THE TORN ACETABULAR LABRUM

A Block to Reduction of a Dislocated Hip

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This short paper describes how the complete reduction of a traumatic dislocation of the hip may be prevented by a soft-tissue block. In both cases described, the labrum, detached like a bucket handle, lay in the hollow of the acetabulum and defied all attempts to obtain a full replacement.

Case 1—An agricultural worker, a man of thirty-eight, fell under a tractor, which ran over the inner side of his right thigh causing a backward dislocation of the head of the femur. Radiographs showed what appeared to be a simple posterior dislocation of the hip with a tiny linear fracture of the postero-superior bony rim of the acetabulum (Fig. 1). Reduction was attempted by a closed manipulation. Clinically the head of the femur appeared to go back into the acetabulum, but a radiograph showed that the reduction was not complete (Fig. 2). It will be seen from the radiograph that the head is low in the acetabulum, there is a wide gap between the upper surface of the head and the lower surface of the acetabulum, and Shenton’s line is broken.

It was considered that there was some soft-tissue obstruction preventing complete reduction and so, forty-eight hours after the accident, the hip was opened through a posterior incision. Lying across the floor of the acetabulum, blocking reduction, was the detached cotyloid ligament—the fibrocartilaginous rim of the acetabulum. It was firmly attached at both ends and lay tightly across the articular surface (Fig. 3). It had to be pulled out forcibly by a hook. It was excised and the femoral head could then be reduced completely. The rent in the capsule and a tear of the short lateral rotator muscles, made by the original dislocation, were repaired and the hip was immobilised. The post-operative radiograph showed normal relationship of head and acetabulum (Fig. 4).

Case 2—A similar case had been seen three years before. A man of twenty-one, who fell from his fast-moving motor cycle, suffered concussion and was unconscious for a time, so that it was not until two weeks later when he was up and about that he complained of pain in his hip. A radiograph showed a subluxated hip, a wide gap between the femur and the acetabulum, and a small bony loose body within the joint (Fig. 5). At the time of the accident this hip may have been dislocated and the fibrocartilaginous rim of the acetabulum torn off and with it a tiny fragment of bone. Spontaneous reduction would have trapped the loose fragment within the joint. This hip also was explored through a posterior incision. After the head of the femur had been dislocated it was seen that the whole of the postero-superior fibrocartilaginous rim of the acetabulum, with an attached fragment of bone, was lying deep in the acetabulum. The detached part of the rim was excised, the hip reduced, the capsule repaired, and the patient immobilised in a plaster spica for six weeks. Weight bearing was allowed after two months. The man has been back at full work for two and a half years and has no disability. Recent radiographic examination showed a normal hip joint (Fig. 6).

DISCUSSION

Posterior dislocation of the hip is most commonly caused by a force acting along the line of the femur when it is flexed and adducted. In this position the head of the femur is forced out on to the dorsum of the ilium, rupturing the capsule of the hip. If the femur is less flexed and less adducted a fracture of the rim of the acetabulum is more likely to occur. The size of the fractured fragment increases with a lessening of flexion until in the extreme
Case 1. Figure 1—Initial radiograph. Figure 2—After closed manipulation. Reduction is incomplete.

Case 1. Figure 3—Prepared specimen to show how the detached labrum lay across the acetabulum. Figure 4—Radiograph after excision of the labrum.
position of full extension and abduction of the femur a central dislocation of the hip occurs. It is believed that the fibrocartilaginous rim may be split from the acetabulum by the femoral head dislocating backwards, much in the same way as the labrum of the shoulder joint may

![Image](image1.png)

**FIG. 5**
Case 2—Subluxation of hip with bony fragment between the joint surfaces.

![Image](image2.png)

**FIG. 6**
Case 2—Two years after excision of fragment.

be torn from the glenoid in the Bankart lesion. If the dislocating force persists the femoral head rides over the loosened acetabular rim on to the dorsum ili, tearing or stretching the capsule which is attached beyond. When the head is reduced the loose fibrocartilaginous
fragment is pushed in front of it, into the acetabulum, and lies, like a bucket handle tear of a cartilage in the knee, blocking full reduction. Once in this position it is locked by the femoral head and will not go back into place spontaneously. In Case 2 the leg had borne weight, the displacement was not noted for fourteen days, and at operation the fragments could not be withdrawn from the hip until the fractured hip had been redislocated; in Case 1, although operation was only forty-eight hours after the accident, the fibrocartilaginous rim had to be pulled forcibly out of the acetabulum.

It is clear that the diagnosis cannot be made clinically. At the time of the initial reduction the femoral head appears to slip truly into the acetabulum and the reduction appears stable and spontaneous redislocation does not occur. Even at open operation redislocation of the head was not accomplished without some force.

Diagnosis is radiological, and a block to reduction can be recognised only by radiographic demonstration that the head of the femur is not fully reduced in the acetabulum. The head lies abnormally low and laterally in the acetabulum. The gap between the bones is greater than that on the other side. The line of the head does not conform to the line of the cup of the acetabulum and there is a break in Shenton's line. That a detachment of the fibrocartilaginous rim exists may be suspected from a radiograph such as that shown in Figure 1, in which there is a linear marginal fracture of the acetabulum. When bony fragments of the acetabular rim are detached and can be seen lying within the joint the diagnosis can be made with more ease and certainty (Fig. 5). When the bony fragments are small and difficult to see (Fig. 2) the diagnosis may be missed. If this mistake is to be avoided it is suggested that good quality antero-posterior and lateral radiographs must be taken immediately after the reduction of any dislocated hip, especially if a plaster spica is to be applied for subsequent immobilisation.

**SUMMARY**

Complete reduction of a dislocated hip may be blocked by a partial separation of the acetabular rim. The diagnosis is radiological and is easily missed. Treatment is by open operation and resection of the partly detached fibrocartilaginous rim.

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**REFERENCES**


