

The Effects of Body Mass Index on Postoperative Complications in Patients Undergoing Autologous Free Flap Breast Reconstruction

ABSTRACT

Background: The prevalence of obesity in the US exceeds 40%, yet perioperative effects of higher BMI in autologous breast reconstruction remain poorly studied. The purpose of this study was to investigate BMI's impact on post-op complications in abdominal and gluteal-based autologous breast reconstruction.

Methods: We conducted a retrospective study using TriNetX, a healthcare database containing deidentified data from more than 250 million patients. Patients undergoing autologous breast reconstruction were identified by CPT codes. Four cohorts were established by BMI class: < 24.99 kg/m², 25-29.99 kg/m², 30-34.99 kg/m², and 35-39.99 kg/m². Outcomes of interest were defined by ICD-10 codes. A logistic regression analysis was performed to determine the association between BMI class and postoperative complications within three months of surgery. Patients with a BMI < 24.99 kg/m² served as the control. Cohorts were balanced on age, race, and ethnicity.

Results: We identified 8,791 patients who underwent autologous breast reconstruction. Of those, 1,144 had a BMI < 24.99 kg/m², 1,865 had a BMI of 25-29.99 kg/m², 1,400 had a BMI of 30-34.99 kg/m², and 559 had a BMI of 35-39.99 kg/m². Patients with a BMI of 25-29.99 kg/m² had a significantly increased risk of surgical site infection, need for debridement, and incisional bulge. Patients with a BMI of 30-34.99 kg/m² had a significantly increased risk of cellulitis,

surgical site infection, need for debridement, wound dehiscence, incisional bulge, and flap failure. Patients with a BMI of 35-39.99 kg/m² had a significantly increased risk of cellulitis, surgical site infection, need for debridement, wound dehiscence, and flap failure.