

Reoperation After Open Reduction and Internal Fixation of Olecranon Fractures*Theodoros H. Tosounidis, MD, PhD¹; Nikolaos Davarinos, MD¹;**Nikolaos Kanakaris, MD, PhD²; Peter V. Giannoudis, MD, FRCS, MBBS, BS²,**¹Leeds General Infirmary, Major Trauma Centre, Leeds, UNITED KINGDOM;**²Leeds Teaching Hospitals NHS Trust, Academic Department of Trauma and Orthopaedics, Leeds General Infirmary, Leeds, UNITED KINGDOM*

Purpose: The vast majority of olecranon fractures require internal fixation (plating or tension band wiring) with favorable outcomes. Nevertheless, the exact prevalence of complications after their surgical fixation remains obscure. We sought to determine whether there is a difference in reinterventions after surgical fixation of olecranon fractures with either plating (PL) or tension band wiring (TBW). Our null hypothesis was that there would be no difference.

Methods: After IRB approval, 778 patients treated surgically for an acutely displaced olecranon fracture between 2007-2013 were identified and reviewed retrospectively at a minimum of 24 months follow-up (FU). Fractures were divided into two cohorts according to the surgical fixation method: plate and tension band wiring. Inclusion criteria included adult patients >16 years of age, who had sustained isolated olecranon fracture. Exclusion criteria were children, patients with complex elbow injuries, incomplete data records, and loss to FU. Group analysis included demographics (age, gender), mechanism of injury, fracture characteristics, laterality, method of fixation, complications, time from index surgery to reoperation, and reason for reoperation. Fisher exact test, *t* test, and odds ratio were used for statistical analysis.

Results: In total 237 patients with a mean age of 58 years (range, 16-95) met the inclusion criteria. 112 (47.25%) were in the PL group and 125 (52.75%) in the TBW group. No differences in demographics, type of fracture, laterality, time to reoperation, or length to FU existed between groups. 38 revision operations were carried out (22 and 16 in the PL and TBW groups, respectively). The reasons for revision were: 26 cases for removal implants for skin irritation and /or superficial infection, 1 case for nonunion, and 11 cases for fixation failure. The overall odds ratio for a revision operation was similar among the two groups.

Conclusion: This Level III therapeutic retrospective comparative study indicates that there is no difference in the reoperation rates after surgical fixation of olecranon fractures treated either with PL or TBW. The most common cause for reintervention was soft-tissue irritation.