Dorsal Hook Plating of Patella Fractures With Immediate Range of Motion Results in Reliable Fixation, Low Implant Removal Rates, and Satisfactory Clinical Outcomes

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Purpose: Operative patella fracture treatment has been associated with high implant complication and reoperation rates. A newer method of dorsal anterior hook plating with a contoured mini-fragment 2.7-mm plate provides biplanar fixation with sufficient stability to allow accelerated rehabilitation. Outcomes following anterior hook plating of patella fractures with immediate postoperative range of motion (ROM) was studied.

Methods: Adult patients with patella fractures (OTA/AO 34C1-3) who underwent anterior hook plating from 2018-2023 with 6 months of follow-up were identified. These consecutive patients were treated with a protocol that included immediate postoperative closed chain ROM. Patient and treatment characteristics, healing complications, and reoperation were assessed retrospectively. Knee Outcome Survey-Activities of Daily Living (KOS-ADL), Tegner-Lysholm Scale, and Numerical Rating Scale for Pain (NRSP) were used for evaluation of clinical outcomes at a minimum of 6 months of follow-up.

Results: 61 patients (mean age 62 years; standard deviation [SD] 15.0; range, 22-83) met inclusion criteria. 97% healed after the index procedure. Two experienced fixation loss after substantial additional trauma and united after revision open reduction and internal fixation (ORIF). Six (9.8%) underwent implant removal. 89% responded to surveys at a mean of 27 months (SD 14.7; range, 6-62). Mean KOS-ADL was 91.4 (SD 7.9), egner-Lysholm Scale was 78.0 (SD 19.4), and NRSP was 2.67 (SD 2.5). NRSP scores improved with increased time from surgery ($P<0.05$).

Conclusion: Dorsal hook plating safely allowed immediate postoperative range of motion, resulting in low nonunion and implant removal rates, and satisfactory patient outcomes.

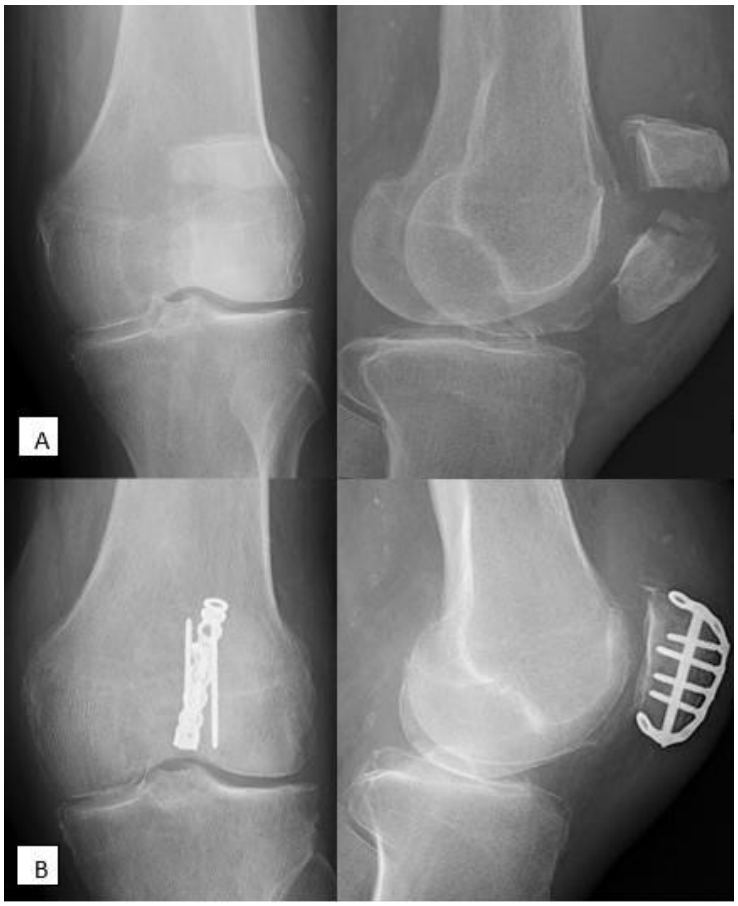

Figure 1: Case example of a 75-year-old male with a multi-fragmentary OTA/AO 34-C2 type patella fracture.
A) Injury anterior-posterior (AP) and lateral radiographs of the left patella.
B) AP and lateral radiographs of the patella 6 weeks post- operatively