The Effect of Obesity and Morbid Obesity on 5-Year Surgical Complications following Anatomic Total Shoulder Arthroplasty and Reverse Total Shoulder Arthroplasty

Amil Raj Agarwal, Kevin Wang, Meghana Jami, Amy Li Xu, Monica Stadecker, Matthew Joseph Best¹, Umashanth Srikumaran

¹Johns Hopkins University

INTRODUCTION:
Although obesity has been shown to increase risk of short-term medical complications following total shoulder arthroplasty (TSA), evidence is lacking on the influence of different levels of obesity on longer-term surgical complications such as rates of reoperation and revision. The purpose of this study was to assess 2-year and 5-year all-cause revision, periprosthetic joint infection (PJI), aseptic loosening, and manipulation under anesthesia (MUA) between patients of varying degrees of obesity undergoing reverse TSA (RTSA) and anatomic TSA (ATSA).

METHODS:
Patients who underwent RTSA or ATSA with a minimum five-year follow up were identified in a national claims database using ICD9/10 procedure codes. Obese (BMI ≥ 30) and morbidly obese (BMI ≥ 40) patients were separately matched to the control cohort (18.5 ≤ BMI < 30) based on age, Charlson Comorbidity Index (CCI), and smoking status. Differences in rates of all-cause revision, PJI, aseptic loosening, and MUA within 2 or 5 years of surgery were determined with univariate analysis.

RESULTS:
Patients were appropriately matched (Tables 3-4). After matching, neither obese nor morbidly obese patients undergoing RTSA had increased risk of 2-year or 5-year revision, PJI, aseptic loosening, or MUA compared to non-obese patients undergoing RTSA (all p-values >0.5; Figures 1-2; Table 5). After matching, neither obese nor morbidly obese patients undergoing ATSA had increased risk of 2-year or 5-year revision, PJI, aseptic loosening, or MUA compared to non-obese patients undergoing ATSA (all p-values >0.5; Figure 3-4; Table 6).

DISCUSSION AND CONCLUSION:
While obesity has been historically associated with an increased risk of short-term medical complications, obesity in the absence of other major comorbidities may not be a reason to delay shoulder replacement surgery as it is not linked with an increased risk of long-term surgical complications. This is important to consider when evaluating orthopaedic patients preoperatively.