

Traumatic hip dislocation with spontaneous reduction and capsular interposition

A report of 2 children

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We present 2 cases of posterolateral hip dislocation in children followed by spontaneous reduction and interposition of soft tissue.

After reduction of a dislocated hip joint, interposition of soft tissues or fracture fragments must be excluded. When reduction has occurred spontane-

ously, the condition may be misjudged, correct treatment delayed and the hip joint permanently damaged, as occurred in one of our cases. In the second case, prompt surgery was undertaken and the patient recovered completely.

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Submitted 93-11-21. Accepted 94-04-28

Traumatic dislocation of the hip in children as in adults usually results from high-energy trauma. Rang (1974) and Offierski (1981) observed that in children less than 5 years old, the pliable joint capsule and cartilage allow dislocation to occur also after minor trauma. On reduction, interposition of an injured capsule or labrum can occur, and therefore complete concentric reduction must be secured (Barquet 1979, Canale and Manugian 1979, Shea et al. 1986).

We report 2 cases of spontaneously reduced posterolateral hip dislocations with soft tissue interposition in children. We have found only 2 previously described cases, 1 posterolateral and 1 anterior dislocation (Shea et al. 1986, Cinats et al. 1988).

Case 1

A 10-year-old boy was hit from behind on his lower legs by a snow-sledge. He immediately experienced pain from his right hip and thigh and was initially unable to walk. He was taken to our hospital on the day of the injury. The passive range of motion of the right hip was normal but with diffuse tenderness. Weight bearing was painful. Primary radiographs were reported to be normal. The patient was allowed to mobilize and bear weight, but returned 2 months later as he was still limping. The passive range of motion was now limited 20 degrees in flexion, 10 degrees in extension and 20 degrees in rotation. Repeat radiographs revealed a widened joint space

Case 1.



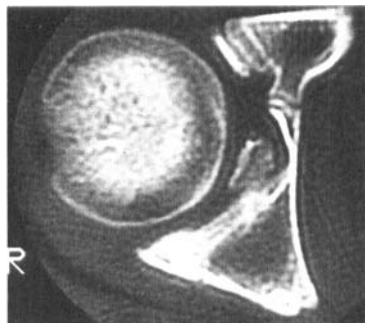
Primary examination shows widening of the joint space, medially in the right hip.



2 months after the trauma there is persistent widening of the joint space and also soft tissue calcifications.

Case 1.

CT-scan 12 months after the trauma. A fracture at the posterior aspect of the right acetabulum and a fracture fragment located centrally in the joint are visualized.



CT-scan 4 years after the trauma. The fracture fragment has increased in size and there are degenerative changes of the articular surfaces.

distally in the medial part of the joint and calcifications in the capsule. Retrospectively, the widening of the joint space could be seen also on the primary films. The patient was referred for physiotherapy. 9 months after the trauma the patient had still not fully recovered. Sonography of the hip revealed no pathology. At 1 year, a CT-scan was performed and a fracture at the dorsal aspect of the acetabulum was visualized. 3 small fracture fragments were also seen in the joint space, which was widened compared to the left side. The patient still seemed to be slowly recovering but had subtle symptoms, which, however, at this point did not warrant any further treatment or examinations. On sequential follow-up examinations the patient was fully active and had only a slightly decreased range of motion in his right hip.

4 years after the injury the patient was starting to limp again and experienced increasing pain from the hip. A CT-scan showed the previously identified bony fragments, the largest one increased in size, measuring 1 cm in diameter and located centrally in the joint. Degenerative changes of the articular surfaces were now evident at the dorsal aspect of the joint. At this stage, the hip was explored through a Hardinge incision and a loose body was found in the acetabular fossa. The posterolateral labrum was partially avulsed and interposed in the joint. Degenerative changes of the articular cartilage could be seen both at the femoral head and the acetabular joint surfaces. Postoperatively the previous pain disappeared, though the range of motion was still restricted.

On follow-up examination 6 years after the initial trauma the patient, now 16 years old, was still symptomatic and unable to participate in strenuous activities. Radiographs showed sclerosis and subchondral cysts, flattening of the femoral head and proximal narrowing of the joint cartilage.



