The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or medical device he or she wishes to use in clinical practice.

SCIENTIFIC POSTER #83  Knee and Tibial Plateau

Mapping Recovery in Simple and Complex Tibial Plateau Fracture Fixation

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Purpose: The purpose of this study is to determine the trajectory of functional recovery following open reduction and internal fixation (ORIF) of tibial plateau fractures between set time points (0-6 months, 6-12 months, 1-5 years) and to compare this for simple (OTA 41-B) and complex (OTA 41-C) fractures. This information would be useful for prognostication when counseling patients.

Methods: Patients undergoing tibial plateau ORIF were enrolled into a prospective database at a Level I academic trauma center between 2005-2015. Functional outcome using the Short Form-36 Physical Composite Summary score (SF-36 PCS) was collected at baseline, 6 months, and 1 and 5 years postoperatively. The proportion achieving the Minimal Clinically Important Difference (MCID) between time points was calculated. Trajectory of recovery for patients with complex fractures (OTA 41-C) was compared to those with simple patterns (OTA 41-B). Means were compared using paired t tests, proportions using Fisher’s exact test. Statistical significance was set at P <0.05.

Results: 188 were enrolled: 129 (68.5%) simple and 59 (31.5%) complex patterns. Mean baseline scores were similar (simple 56.2 vs complex 56.3, P = 0.9). Mean SF-36 PCS improved significantly in both groups between 6-12 months (P <0.001) and 1-5 years (simple P = 0.01, complex P = 0.008). In both groups, the baseline scores were not reached at 5 years. For each time point except 5 years, the SF-36 PCS was significantly higher in the simple group (P <0.001, 5-year P = 0.1). The slope of improvement in the SF-36 PCS was steeper in the complex group for both the 6-12 month and 1-5 year periods. At 6 months, there was a significant difference between the groups in the proportion of patients achieving the MCID (simple 76% vs complex 95%, P =0.001) with no difference between 6-12 months (simple 66% vs complex 66%). Between 1-5 years, proportionally more patients achieved the MCID in the complex group (74% vs 60%), although not statistically significant.

Conclusion: For ORIF of tibial plateau fractures, the trajectory of recovery is characterized by an initial decline in function from baseline, a steep improvement in the subsequent 6 months, and ongoing recovery up to 5 years. In the simple patterns, patients achieve higher function by 6 months when compared to the complex patterns. However, the complex patterns demonstrate a steeper trajectory of recovery between 6-12 months and 1-5 years with comparable scores between the groups achieved only at 5 years, suggesting that for complex patterns, recovery occurs more in the later time periods. In both groups, function does not improve to baseline by 5 years.