

Outcomes in Arthroplasty Procedures Performed for Femoral Neck Fractures: Does Approach Affect Outcome?

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Purpose: Surgical approach used for arthroplasty in the setting of hip fracture has traditionally been decided based on surgeon preference. While there is literature to support improved short-term outcomes in patients undergoing elective total hip arthroplasty procedures using an anterior approach, 1-year outcomes remain similar between approach types. There is limited analysis of the effect of surgical approach for fracture arthroplasty procedures. This study analyzed the effect of surgical approach on hospital quality measures, complications, and mortality in patients treated with hip arthroplasty for fracture fixation.

Methods: A cohort of consecutive acute hip fracture patients ≥ 55 years who underwent hemiarthroplasty (HA) or total hip arthroplasty (THA) at 1 academic medical center between January 2014 and January 2018 was included. Patient demographics, length of stay (LOS), surgery details, inpatient complications, ambulation at discharge, discharge location, readmission, and mortality were recorded. Surgical approach was divided into 2 cohorts, anterior and posterior. Anterior cohort included anterior and anterolateral approaches; posterior cohort included direct lateral and posterior approaches. Outcomes were compared between the 2 approach cohorts using $P < 0.05$ as significant.

Results: 215 patients were included in this study; 142 underwent HA (76 anterior and 66 posterior) and 73 underwent THA (33 anterior and 40 posterior). The mean age of the HA and THA cohorts were 83.9 ± 7.9 and 74.3 ± 8.2 years, respectively, and the majority of patients were female (67.6% HA and 80.8% THA). There was no difference in age, American Society of Anesthesiologists (ASA) class, Charlson comorbidity index (CCI), anesthesia type, or cement use between the approach cohorts for both HA and THA. Regarding hospital quality measures, there was no difference in LOS, time to surgery, or surgical time between the 2 cohorts for both HA and THA. Acute anemia was the most common complication (38.2% anterior HA vs 37.9% posterior HA, $P = 0.973$; 27.3% anterior THA vs 42.5% posterior THA, $P = 0.176$). There were no differences in perioperative complications including dislocation observed based on surgical approach in both the HA or THA cohort. There was also no difference in ambulation distance at discharge or percentage of home discharge between the approach cohorts. No difference was found between readmission rates (30- and 90-day) and mortality (30-day and 1-year).

Conclusion: In this cohort of hip fracture arthroplasty patients, there was no difference observed in hospital quality measures, readmission, or mortality in patients based on surgical approach. These results are in contrast to literature in elective arthroplasty patients supporting the use of direct anterior approach for potential improved short-term outcomes.