Outcomes of THA versus ORIF for Acetabular Fractures in Older Adults

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INTRODUCTION:
The population of older adults is growing in the United States. With increasing age, there is a higher risk of osteoporosis and fractures, including acetabular fractures. The purpose of this study was to compare outcomes of total hip arthroplasty (THA) versus open reduction internal fixation (ORIF) for acetabular fractures in older adults using a large national database.
METHODS:
This retrospective cohort study with the Medicare Limited Data Set included fee-for-service Medicare beneficiaries aged 65+ who had undergone either inpatient ORIF or THA for an acetabular fracture (without an associated femoral fracture) in January 2016-December 2020. Sociodemographic and clinical covariates and outcomes were extracted. To minimize confounding, propensity-score matching was used, matching 1 THA patient with up to 2 ORIF patients based on sociodemographic variables, comorbidities, and surgery year. Multivariable logistic regression models were used to identify adjusted associations between surgery type and outcomes; odds ratios (ORs) or adjusted mean differences with 95% confidence intervals (CI) are reported.
RESULTS:
A total of 4,852 eligible cases were identified with the matched cohort including 1,383 patients (65.1% ORIF, median age 78 [IQR 72-85], 34.9% male; 34.9% THA, median age 79 [IQR 72-86], 32.1% male). Compared to ORIF, patients undergoing THA had a shorter adjusted mean length of stay (-0.81 days; 95% CI -1.36 to -0.26, P=0.004). They had increased odds of 30-day hospital returns (OR=1.58, 95% CI 1.21-2.05, P=0.001) but not 90-day hospital returns (OR=1.19, 95% CI 0.94-1.50, P=0.14). Patients undergoing THA had higher odds of 90-day and 1-year surgical site or periprosthetic/implant infection (90-day: OR=2.41, 95% CI 1.55-3.76, P<0.001; 1-year: OR=1.92, 95% CI 1.31-2.83, P=0.001). Undergoing THA versus ORIF was also associated with higher odds of 90-day reoperation (OR=2.68, 95% CI 1.65-4.35, P<0.001) but not 1-year reoperation (OR=0.83, 95% CI 0.59-1.17, P=0.29). There were no significant associations between procedure type and discharge disposition (P=0.36), use of 90-day home health services (P=0.10), 90-day venous thromboembolism (P=0.10), or 1-year mortality (P=0.77).
DISCUSSION AND CONCLUSION:
Patients undergoing THA (versus ORIF) for acetabular fractures were more likely to have a shorter length of stay but were also more likely to return to the hospital within 30 days post-surgery for readmission, observation, or emergency department services; have an infection in the year after surgery; and undergo a reoperation in the 90 day postoperative period. Further investigation of the mechanisms of the observed associations as well as additional patient-centered outcomes is necessary to understand which surgical approach provides optimal outcomes for specific groups post-acetabular fracture in order to guide clinician decision making.