

Morbid Obesity and Short-Term Complications Following Acetabular Fracture Surgery: A Comparative Cohort Study

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Purpose: The objective of this study was to compare early perioperative complications in patients with a normal body mass index (BMI) to patients who are pre-obese, obese, and morbidly obese.

Methods: The study was conducted at a Level-I trauma center. Patients were separated into 4 groups based on their BMI on admission. Group 1 had a BMI <25 kg/m² (normal), Group 2 had a BMI between 25 and 29.9 (pre-obesity), Group 3 had a BMI between 30 and 39.9 (obese), and Group 4 had a BMI >40 (morbidly obese). Outcome variables included total operative time (OT), estimated blood loss (EBL), length of stay (LOS), and early medical and surgical complications. A comparison between groups was performed for each outcome variable and surgical complication.

Results: We identified 333 patients; the number of patients in Groups 1-4 was 86, 96, 121, and 30, respectively. The average BMI for Groups 1-4 was 22.3, 27.3, 35.9, and 44.9 ($P < 0.001$), respectively, while the average BMI for the cohort was 29.9. OT, EBL, and LOS did not differ between groups or to which surgical approach was used. Diabetic patients were analyzed separately, and no complications were found. To determine if any additional factors influenced complication rates, we performed a subgroup analysis within each group that revealed no statistically significant relationships. There were no significant relationships when comparing complication rates among groups (Table 1). Group 4 experienced significantly more pulmonary embolism (PE) compared to Group 2 ($P = 0.01$). Additionally, Group 4 experienced significantly more PEs than Groups 1 and 2 combined ($P < 0.01$). The relative risk of having a PE if BMI is >40, compared to a BMI <30, is 18.40 (95% confidence interval = 1.98-171.13). The PEs were not fatal in all cases.

Conclusion: In the treatment of the obese and morbidly obese with acetabular fractures, we find that these cohorts are not at a greater risk of wound complications or infection. The higher rate of PE in the morbidly obese should be considered when evaluating these patients for prophylaxis.