No Difference In Revision Rates Up To 10 Years Following Total Hip Arthroplasty In Patients With Prior Bariatric Surgery When Compared To Patients With Class III Obesity: A Propensity Matched Analysis

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INTRODUCTION:
There is no clear research showcasing bariatric surgery's impact on long-term surgical complications following THA. Therefore, this study compared the 10-year cumulative incidence and risk of revision following THA in patients who underwent bariatric surgery when compared to the general population and class III obesity patients who did not undergo bariatric surgery.

METHODS:
Patients who underwent elective THA from 2010-2021 were identified using the PearlDiver database. Patients who underwent bariatric surgery prior to THA were separately matched to a control of the general population and those with class III obesity (BMI ≥40) by age, gender, Charlson Comorbidity Index (CCI), and diabetes using a 1:4 ratio. Kaplain-Meier analysis generated 10-year cumulative incidence rates and a Cox proportional hazard ratio model generated hazard ratios and 95% confidence intervals.

RESULTS:
When compared to the general control, patients with a history of bariatric surgery had an elevated 10-year risk of all-cause revision (HR 1.31, 95% CI: 1.16-1.47, p<0.001), periprosthetic joint infection (HR: 1.62, CI: 1.30-2.04; p<0.001), mechanical loosening (HR: 1.20, CI: 1.01-1.44; p=0.040), and dislocation/instability (HR: 1.35, CI: 1.09-1.68; p=0.007). There was no difference in the 10-year risk of all-cause revision or other indications for revision in the bariatric surgery cohort compared to the matched class III obesity cohort (p=0.142).

DISCUSSION:
Those who underwent bariatric surgery before THA had comparable 10-year revision rates when compared to those with class III obesity and higher rates compared to the general population. This suggests bariatric surgery may not reduce the long-term surgical risks associated with obesity when compared to a class III obese surgical population.

SIGNIFICANCE/CLINICAL RELEVANCE:
As orthopedic surgeons continue to minimize postoperative complications in total hip arthroscopy, managing risk associated with class III obesity remains controversial. Even though bariatric surgery is highly effective in reducing patient BMI, our analysis reveals no difference in risk between class III obese patients who have not undergone bariatric surgery to those who have. The data presented here do not support the routine use of bariatric surgery with the goal of reducing complications after THA, though certainly other factors may drive patients in favor of electing to undergo bariatric surgery. Given BMI remains an independent risk factor for perioperative and postoperative complications, interventions beyond surgical weight loss might warrant further exploration.