



CWIS Chest Wall Injury Summit 2023

Oral Presentation Abstract Submission

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Title of Presentation Sternal Fixation for Traumatic Sternal Fractures Demonstrates Better Long-Term Quality of Life Outcomes than Non-Operative Management: A Survey Analysis

Background

Sternal fractures are a rare but debilitating injury. They result in significant pain, respiratory compromise and decreased upper extremity range of motion as the sternum is often considered the fourth column of the thoracic spine. Sternal fixation (SF) has recently come into favor as a viable treatment option for sternal fractures, however, there remains a significant paucity of literature demonstrating the long-term benefits of SF. The purpose of this study was to examine the long-term outcomes of SF with the hypothesis that SF patients demonstrate long-term better quality of life (QoL) than those patients managed non-operatively.

Methods

This is an IRB approved survey study at our level 1, academic hospital. All patients with the initial diagnosis of sternal fracture were included from 1/2016 through 7/2021. Patients were grouped based on whether they received SF or were managed non-operatively (NOM). Basic demographics were obtained. A total of 3 survey phone call attempts were conducted for all patients. Time from injury to survey was recorded. Outcomes included response to QoL survey which inquired about the following categories: mobility, self-care, usual activities (including return to work), chest pain/discomfort, and anxiety/depression. The survey was based on a scale of 1 to 5 (1 = unable to perform/worst condition

possible; 5 = no problem with activity/best possible condition). Lastly, patients were asked to rate their current health on a scale of 0 to 100 (100 being the best possible health imaginable). Chi square, t-test and median tests were used for analysis. Significance was set at $p < 0.05$.

Results

384 patients with sternal fractures were surveyed. 69 underwent SF and 315 were NOM. Of the patients that underwent SF, 38 (55.1%) participated in the survey, while 126 (40%) of the NOM cohort participated. Basic demographics are seen in Table 1. Average time from sternal fracture to survey was 1,198 (+\492) days for the SF group and 1,454 (+\567) days for the NOM group. Table 2 demonstrates the outcomes of the survey analysis.

Conclusion

Sternal fixation provides better long-term quality of life and better overall health scores compared to non-operative management.