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Case Report

A rare case of Hoffa fracture combined with lateral patellar dislocation

Martin C. Jordan *, Leonie A. Bittrich, Kai Fehske, Rainer H. Meffert, Hendrik Jansen

Department of Orthopaedic Trauma, Hand, Plastic and Reconstructive Surgery, University Hospital Würzburg, Oberdürrbacher Str. 6, 97080 Würzburg, Germany

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ABSTRACT

The coronal unicondylar fracture of the distal femur (AO 33-B3) is a rare intraarticular injury within the weight bearing area of the knee, initially described by Albert Hoffa in 1904. We report an unusual combination of a Hoffa fracture with lateral patellar dislocation in a young adult. Our patient sustained the injury by a sudden twist of his leg during sports. He presented clinically with knee swelling, dislocation of the patella, and localized tenderness; unable to bare weight. After plane radiograph confirmed the injury, manual reduction of the patella was done by hyperextension of the knee and medialward pressure. Afterwards, a CT scan and MRI were conducted. The injury was surgically treated with lag-screws, locking-plate and MPFL-reconstruction.

Case report

A seventeen year old boy experienced sudden knee torsion whilst playing sports at school. There was no external force involved and it was a first time traumatic patellar dislocation in this patient. The patient presented with severe pain and was not able to bend his leg. The initial X-rays showed a lateral patellar dislocation and a coronal fracture of the lateral condyle of his distal femur (Fig. 1). Reduction of the patella did not occur by itself, so hyperextension of the knee and medialward pressure were required. Subsequently, CT scan and MRI were performed (Figs. 2 and 3). The CT scan showed the fracture pattern as well as lateralization of the patella. The MRI confirmed disruption of the MPFL and verified a dislocated osteochondral fragment. For surgery, the patient was placed in a supine position with the knee flexed in 30°. Open reduction and internal fixation were performed (Fig. 4) by a lateral approach to the knee. After skin incision, the vastus lateralis muscle was retracted and the knee joint was opened. The condyle fragment was temporarily fixed with K-wires. Final attachment was done with two lag -screws and a locking -plate (Aptus, Medartis, Switzerland). The lateral meniscus was intact and the ACL was stable. An additional medial approach was used to suture the disrupted MPFL without a tendon graft. The osteochondral flake was reattached with a surgical adhesive (BioGlue, Cryolife, USA). Other injuries of the joint were excluded by precise inspection of knee. The postoperative care period lasted for 6 weeks and included no weight bearing and limited flexion of 30° for 2 weeks, 60° for another 2 weeks and 90° for the last 2 weeks. The screws and the plate were removed after 6 months (Fig. 5). After 18 months the patient presented in our out-patients clinic without restrictions, being able to return to his former level of activity.

* Corresponding author.
E-mail address: Jordan_M@ukw.de (M.C. Jordan).

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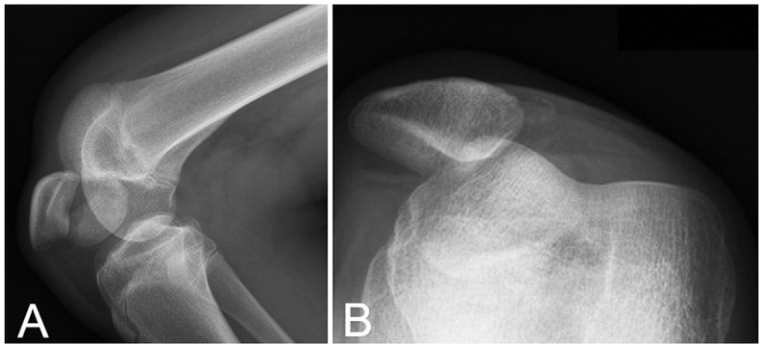

Fig. 1. A) Lateral radiograph of the left knee showing patellar dislocation and condyle fracture of the distal femur. B) Axial radiograph of the dislocated patella and a osteochondral flake.

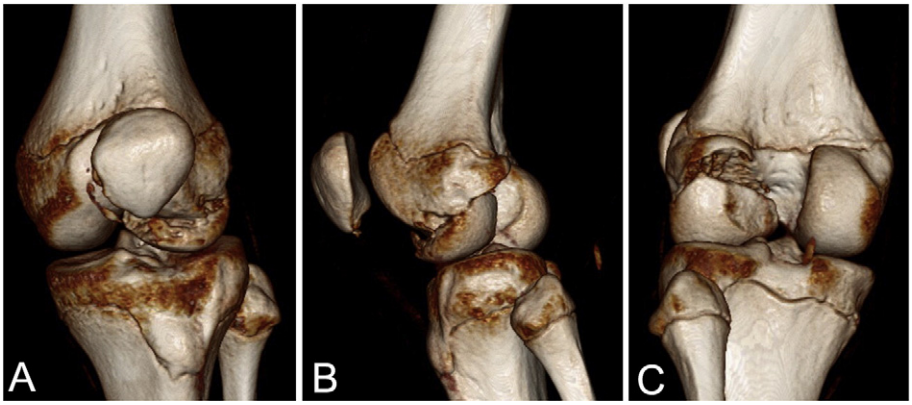

Fig. 2. A-C) CT scan and 3D reconstruction showing the fracture of the dorsolateral fraction of the lateral femur condyle.

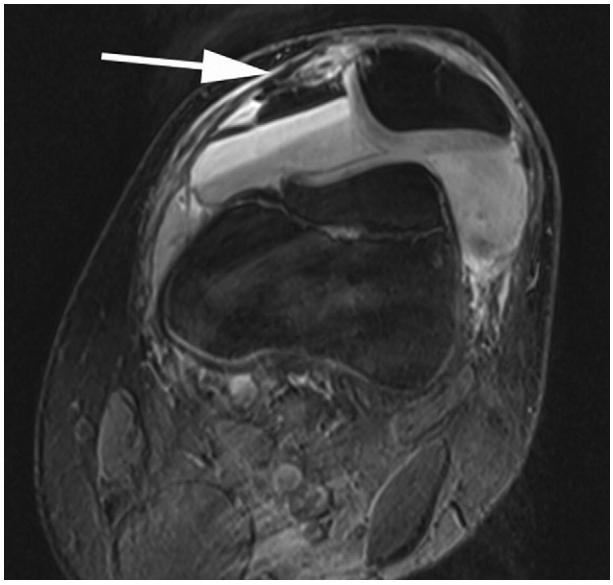

Fig. 3. MRI showing axial view of the patella. Massive hemarthrosis and lateralization of the patella are visible with disruption of the MPFL (arrow) and a dislocated osteochondral flake. The ACL was intact besides a partially avulsion at the bony insertion at the femoral fracture site.