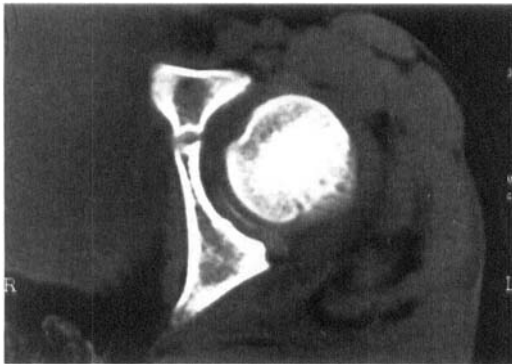
6 years after the trauma. Manifest secondary arthrosis.

Case 2

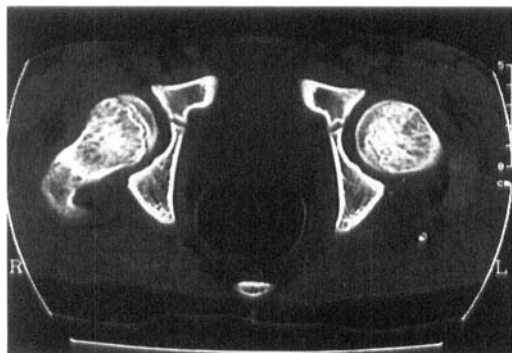
An 8-year-old boy fell 4 m from a roof, landing on his feet. He had intense pain in his left hip and was unable to stand up and bear weight. He was immediately brought to the emergency room of our hospital. On physical examination, he resisted any motion of the hip, which was kept in 10 degrees flexion. Radiographs of hip and pelvis revealed no skeletal injury, but the left joint space was widened as compared to the opposite side. The difference between the 2 sides was subtle on A-P views, but obvious when the hips were rotated. Sonography showed no signs of fluid in the joint, but a CT-scan confirmed a widened joint space with interposition of soft tissue, possibly an osteochondral fragment or interposed capsule. The hip was explored with a posterolateral approach and the posterior capsule incised longitudinally. The posterolateral labrum was detached from its acetabular insertion and interposed in the joint. The labrum was resutured to the acetabular rim and the capsular dam-

Case 2.

On the day of injury. The joint space of the left hip is widened.



CT-scan on the day of injury shows widening of the joint space and interposition of soft tissue.



CT-scan postoperatively. Congruency of hip joints.

age repaired. A postoperative CT-scan confirmed congruency of the joint. A skeletal scintigraphy was also performed showing a normal uptake of the femoral head. At follow-up 4 months post-injury, the boy was asymptomatic and radiograms showed no pathology.

Discussion

It is documented that reduction of a dislocated hip joint in children must be followed by careful radiographical evaluation to ensure that concentric reduction has been achieved (Smith and Loop 1976, Offierski 1981). Hougaard et al. (1987) found CT scanning to be a valuable complement after reduction of hip joint dislocations in adults. In several cases, intraarticular bone fragments or fractures engaging the articular surfaces, not revealed on conventional radiographs, were found. The folding of the posterolateral labrum into the joint space seems to be conclusive evidence of a dislocation having occurred. The diagnosis may be difficult, as in our first case the reported trauma was seemingly trivial and the clinical picture not alarming, which led to an inappropriate attitude of expectancy. In our second case, a sonography was performed post-injury and hip joint tamponade causing the joint incongruency could be excluded. It is worth noticing that the sonography failed to reveal the interposed labrum.

In all cases with hip symptoms following minor or major trauma, it is important to evaluate joint congruity. A comparison with the opposite side is imperative, and if there is any doubt, a CT-scan should be performed. Early correct diagnosis and surgical treatment should provide full restitution.

The incidence of necrosis of the femoral head after dislocation of the hip joint is usually reported to be about 10 percent. Predictive factors are an increasing time interval before reduction, increasing age of the patient, increasing severity of the trauma and fracture dislocations (Pennsylvania Orthopaedic Society 1968, Offierski 1981, Barquet 1982).

Our cases show the importance of early correct diagnosis of the injury and its extent. If the condition is misjudged and treatment delayed, the risk of permanent damage to the hip joint will increase.

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