

## Nailing with Plate Augmentation for Simple Articular Distal Femur Fracture with Comminuted Metaphyseal-Diaphyseal Region

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### INTRODUCTION:

Distal femur fracture with comminution over metaphyseal-diaphyseal area poses a challenge to achieve stable fixation with single implant. Careful patient evaluation and fracture characterization is critical when choosing a fixation construct<sup>1</sup>. We are presenting a case of distal femur fracture with simple intraarticular split with comminuted metaphyseal-diaphyseal segment fixed with nail and plate construct.

### REPORT:

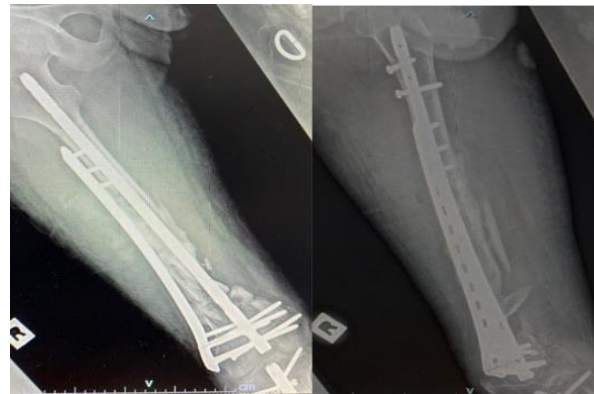
A 25 years old patient sustained motorcycle accident. The right lower limb was painful. Neurovascular intact. Radiographs showed distal femur fracture with comminution over midshaft extending to metaphyseal region. Intraarticular extension was confirmed with CT scan (AO/OTA 33C2).

Patient was put on hybrid external fixator at other centre before referred to us after 4 months of injury (Figure 1). Blood parameters showed no evidence on infection. A retrograde femoral nail introduced trans-patella tendon approach, advanced proximally reaching trochanteric level. Open reduction was done due to excessive callus over the endosteal region preventing insertion of guide wire. Subsequently, a lateral distal femur locking plate was then added to provide rotational stability (Figure 2). Demineralized bone matrix was added to bone defect at the anteromedial diaphyseal and metaphyseal region to promote union.

Knee and ankle range of motion started immediately after surgery. Partial weight bearing was allowed. Fracture achieved union at 3 months postoperatively.



**Figure 1: preoperative radiographs showing fracture was stabilized earlier with hybrid external fixator.**



**Figure 2: postoperative radiographs.**

### CONCLUSION:

Distal femur fracture with simple articular fracture line and comminuted metaphyseal-diaphyseal region require stable construct to allow union and avoid implant failure. Nail and plate construct is one of the option in treating this type of injury.

### REFERENCES:

- 1. Distal femoral fractures: current concepts.**  
Gwathmey FW Jr, Jones-Quaidoo SM, Kahler D, Hurwitz S, Cui Q. JAAOS 2010