Outcomes of Variable Angle Locking Anterior Patella Plating for the Treatment of OTA 34-C3 Patella Fractures

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INTRODUCTION: The gold standard for patella fracture fixation is tension band wiring, however achieving stable anatomic fixation can be challenging in comminuted patterns. The “star” variable angle locking patella plate (Synthes, Paoli, PA) is an alternative fixation construct that is meant to address these limitations by providing multiple fixation points and dorsal cortical stability. The purpose of this study was to analyze the outcomes of patients treated with the variable angle locking “star” patella plate.

METHODS:

358 patients who underwent repair of a displaced patella fracture over a 10-year period were reviewed. Patients who sustained an isolated patella fracture and underwent ORIF with the variable angle locking star shaped patella plating system with at least 6 months of follow up were analyzed. Demographic and treatment characteristics, fracture union, complications, and functional outcome measures as measured by knee range of motion (ROM) were collected retrospectively at standard follow up intervals.

RESULTS:

31 patients (average age 58.10 +/- 16.72 years, average BMI 25.15 +/- 5.36) treated at one institution were identified. All fractures were classified as OTA types 34-C3. The average operating room time (wheels in to wheels out) was 151.68 +/- 54.52 minutes. One patient (3.2%) developed a fracture related infection (FRI), two patients (6.5%) had wound complications, and one patient (3.2%) developed a VTE event following surgery. All fractures healed by 6 months and no patient underwent removal of symptomatic hardware. Three patients underwent secondary operation, one irrigation and debridement of a confirmed FRI, one manipulation under anesthesia for knee contracture, and one revision ORIF after loss of distal fixation. Patients displayed an average knee ROM of 105.83° +/- 21.90° and 120.16° +/-17.14° at the 3- and 6-month points.

DISCUSSION AND CONCLUSION: The novel locking “star” patella plate appears to be a reliable and safe method of treatment for the most complex patella fractures, with a lower failure rate than previously reported.