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Case report

Patellar inversion: 180 degree rotation of the patella around its vertical axis within the intercondylar notch

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ABSTRACT

Background: Dislocation of the patella can occur around its vertical as well as horizontal axis. However, near 180 degree rotation of the patella around its vertical axis within the intercondylar notch without its complete dislocation has never been previously reported to the best of our knowledge. We report one such neglected case along with its management.

Methods: The patient underwent open reduction and de-rotation of patella with repair of the medial and lateral patellar retinacula. The orientation of the patellar tendon intra-operatively was used as a guide for the reduction manoeuvre required.

Results: The patient had a good functional result at more than one year of follow-up.

Conclusions: A skyline view of the knee in symptomatic patients with normal AP and lateral radiographs of the knee can be useful in diagnosing a rare intra-articular dislocation of the patella around its vertical axis. Neglected cases of such injuries can be easily treated with open reduction with the orientation of the patellar tendon guiding the manoeuvre to de-rotate the patella. Careful repair of lateral and medial retinacula in such cases is important in preventing future patellar instability.

1. Introduction

Patellar dislocation is a condition which is commonly encountered in clinical practice. Dislocation around its vertical as well as horizontal axis has also previously been reported, although very rarely. However, a 180° rotation of the patella around its vertical axis within the intercondylar notch without its complete dislocation has never been previously reported, to the best of our knowledge. We present a case of neglected near 180° flipping of the patella within the intercondylar fossa in a young male which required open reduction and soft tissue repair.

2. Case report

A 28 year old male presented to us with right knee pain while climbing stairs and in extremes of knee flexion. He had been hit on the outer aspect of the knee by a speeding motorbike. Before presenting to us, he was diagnosed with a soft tissue injury of the

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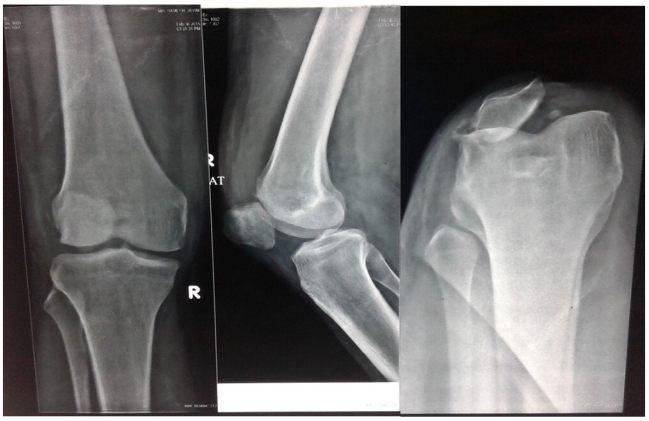

Figure 1. Anteroposterior (A), lateral (B) and skyline (C) views of the right knee showing an intra-articular patellar dislocation with 180° rotation around its vertical axis.

knee after a clinical and radiographic examination (anteroposterior and lateral radiographs of knee) elsewhere. He was placed in a cylinder cast for two months following which the knee was gradually mobilized in the index hospital. When he presented to us four months from injury, he had knee pain on climbing stairs. Clinical examination showed an irregular patellar surface on palpation along with tenderness in acute flexion. Range of motion was 0 to 140°, comparable to the normal contralateral knee. Lateral and skyline views of the knee revealed flipping of the patella along its vertical axis within the intercondylar notch (Figure 1). A magnetic resonance image (MRI) confirmed the diagnosis as well as intact quadriceps and patellar tendons (Figure 2).

The patient was scheduled for open reduction under anaesthesia. At operation, an intact quadriceps and patellar tendon and intact healed retinaculum on both sides of the patellar was found. The loss of parallel orientation of patellar tendon fibres and the crossing over of lateral fibres to the medial side anteriorly enabled us to know the direction of rotation of the patella (Figure 3); this helped us determine our manoeuvre to reduce the patella which could only be done after release of adhesions of the medial and lateral retinacular fibres. The patellar articular surface, which was facing anteriorly, as well as the trochlear articular cartilage was covered with fibrous tissue. The fibrous tissue was carefully dissected and removed taking care not to further damage the already partially degenerate cartilage. The medial and lateral retinacula were meticulously reinforced using vicryl sutures after the reduction (Figure 4). The patellar tracking was confirmed to be normal at the end of the procedure prior to final closure. The patient was allowed to weight bear and was allowed to move the knee as pain allowed tolerance. The patient is now completely pain free on walking and climbing stairs and has a full range of motion at more than one year of follow-up with a Kujala score of 95 out of 100 [1] (Figure 5).

3. Discussion

Patellar dislocation is quite commonly seen in orthopaedic practice. Cooper first described patellar dislocation with vertical axis rotation in 1844 [2]. Since then, attempts have been made to classify the condition. Ofluoglu et al. classified the condition

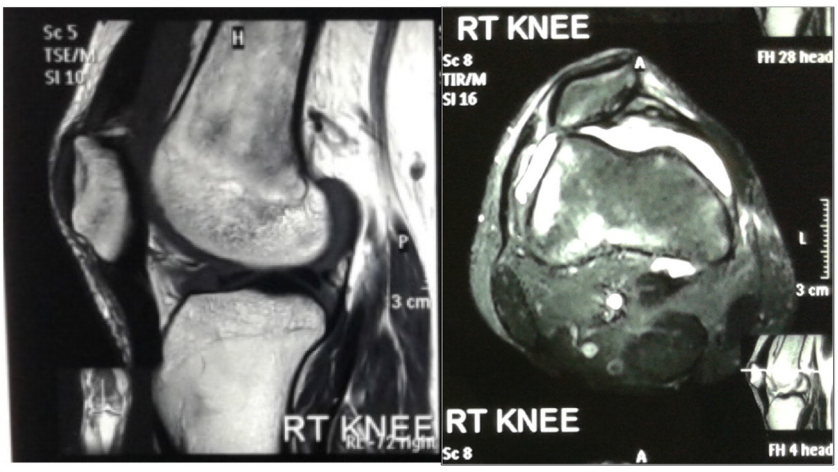

Figure 2. T2 weighted MRI images of the knee sagittal (A) and axial (B) sections showing patellar dislocation with the articular surface facing away from the trochlea and the intact quadriceps and patellar tendon.

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