Acute Total Hip Arthroplasty (THA) for Elderly Acetabular Fractures: A Comparative Analysis to THA for Femoral Neck Fractures and Hip Osteoarthritis

Manasa L. Kadiyala, MD*; Lauren A. Merrell, BA; Abhishek Ganta, MD; Vinay Aggarwal, MD; Kenneth A. Egol, MD; Sanjit R. Konda, MD*

Purpose: We sought to compare 1-year outcomes in acute total hip arthroplasty (THA) for elderly acetabular fractures (AT) to those in THA for femoral neck fractures (FN) and hip osteoarthritis (OA)

Methods: An IRB-approved registry was used to compare 3 cohorts with minimum 1-year follow-up at an academic medical center. 15 patients >55 years old with acetabular fractures who underwent acute THA were identified. The AT cohort was propensity-matched at a minimum 3:1 ratio to FN and OA cohorts that underwent a THA. All patients underwent a posterior approach for THA. Patient demographics, injury details, perioperative parameters, complications, and functional outcomes were recorded. The Functional Ambulation Classification (FAC) was used to evaluate independent ambulatory ability. Comparative analyses were performed using analysis of variance and $\chi 2$ tests.

Results: 118 patients with mean age 70.76 ± 9.37 years and average follow-up of 22.56 ± 19.68 months were identified. The OA cohort had a higher body mass index ($P = 0.040$), lower rate of diabetes ($P = 0.027$), and higher preoperative assistive device use ($P<0.001$). The AT cohort had a longer operative time ($P<0.001$), larger intraoperative blood loss ($P<0.001$), and greater need for transfusion ($P<0.001$). The AT cohort had a longer hospital stay ($P<0.001$), experienced higher rates of major and minor medical complications ($P = 0.016$, $P = 0.011$), ambulated less on discharge ($P<0.001$), and was less likely to be discharged home ($P<0.001$). The primary OA cohort had better functional outcomes at all postoperative time points up to 1 year. There were no differences in readmission or mortality rates among the 3 cohorts.

Conclusion: Acute THA for elderly acetabular fractures had worse 1-year functional outcomes and higher postoperative complication rates compared to THA for femoral neck fractures and primary osteoarthritis. This may be due to the complexity of acetabular fractures with other associated injuries and the urgency of the repair in an often complicated and unstable patient.