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Timing of Open Reduction and Internal Fixation of Ankle Fractures

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Introduction/Purpose: Unstable ankle fractures are typically treated with open reduction and internal fixation (ORIF) for stabilization in an effort to ultimately prevent post-traumatic arthritis. It is not uncommon for operative treatment to be performed as an outpatient in the ambulatory surgery setting several days to a couple weeks after the injury to facilitate things from a scheduling perspective. It is unclear what effect this delay has on functional outcome. The purpose of this study is to assess the impact of delayed operative treatment by comparing the functional outcomes for groups of patients based on the amount of time between the injury and surgery.

Methods: A retrospective chart review of 122 ankle fracture patients who were surgically treated by ORIF over a three year period was performed. All ankle fracture patients older than 18 years with a minimum of 24 months of follow-up were included. A total of 61 patients were included for this study. Three patients were excluded; 2 patients had an open injury and 1 patient presented with a delayed union. Demographic data, comorbidities, injury characteristics, duration from injury to surgery, operative time, length of postoperative stay, complications and functional outcomes were recorded. Functional outcome was determined by Foot and Ankle Outcome Score (FAOS) at the latest follow-up visit. Comparison of demographic variables and the subcategory of FAOS including symptoms, pain, activities of daily living (ADL), sport activity and quality of life (QOL) was performed between patient underwent ORIF less than 14 days after injury and 14 days or greater.

Results: A total of 58 patients were included in this study. Thirty-six patients (62.1%) were female. The mean age of patients was 48.14 ± 16.84 years (19-84 years). The mean follow-up time was 41.48 ± 12.25 months (24-76 months). The duration between injury and operative fixation in the two groups was 7 ± 3 days (<14 days) and 18 ± 3 days (>14 days), respectively. There was no statistically significant difference in demographic variables, comorbidities, injury characteristics, or length of operation. Each subcategory of FAOS demonstrated no statistically significant difference between these two groups. (Table 1) Additionally, further analysis for the delayed fixation more than 7 days and 10 days also revealed no significant difference of FAOS.

Conclusion: Open reduction and internal fixation of ankle fracture more than 14 days does not significantly diminish functional outcome according to FAOS. Delay of ORIF for ankle fractures does not play a significant role in the long-term functional outcome.

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