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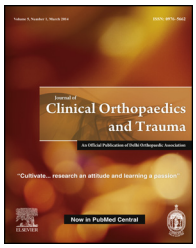

Case Report

Bicondylar Hoffa's fracture with patellar dislocation – a rare case

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ABSTRACT

Bicondylar Hoffa's fractures of the femur is very uncommon. Conjoint bicondylar Hoffa fracture with ipsilateral patellar dislocation, Bicondylar Hoffa's with patellar fracture and extensor mechanism rupture has been described in literature. We report a case of unconjoint bicondylar Hoffa's fracture with lateral patellar dislocation in 17-year-old male patient treated with open reduction and cancellous screw fixation that subsequently healed well with good functional outcome.

1. Introduction

Bicondylar Hoffa's fracture of the femur is very uncommon. Albert Hoffa was credited for describing the unicondylar Hoffa's fracture first in 1904,[1] and treatment protocols have been very well described. Conjoint bicondylar Hoffa fracture with ipsilateral patellar dislocation, bicondylar Hoffa's with patellar fracture and extensor mechanism rupture have all been described in literature.[2–5] We report a case of unconjoint bicondylar Hoffa's fracture with lateral patellar dislocation in 17-year-old male patient and to our knowledge no case has been described in literature.

2. Case report

A 17-year-old college going student presented to outpatient department with history of road traffic accident 2 weeks back and injury to right knee without any other associated injuries.

On local examination there was swelling of knee joint with altered anterior contour of the knee joint, sutured wound of size 4 cm over the antero-lateral aspect of the knee. On palpation the patella was lying laterally and not mobile. Movements of the knee joint were restricted and there was no distal neurovascular deficit. Radiographs revealed bicondylar Hoffa's fracture with patellar dislocation (Fig. 1).

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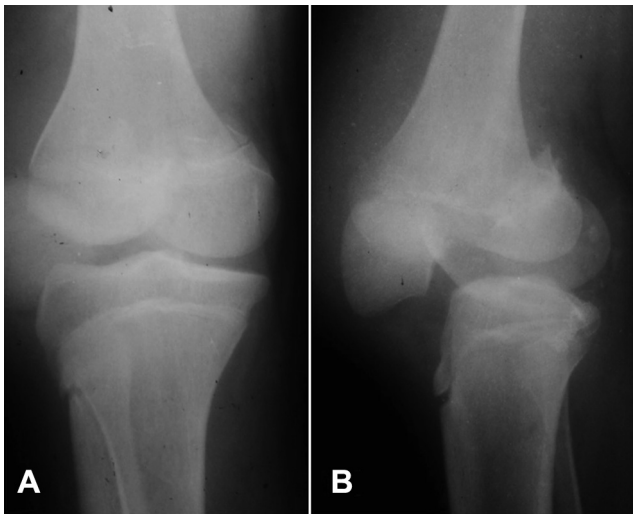

Fig. 1 – A & B Pre-operative oblique and lateral view radiographs of knee showing bicondylar Hoffa's fracture with patellar dislocation.

The patient was operated on 2nd day after admission. He was put in supine position under spinal anesthesia, and tourniquet was used. An anterior midline skin incision was followed by a lateral parapatellar arthrotomy as the plane created by trauma in medial retinaculum was not sufficient to reduce the patella, that was impacted in lateral femoral condyle fracture. The patella was found to be displaced laterally and in close approximation with fracture surface of proximal fragment. Dorsal periosteum of patella was stripped off partially and superior patellar articular surface showed minimal contusion. Patella was reduced back to trochlea and everted medially to expose the fracture after flexing the knee to 90°, lateral femoral fragment was migrated proximally and posteriorly with communition, whereas medial condyle was minimally displaced and there was no connection between both condyles. Collateral ligaments, cruciates and meniscus were found to be normal.

There was difficulty in reducing the lateral condyle because of soft callus which was debrided for anatomical reduction of the fracture, fixation was accomplished using four 4-mm cancellous screws (2 for each condyle) introduced antero-posteriorly through the non-articular surface, in a direction perpendicular to the fracture line so as to achieve inter-fragmentary compression. Although there was a comminution in the lateral condylar fragment, the strength of screw purchase in the bone was adequate for providing inter-fragmentary compression. The reduction and the alignment of the screws were confirmed by intra-operative fluoroscopy. Intra-articular insertion of the screws was ruled out. Before wound closure, satisfactory stability was tested with complete knee flexion.

Wound was closed in layers taking care to prevent excessive tightness of lateral structures, and patellar tracking was checked and found to be very stable (Fig. 2). Immobilization in tube slab was advised for two weeks, followed by intermittent mobilization of knee passively for two weeks and active mobilization was allowed after four weeks.

The patient was followed up to 9 months post-operatively and sequential radiographs showed successive bony union without further dislocation of patella (Fig. 3). Patient had 120° of flexion by 3rd month after vigorous physiotherapy and complete flexion of the knee without any ligamentous instability at the final follow up (Fig. 4).

3. Discussion

Bicondylar Hoffa's fracture is very uncommon injury resulting from high energy trauma and the probable mechanism of injury is axial compression to the knee with transmission of the ground reaction force through the tibial plateau to the posterior femoral condyles when the knee is flexed more than

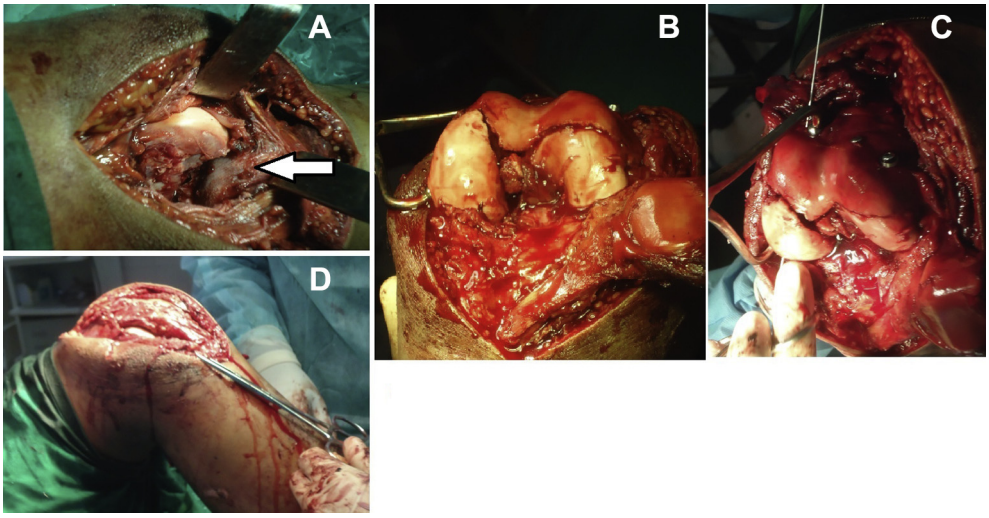

Fig. 2 – Intra-operative pictures.A – Lateral condyle fracture with torn periosteum of patella; B – Intra-operative picture showing reduction of bicondylar fracture. C – Fixation of bicondylar fracture with 4 mm cc screws; D – Checking stability of fracture reduction and patellar tracking.