of the hip.

Case report

A 25-year-old man riding a moped was hit by a car. He

sustained a blunt abdominal injury and fractures of the right acetabulum and left lower leg, combined with ligamentous rupture of the left knee. Plain radiographs of the painful left hip in two planes revealed no pathology (Figure 1).

For better assessment of the *right* acetabular fracture, computed tomography was performed, which showed, to our surprise, a fracture running through the center of the *left* femoral head ending in a cystlike formation (Figure 2). Treatment was functional, and after 6 weeks weight bearing was allowed. A second CT scan, after 3 months, showed the fracture to be healed.

At the time of writing, 2 years after the accident, the patient had no complaints and the mobility of the hip



Figure 1. Acetabular fracture of the right hip. Apparently normal findings in the left hip.

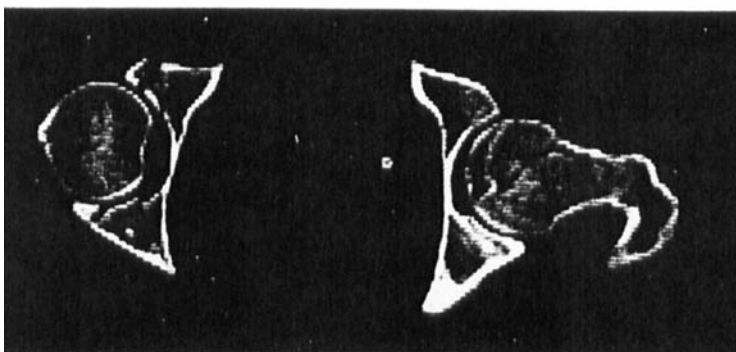


Figure 2. Fracture of the left femoral head running through the center of the caput ending in a minimal bone cyst. In addition, a right-sided acetabular fracture.

joint was free. At the control CT scan there were no signs of necrosis; the cystlike formation was unchanged.

Discussion

The origin of this exceptional injury can be made clear in considering the etiology of a fracture of the femoral head along with a dislocation of the hip. If the hip is in 90° of flexion, an adequate force transmitted through the longitudinal axis of the femur will dislocate the femoral head over the thin posterior rim of the acetabulum, producing a posterior dislocation. If, however, the hip joint is flexed less than 60°, the forces will be resisted by the firm superior portion of the acetabular rim, and a fracture of the femoral head may precede its dislocation.

In our patient the forces have been insufficient to produce a dislocation; in addition, the small cyst in the femoral head may have been of importance.

We considered the cystlike lesion in the femoral head to be an impression fracture associated with an abortive dislocation of the femoral head. This is, however, precluded by the fact that the defect is visible only at one level of the CT scan, which suggests a spherical shape.

We conclude that absence of a dislocation of the hip after an adequate trauma does not exclude fracture of the femoral head. With the introduction of computed tomography in diagnosing hip trauma, it is to be expected that similar cases, which would have been overlooked by routine radiography, will be found.

References

- Maroske, D., Thon, K. & Fischer, M. (1983) Die Hüftluxation mit Hüftkopffraktur. *Chirurg* 54, 400–405.
- Pipkin, G. (1957) Treatment of Grade IV fracture-dislocation of the hip. A review. *J. Bone Joint Surg.* 39-A, 1027–1042.