

Malnutrition Increases With Obesity and Is a Stronger Independent Risk Factor for Postoperative Complications: A Propensity-Adjusted Analysis of Total Hip Arthroplasty Patients.

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Abstract

BACKGROUND:

Obesity is frequently associated with complications after total hip arthroplasty (THA) and is often concomitant with malnutrition. The purpose of this study was to investigate the independent morbidity risk of malnutrition relative to obesity.

METHODS:

The National Surgical Quality Improvement Program from 2005 to 2013 was queried for elective primary THA cases. Malnutrition was defined as albumin <3.5 g/dL. Propensity scores for having preoperative albumin data were determined from demographics, body mass index, and overall comorbidity burden. Patients were classified as nonobese (body mass index 18.5-29.9), obese I (30-34.9), obese II (35-39.9), or obese III (≥40). Complications were compared across nutritional and obesity classes. Multivariable propensity-adjusted logistic regressions were used to examine associations between obesity and malnutrition with 30-day outcomes.

RESULTS:

A total of 40,653 THA cases were identified, of which 20,210 (49.7%) had preoperative albumin measurements. Propensity score adjustment successfully reduced potential selection bias, with $P > .05$ for differences between those with and without albumin data. Malnutrition incidence increased from 2.8% in obese I to 5.7% in obese III patients. With multivariable propensity-adjusted logistic regression, malnutrition was a more robust predictor than any obesity class for any postoperative complication(s) (odds ratio [OR] 1.61, 95% confidence interval [CI] 1.25-2.08), major complications (OR 1.63, 95% CI 1.21-2.19), respiratory complications (OR 2.35, 95% CI 1.27-4.37), blood transfusions (OR 1.71, 95% CI 1.44-2.03), and extended length of stay (OR 1.35, 95% CI 1.14-1.59).

CONCLUSION:

Malnutrition incidence increased significantly from obese I to obese III patients and was a stronger and more consistent predictor than obesity of complications after THA.