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Bariatric Surgery Improves Outcomes after Lower Extremity Arthroplasty in the Morbidly Obese: A Propensity Score-Matched Study

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Introduction: The purpose of this study was to compare risks for revision and short-term complications after total joint arthroplasty (TJA) in matched cohorts of morbidly obese patients, receiving and not receiving prior bariatric surgery.

Methods: Patients undergoing elective TJA between 1997 and 2011 were identified in a New York Statewide database. Total knee arthroplasty (TKA) and total hip arthroplasty (THA) were analyzed separately. To reduce confounding, propensity scores were used to match morbidly obese patients having received bariatric surgery prior to TJA to morbidly obese patients never receiving bariatric surgery. A propensity score was defined as the conditional probability of receiving bariatric surgery, based on age, year in which TJA was performed, laterality, sex, payer, region, and Elixhauser comorbidities. Cox proportional hazard modeling assessed revision risk. Logistic regression evaluated odds for short-term complications. Significance was set at p<0.05.

Results: For TKA, 2,636 patients who received prior bariatric surgery were matched to 2,636 morbidly obese patients who did not; 792 THA patients who received prior bariatric surgery were matched to 792 morbidly obese patients who did not. Matching balanced all covariates. Bariatric surgery lowered the comorbidity burden prior to TJA (TKA p<0.0001; THA p<0.005). Risks for inhospital complications were lower for THA and TKA patients receiving bariatric surgery prior to TJA (odds ratio [OR]=0.25, p<0.001; and OR=0.69, p=0.021, respectively). Risks for 90-day complications were lower for TKA (OR =0.61, p=0.002). Revision risks were not different for either THA (p=0.634) or TKA (p=0.431), nor was THA dislocation risk (p=1.000).

Conclusions: After matching that accounted for selection biases related to bariatric surgery, bariatric surgery prior to TJA in morbidly obese patients was associated with reduced comorbidity burden at the time of TJA and with reduced post-TJA complications. However, bariatric surgery did not reduce the risk for revision surgery for either TKA or THA.

