

Nail-and-plate combination for periprosthetic distal femur fractures.

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INTRODUCTION:

Periprosthetic distal femur (DF) fractures have traditionally been treated with a locking plate or retrograde intramedullary nailing (rIMN) with reliable results. Here, we present our experiences in handling a case of periprosthetic DF fracture treated with a nail plate construct.

REPORT:

A 78-year-old woman with a history of bilateral Total Knee Arthroplasty fell in September 2022. Radiographic imaging revealed a left periprosthetic DF fracture (Lewis & Rorabeck Type II). A midline approach with a medial parapatellar arthrotomy was performed. Intraoperatively, there was a comminuted supracondylar femur fracture with a good surrounding bone stock, and there was no defect over the polyethylene liner. The femoral component was stable and had an open-box design to accommodate the nail. A rIMN of appropriate length and diameter was first inserted in a standard fashion. The nail was locked once the alignment and reduction were satisfactory. Next, a 13-hole lateral distal femoral locking plate was inserted using the MIPO technique. The plate was positioned slightly posterior to allow locking screws to be inserted using the miss-a-nail technique. The patient was allowed immediate weight-bearing with a walking frame, as tolerated, and the fracture healed uneventfully.



Figure 1: Preoperative anteroposterior radiograph of the left knee joint.



Figure 2: Six months postoperative anteroposterior radiograph of the left femur.



Figure 3: Six months postoperative lateral radiograph of the left femur.

CONCLUSION:

The nail and plate hybrid construct for periprosthetic DF fractures in osteoporotic patients provided significantly higher union and permitted immediate weight-bearing than single plate fixation¹.

REFERENCES:

1. Garala K, Ramoutar D, Li J, Syed F, Arastu M, Ward J, Patil S. Distal femoral fractures: A comparison between single lateral plate fixation and a combined femoral nail and plate fixation. *Injury*. 2022 Feb;53(2):634-639. doi: 10.1016/j.injury.2021.11.011. Epub 2021 Nov 10. PMID: 34836629.