

Breaking the Kneecap Code: Surgery Preservation versus Sacrifice

¹CM Hanif;

¹Department of Orthopaedics, School of Medical Sciences, University Sains Malaysia Kubang Kerian, Kota Bharu, Malaysia

INTRODUCTION:

Managing severe comminuted patellar fractures is difficult due to the complexities of realigning intra-articular fragments and restoring the extensor mechanism.

REPORT:

A 35-year-old male presented to the emergency department after an occupational fall resulting in bilateral knee injuries. X-rays revealed isolated

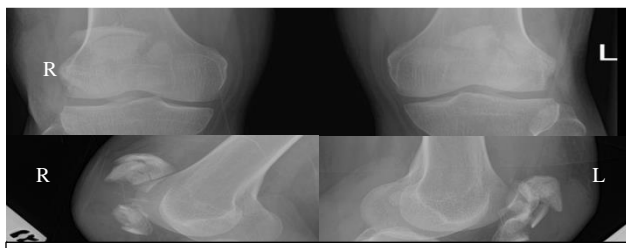


Figure 1: Pre-operative Xray AP & lateral view.

comminuted fractures of both patellas, classified as 34C3 OA/OTA. Bilateral open reduction and cannulated compression screws with fiber tape cerclage were planned. A midline incision was made, revealing torn patellar retinaculum and multiple fracture fragments. These were temporarily fixed with K wires before inserting cannulated screws and applying fiber tape for cerclage. Intra-operative stability was confirmed through flexion and extension tests. Postoperatively, the patient began weight-bearing with crutches and a knee brace, initiating range of motion exercises. At two weeks, 90 degrees of active flexion was achieved, improving to 130 degrees at three months. Pain, measured by VAS, was rated 0 at three months, indicating excellent pain control. Both LEFS and Kujala scores improved, suggesting a favorable functional outcome. Repairing comminuted patella fractures presents a significant technical challenge. Previously, there was a tendency towards total or partial removal of the patella, but there has been a shift towards preserving it. However, sacrificing the lower pole in such fractures can result in altered patellar tendon length, leading to chronic pain and suboptimal outcomes. Various fixation techniques have been

explored recently, including mesh plates, suture anchors, miniplates, and tension band wiring, yet a consensus on the optimal implant choice remains elusive. In this study, we meticulously

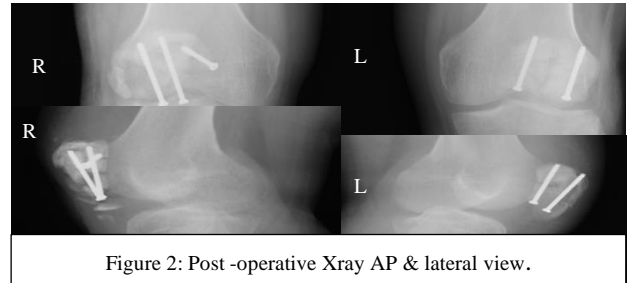


Figure 2: Post-operative Xray AP & lateral view.

endeavored to unite the fragments using cannulated screws and fiber tapes, yielding favorable functional outcomes. Complications, such as reduced range of motion, are frequently observed postoperatively, with factors like infection and prolonged immobilization contributing to their occurrence. While Nikiforidis et al have reported a decrease in terminal range of motion, which was effectively managed by patients, others have noted a significant loss of reduction and poor functional outcomes. Our study underscores the importance of initiating early and intensive rehabilitation following the establishment of a stable construct. Minimizing or eliminating limb immobilization helps mitigate muscle wasting, ultimately leading to superior outcomes.

CONCLUSION:

A bilateral isolated comminuted patella fracture is a rare occurrence. Opting for salvage procedures in cases of severely comminuted patella fractures can yield promising functional outcomes when stable fragment fixation and early rehabilitation are employed. Consequently, this approach may be favored over patella excision.

REFERENCES:

Nikiforidis P. Patellar fractures: contemporary approach to operative treatment, using different types of the tension band principles. *Eur J Orthop Surg Traumatol.* 1999; 9:21-6.