

Peri-Implant Hoffa Fracture Of The Lateral Femoral Condyle: A Case Report

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INTRODUCTION:

Unicondylar femoral fractures account for 0.65% of all femoral fractures¹. Coronal plane or commonly described as Hoffa fracture since the term was coined in 1904 is a rare subtype of femoral condyle fracture. The true incidence of such injury has not been reported to the best of our knowledge. The mechanism of this injury has been proposed to be mainly caused by direct trauma, with axial compression on a flexed knee which concentrates the deforming forces on the posterior aspect of the femoral condyle leading to vertical sheering forces and failure in coronal plane^{2,3}.

CASE REPORT:

We report a case of a 22 years old gentleman with history of motor vehicle accident 5 years ago, following which left femur intramedullary nail was done. He also sustained left anterior cruciate ligament tear which was reconstructed 2 years later. This gentleman sustained another motor vehicle accident and complained of pain over his left knee. The knee was swollen and tender on examination with intact neurovascular status. Radiographs were taken and shows coronal fracture of the left lateral femoral condyle (Fig. 1).



Figure 1: Trauma radiograph showing intact intramedullary nail and Hoffa fracture of the lateral condyle. The previous femoral tunnel created can be seen.

The nail was removed followed by open reduction and screw fixation using two 6.5mm half threaded cancellous screws to achieve interfragmentary compression (Fig. 2). At two months follow up, the Hoffa fragment shows union and range of motion of left knee exercise was started (Fig. 3).



Figure 2: Post operative imaging showing reduction and compression of fracture site.



Figure 3: Visible bridging callus at post op 2 months on lateral radiograph.

DISCUSSIONS:

Hoffa fractures appearing as peri-implant fracture has yet to be reported. In this particular case, the intramedullary nail would have neutralized the force during trauma but act as a stress raiser at the distal end of the nail. This would have lead to the deforming forces being concentrated at the region of distal femur. Furthermore, the previous femoral tunnel created during the ACL reconstruction formed a weak point causing fracture initiation and propagation.

CONCLUSION:

Hoffa fractures presenting as peri-implant fracture may be under reported as intramedullary nailing has gained popularity in the previous two decades. Multiple biomechanical factors come into play to produce this unusual fracture pattern.

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