

Patient-Reported Outcomes of Stabilization of Rib Fractures Utilizing an Electronic Platform Outside of Clinic Follow-up

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Purpose: Rib fractures are a common cause of pain and disability in patients with thoracic injury and result in a large psycho-social-economic impact. Approximately 20% of rib fracture patients still report clinically significant pain more than 90 days from injury. Currently, there is little evidence and data for patients with rib fractures beyond the inpatient stay or 90 days post-injury. We adopted an electronic platform to collect patient-reported outcomes (PROs) independent of follow-up with a provider to circumvent the low in-clinic follow-up rate in the trauma patient population.

Methods: Trauma patients who underwent surgical stabilization of rib fractures (SSRF) from (2019-2023) at our Level I trauma center were enrolled in our electronic PRO program. PRO surveys were prospectively collected at 6 weeks, 3 months, 6 months, and 1 year postoperatively. The surveys included pain, Single Assessment Numeric Evaluation of improvement (SANE), and the Patient-Reported Outcomes Measurement Information System Global Health (PROMIS-10 GPH). The recovery curves with mean for PROMIS-10 GPH, SANE, and pain score were plotted to visualize the longitudinal patient progression.

Results: 60 patients were included. The mean age of the cohort was 60.1 years. 30.0% of the patients were female. Pain decreased significantly from 8.2 at the time of admission to 3.6 ($P<0.01$) at 6 weeks following SSRF and 2.9 one year after fixation ($P<0.01$). SANE scores increased from 64.4 at 6 weeks to 81.4 at 1 year following SSRF ($P<0.01$). PROMIS GPH score was 43.4 at 6 weeks and 46.1 at 1 year ($P = 0.1$).

Conclusion: Patients with rib fractures treated with SSRF experience a significant pain decrease in the first 6 weeks following treatment. Patients continue to experience improvement at 1 year postoperatively as evidenced by the SANE scores. Our data demonstrated that patients who undergo SSRF have a long recovery course spanning over 1 year postoperatively. This information is helpful when counseling rib fractures to patients and providers.