INTRA-ARTICULAR DISLOCATION OF THE PATELLA

Report of a Case

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A boy aged ten years was brought to the Bristol Royal Infirmary in November 1961 after a fall in which the right knee struck a large stone. He was unable to stand or walk on that leg.

Examination within half an hour showed the knee to be held flexed 90 degrees, and there was an obvious bony protuberance over the femoral condyles anteriorly. Movement was limited to about 10 degrees. Radiographs confirmed that the bony protuberance was the patella, which was rotated on a horizontal axis so that its upper border lay against the femoral condyles (Fig. 1).

Under general anaesthesia the joint was found to be almost immobile. Pressure was applied to the patella from below, and it suddenly jerked back into its correct position. There was then no obvious injury to the quadriceps femoris insertion, the ligamentum patellae or any other ligament. A pressure bandage was applied and recovery was uneventful.

DISCUSSION

There are very few reports of this injury in the literature. Mention of it was made by Reichell (1904), who quoted four cases. Cheesman (1905) reported a case and reviewed five other cases, the earliest one being that of Midelfart (1887). Since that time sporadic cases have been cited, and Brady and Russell (1965) made reference to a total of twenty-five cases reported in the literature, adding a case of their own. They recommended primary operative reduction as the treatment of choice.

In view of the ease with which manipulative reduction was accomplished in the case reported here the opportunity to inspect the joint at operation did not arise. Nevertheless, the radiographs clearly demonstrated that the upper border of the patella was held against the femoral condyles. Furthermore, the absence of ligamentous laxity when the knee was examined under anaesthesia, and the subsequent course and rapid recovery of the knee, suggest that this was a pure dislocation of the patella with no associated injuries.

It appears from previous accounts that downward displacement of the upper border of the patella is more common than upward displacement of the lower pole in the ratio of about 6:1. It has usually followed an injury in which the body fell forwards and a blow was received above the patella, with the momentum of the body continuing in a forward direction (Perkins 1920, Brown 1924, Jones 1928). In other cases (Deaderick 1890, Küttner 1904, Aud 1922,
Farmer (1931) the injury occurred as a result of falling from a moving vehicle. Scott (1924) described two cases, both in boys aged fifteen who fell from moving objects, one from a freight train and the other from a merry-go-round. Scott emphasised that in both boys the injured knee had received two separate blows, and in both the upper border of the patella was rotated downward and driven into the joint space between the articular surfaces of the femur and tibia with rupture of the quadriceps tendon.

The average age of patients in the recorded cases was sixteen years. Reichell (1904), commenting on this, recalled that fracture of the patella was very rare under twenty years of age and almost never occurred in children.

Stimson (1899) argued that dislocations of the patella upwards or downwards should not have a place in a classification of knee injuries because they are the secondary results of other lesions—rupture of the ligamentum patellae or the quadriceps tendon. This view was also quoted by Smith (1891).

Of the dislocations reported since 1887 only four have been reduced by manipulation. Deaderick (1890) described the case of a youth of nineteen years who fell while boarding a train and sustained a "rupture of the quadriceps femoris tendon with dislocation of patella beneath the intercondyloid groove of the femur." From this account it seems that there was difficulty in reduction under chloroform anaesthesia, but closed reduction was eventually achieved. Aud’s case (1922) involved a youth aged seventeen years who had attempted to jump on to a moving train. The upper border of the patella was trapped between the lateral femoral condyle and the tibial plateau, and the quadriceps tendon was ruptured. Reduction was achieved by manipulation under general anaesthesia. In Allen’s case (1944) the injury was caused by a fall on the knee. The leg was held in full extension and reduction was achieved while a local anaesthetic solution was being infiltrated around the patella. Allen described this as an upward displacement of the lower pole of the patella with the articular surface facing upwards. Newman and Rutherford (1901) reported a man of twenty-four years who had fallen on to his right knee a few days before he presented at hospital. The knee was held in slight flexion and reduction was readily performed under chloroform anaesthesia. The direction of the rotation was also an upward displacement of the lower pole of the patella.

In most recorded cases the upper border of the patella rotated to such a degree that it became wedged in the joint between the femoral condyles and the tibial plateau. Associated rupture of the quadriceps tendon has usually been present, sometimes with additional injuries of the cruciate or lateral ligament. In these cases of complete rotation of the patella operative reduction certainly seems indicated because the likelihood of manipulative reduction must be remote.

In the case described in this report the degree of rotation was not so complete. The upper border of the patella clearly lay against the femoral condyles and the quadriceps tendon was not ruptured. These features of this condition are most uncommon.

**SUMMARY**

A case of intra-articular dislocation of the patella is reported. Its special interest lies in the apparent simplicity of both injury and reduction.

I wish to express my thanks to Mr A. L. Eyre-Brook for permission to publish this case and for his advice and encouragement in the preparation of this report.

**REFERENCES**


SCOTT, C. M. (1924): Two Rare Cases of Dislocated Patella. *Journal of the American Medical Association*, 82, 1198.
