Time to Surgery for Unstable Elbow Fractures Is Not Associated with an Increased Risk for Complications

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Purpose: Some have reported that a delay in time to surgery (TTS) is correlated with a higher risk of complications in the operative treatment of hip fractures and proximal humerus fractures. The aim of this study was to determine if there is a correlation between TTS and complications following repair of unstable elbow fractures.

Methods: 353 patients who sustained an elbow fracture or fracture dislocation, underwent surgical repair, and ≥6 months of postoperative follow-up were identified and were grouped as those who experienced a complication and those who did not. Complications reported included infection, hardware failure, elbow contracture, and fracture nonunion. A Mann-Whitney U test was run to determine if there were differences in TTS between those who experienced a complication and those who did not. A Spearman correlation test was run to determine if TTS was correlated with the patients' range of motion at 2 weeks, 6 weeks, 3 months, 6 months, and 1 year and their Mayo Elbow Performance Index (MEPI) score at their latest follow-up interval. A $\chi 2$ test was run to determine if patients with a TTS ≥2 weeks experienced a greater number of complications than those with a TTS surgery less than 2 weeks.

Results: The median TTS for patients who did not experience a complication was 7 days, whereas the median for patients who did was 6 days and this was not significantly different, U = 9,282, z = –0.723, $P = 0.469$. There were no differences in age, Charlson Comorbidity Index (CCI), or gender between the two groups. The Spearman correlation test determined that TTS was not correlated with 2-week arc of motion (rs = 0.103), 6-week arc of motion (rs = –0.053), 3-month arc of motion (rs = –0.035), 6-month arc of motion (rs = –0.055), 1-year arc of motion (rs = –0.089), or latest MEPI score (rs = –0.103). The $\chi 2$ test of homogeneity found that, of the 39 patients with a TTS ≥2 weeks, 13 (25%) experienced a complication. Of the 244 patients with a TTS <2 weeks, 56 (18.7%) experienced a complication. These differences were not significant ($P = 0.288$).

Conclusion: Surgeons can feel comfortable delaying complex elbow surgery for various reasons and not diminish patient-expected outcomes.