

## Alternative use of proximal humerus internal locking system plate (PHILOS) at distal femoral fracture

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### INTRODUCTION:

Proximal humeral internal locking system plate (PHILOS) was originally designed to match the anatomy of proximal humerus. Considering its flexibility and shape, it allows for off-label application on other bones (e.g distal humerus, wrist, ankle, proximal tibia)<sup>2</sup>

We report a case treated in our institution in double plating of distal femoral fracture using PHILOS plate as a medial support.

### REPORT:

A 16 years old male presented with a closed supracondylar fracture of the left femur with concurrent patella fracture (figure 1) due to motor vehicle accident.

Medial parapatellar approach was employed to address both the distal femur and patella fracture. A femoral distractor was used to aid in reduction, whilst avoiding extensive periosteal damage. The fracture was fixed with a lateral variable angle (VA) distal femur locking plate with supplemental medial fixation with PHILOS plate.

Post-operative 8 months, radiographs revealed satisfactory healing both clinically and radiographically (figure 2). At final follow up, the patient was able to walk independently with full range of knee motion.



Figure 1: Pre-operative left knee x-ray



Figure 2: Post-operative 8 months left knee x-ray

### CONCLUSION:

PHILOS plate is low-profile and allows for several locking screws in different trajectories, thus enhancing the biomechanical properties of the bone-implant construct<sup>2</sup>

We found that the PHILOS plate fit well anatomically over the medial side of distal femur without requiring pre-contouring. Biomechanically, the plate acts well as a medial buttress to support the medial cortical gap preventing further varus malalignment

The addition of a PHILOS plate in double plating of the distal femur provides additional supports to distal femoral fixation

### REFERENCES:

1. Park et al., Minimally invasive plate osteosynthesis with dual plating for periprosthetic femoral fracture following total knee arthroplasty. J Orthop Surg Res 16
2. Poelman et al, Modified use of PHILOS plate for distal femoral nonunion, Eur J Orthop Traumatol 3