

Morbid Obesity Negatively Impacts Short-Term Complications After Operative Pelvic Ring Fracture Treatment

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Purpose: The objective of this study was to analyze early complications in patients undergoing surgical treatment of pelvic ring injuries, comparing patients with a normal body mass index (BMI) to patients who are obese and morbidly obese, independently.

Methods: Patients with operatively treated pelvic ring injuries over a 3-year period (2015-2018) were reviewed. Patients were separated into 3 groups based on BMI: Group 1, <30; Group 2, 30-30.9; and Group 3, >40. Outcome variables included total operative time, estimated blood loss, length of stay, and early medical and surgical complications. The means of each variable were compared using analysis of variance, and significance was set at $P < 0.05$. Nonparametric statistical analysis of categorical information was performed using a χ^2 test, unless an expected value was less than 5, in which case Fisher exact test was used.

Results: Over a 3-year period, 186 patients were identified. The number of patients in Groups 1-3 were 127, 44, and 15, respectively. The average BMI of the cohort was 27.8. The average BMI for Groups 1-3 was 24.1, 33.4, and 44.6 ($P < 0.001$), respectively. Operative times for Groups 1-3 differed significantly: 101.0 minutes, 141.8 minutes, and 128.3 minutes, respectively ($P = 0.003$). We found 17 complications in Group 1 compared to 5 complications in Group 2 ($P = 0.73$) and 7 complications in Group 3 ($P = 0.004$) (Table 1). The complication rates comparing Group 2 to Group 3 differed significantly ($P = 0.007$). Although there were no fixation failures, loosening of hardware was observed. There were 2 patients requiring hardware removal for loose hardware in Group 1 compared to none in Group 2 and 3 in Group 3 ($P < 0.01$). When comparing the rate of hardware removal in Group 2 to 3, statistical significance was reached ($P = 0.008$).

Conclusion: We have shown that patients who are morbidly obese are at a greater risk of developing complications when compared to patients who have a lower BMI. Specifically, morbidly obese patients require removal of hardware due to loosening hardware at a higher rate than patients with a lower BMI.