Higher Rates of Readmission Following Acute Total Hip Arthroplasty Versus Open Reduction and Internal Fixation for Elderly Acetabular Fractures: A National Study from 2010 to 2019

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Purpose: We aim to evaluate health-care utilization metrics, complications, readmissions, and reoperations following open reduction and interval fixation (ORIF) versus acute total hip arthroplasty (THA) for elderly acetabular fractures using a nationally representative cohort.

Methods: The National Inpatient Sample (NIS) and National Readmission Database (NRD) were queried from 2010 to 2019 to identify patients age 60 years or older sustaining acetabular fractures undergoing ORIF, THA, or both. Multivariate regression was used to evaluate differences in THA utilization, costs, length of stay (LOS), and discharge destination. Propensity score matching was used to evaluate differences in index hospitalization complications, readmissions, and revision surgery at 30, 90 and 180 days. Patients treated with both ORIF and THA were analyzed as THA patients.

Results: A total of 12,538 surgically managed acetabular fractures in elderly patients occurred nationally between 2010 and 2019, with 10,008 (79.8%) undergoing ORIF, 1412 (11.3%) undergoing THA, and 1117 (8.9%) undergoing both. The proportion undergoing acute THA (20.2%) did not change over time (P = 0.75). On multivariate analysis, LOS was 1.7 days shorter P<0.001) and probability of non-home discharge was reduced (odds ratio [OR] 0.68, P = 0.009) for THA patients versus ORIF patients. There was no difference in hospital costs. On matched analysis, THA was associated with lower rates of pneumonia (4.6 vs 9.1%, P<0.001) and other respiratory complications (10.2 vs 17.6%) versus ORIF. At 30 days, THA patients had higher rates of readmission (13.9 vs 10.1%, P = 0.007), related readmission (5.4 vs 1.2%, P<0.001), readmission for dislocation (3.1 vs 0.3%, P<0.001), and reoperations (2.9 vs 0.9%, P = 0.002). At 90 days, THA patients had higher rates of readmission (24.3% vs 18.2%, P = 0.002), related readmission (8.4% vs 2.8%, P<0.001), and readmission for dislocation (4.7% vs 0.7%, P<0.001). At 180 days, THA patients had higher rates of related readmission (10.1% vs 3.9%, P<0.001), readmission for dislocation (5.1% vs 1.3%, P<0.001), and readmission for surgical-site infection (3.4 vs 0.8%, P = 0.005). Reoperation rates were similar at 90 and 180 days. There were no differences in mortality at any time point.

Conclusion: In the treatment of elderly acetabular fractures, acute THA is associated with lower length of stay and certain index hospitalization complications, but higher rates of readmissions for related reasons and specifically for dislocation. While acute THA may reduce rates of secondary surgery in the long term by obviating conversion THA, patients may experience higher readmission rates than those undergoing ORIF.