Does Delay to Fixation Matter in the Management of Unstable Elbow Fractures?

***Jacob A. Linker, BA**; Christopher J. Pettit, BS; Abhishek Ganta, MD; Sanjit R. Konda, MD; Kenneth A. Egol, MD*

Purpose: Our objective was to determine if there is a correlation between time to surgical intervention (TTS) and subsequent complications following repair of unstable elbow fractures and fracture dislocations.

Methods: 351 patients who sustained an elbow fracture or fracture dislocation (OTA fracture classification 13-A, B, and C and 21-A, B, and C), underwent surgical repair, and had at least 6 months of postoperative follow-up were identified and grouped as those who underwent surgery within 14 days after injury (early) or ≥14 days after injury (delayed). Radiographic and clinical follow-up was obtained at all visits and a Mayo Elbow Performance Index (MEPI) was calculated based on the latest follow-up. Complications reported included: infection (based on fracture-related infection [FRI] criteria), hardware failure (radiographic implant breakage or loosening prior to healing), elbow contracture (defined as <100° arc of motion after 3 months of follow-up), and fracture nonunion (defined as failure to achieve 3/4 cortex bridging after 3 radiographic follow-up visits). $\chi 2$ analysis, analysis of variance, and Spearman correlation analysis were used to determine any significant differences between the patient cohorts.

Results: 82 patients (23.4%) developed at least 1 complication while 269 patients (76.6%) did not. Mean TTS for patients who did and did not experience a complication was 6 and 10 days, respectively, and this was not significantly different (P = 0.217). There were no significant differences in demographics (P>0.05 for all). Of the 304 patients with a TTS <2 weeks, 71 (23.4%) experienced a complication. Of the 47 patients with a TTS ≥2 weeks, 11 (23.4%) experienced a complication. This difference was not significant (P = 0.561). Individual complications were not associated with TTS (P>0.05 for all). TTS was not correlated with arc of motion at any follow-up visit (P>0.05 for all).

Conclusion: Delays in time to surgical fixation for unstable fractures were not correlated with the development of postoperative complications for these injuries.