Direct Anterior Persus Posterior Approach for Total Hip Arthroplasty Performed for Displaced Femoral Neck Fractures

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Purpose: Total hip arthroplasty (THA) is becoming increasingly utilized for displaced femoral neck fractures (FNFs) in the elderly. While surgical approaches have been extensively compared in the elective population, few studies have compared approaches in the fracture population. The purpose of this study is to compare perioperative, 90-day, and 1-year postoperative complications and outcomes between the direct anterior approach (DAA) and posterior approach (PA) for THA in geriatric patients with FNF.

Methods: A retrospective cohort study was performed on patients aged ≥60 years who underwent either DAA or PA THA for FNF between 2009 and 2021 in 1 of 20 Northern California Kaiser Permanente hospitals. Data were obtained from the Kaiser Permanente Hip Fracture Registry and chart review of patient electronic health records. The primary outcome measures in this study were rates of postoperative complications at 90 days and 1 year postoperatively. Secondary outcome measures included ambulation capacity at discharge, ambulation distance with physical therapy on day of discharge, discharge disposition, and narcotic prescription quantities. Multivariable logistic and linear regressions were performed to assess the association of all end points between cohorts. Covariates that approached significance in imbalance were controlled for, including tranexamic acid (TXA) administration, use of cemented femoral stem, time to surgery, pulmonary vascular disease, peripheral vascular disease, lymphoma, preoperative weight loss, and procedure year.

Results: Of the 709 patients included, 441 (62.2%) and 268 (37.8%) underwent PA and DAA, respectively. An increasing trend of DAA utilization was observed within our health-care consortium. Through a multivariable regression analysis, DAA was associated with significantly shorter operative time (Coefficient [B] = –6.89; 95% confidence interval [CI], –12.84 to–0.93; P = 0.024), lower likelihood of blood transfusion during the index hospital stay (adjusted odds ratio [aOR] = 0.54; 95% CI, 0.27 to 0.96; P = 0.045), and decreased average narcotic prescription amounts at 90 days (B = –230.45; 95% CI, –440.24 to –78.66; P = 0.035) postoperatively. There were no significant differences in medical complications, dislocations, reoperations, and mortality at 90 days and 1 year postoperatively.

Conclusion: When comparing DAA versus PA for THA for FNF, there were no observed differences in medical complications, dislocations, reoperations, and mortality up to 1 year postoperatively. However, DAA was associated with shorter operative time, a lower likelihood of blood transfusion, and lower 90-day postoperative narcotic prescription amounts.