

Health-Related Quality of Life Decreases Following Resolution of Fracture and Fracture-Related Complications

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Purpose: It is clear from previous literature that many patients do not return to full function at 1 year following a tibia fracture. However, less is known about the implications of specific fracture-related complications on a patient's quality of life. The purpose of this study was to describe the preference-weighted quality of life for common complications following tibia fractures. We hypothesized that these measures would improve at 1 year post-injury.

Methods: This is a secondary analysis of 2138 tibia fractures patients enrolled in the FLOW (Fluid Lavage of Open Wounds) and SPRINT (Study to Prospectively Evaluate Reamed Intra-medullary Nails in Tibial Fractures) trials. Patients returned for follow-up assessments at 2 weeks, 6 weeks, 3 months, 6 months, 9 months, and 12 months post-fracture. Outcome measures were confirmed by a blinded adjudication committee. Outcome measures include operative complications (compartment syndrome, infection, nonunion, malunion, wound issue requiring flap, wound issue requiring split-thickness skin graft and symptomatic hardware) and nonoperative complications (infection, wound issues). Preference-rated utility values were converted from Short Form-12 (SF-12) or Short Form-36 (SF-36) into SF-6D.

Results: The mean quality-adjusted life years (QALYs) per year following tibia fracture were significantly higher in patients who did not experience a complication compared to those who sustained a nonoperative complication (0.681 [SD 0.122] vs 0.632 [SD 0.126], $P < 0.001$) and to those who sustained an operative complication (0.681 [SD 0.122] vs 0.625 [SD 0.108], $P < 0.001$). All patients demonstrated improvement in utility value from the time of injury to final follow-up. Utility values for patients with a complication were significantly lower than those without a complication at all time points after 6 weeks ($P < 0.01$).

Conclusion: This analysis of 2138 prospectively followed patients with a tibia fracture demonstrates that utility values improve over the year following injury; however, patients who experience complications have significantly lower utility values at 6 weeks, 3 months, 6 months, 9 months, and 12 months, compared to those who do not experience a complication. Furthermore, on average, patients with tibia fracture, with or without complication, do not return to their baseline utility value or to the US age-adjusted norms. This suggests that, while the acute fracture and complications may have resolved clinically, the detrimental effect on a patient's quality of life persists.