

Surgical Approach Impacts Patient Reported Symptoms Following Arthroplasty for Femoral Neck Fractures

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INTRODUCTION:

We aimed to examine outcomes between displaced femoral neck fracture (FNF) patients managed with total hip arthroplasty (THA) or hemi-arthroplasty (HA) via the anterolateral vs. posterior approach.

METHODS:

We used data from the HEALTH trial (1,441 patients aged ≥ 50 with displaced FNFs randomized to THA vs. HA). We calculated each patient's propensity to undergo arthroplasty via the posterior approach, and matched them to 1 control (anterolateral approach) based on age (± 5 years), and propensity score. We used Chi-Square/Fisher-Exact tests to compare dichotomous outcomes, and repeated measures ANOVA to examine differences in patient-reported outcomes (via the WOMAC subscores) from baseline to one-year postoperative. We used logistic regression to identify independent predictors of reoperation for instability in the posterior group.

RESULTS:

We identified 1,306 patients for this sub-analysis, 876 (67.1%) who received arthroplasty via an anterolateral approach, and 430 (32.9%) via a posterior approach. The unadjusted rate of reoperation was significantly higher in the posterior group (11.1% vs. 7.1%).

Following propensity score matching, we retained 790 patients (395 per group), with no between-group differences in patient, fracture, or implant characteristics. The matched cohort had a higher rate of comorbidities, and were less likely to be employed vs. the unmatched cohort. The rate of treatment for dislocation remained higher in the posterior group (6.1% vs. 2.0%) following matching.

Repeated measures ANOVA revealed significantly better WOMAC pain, stiffness, function, and total scores in the posterior group. Between-group differences at 12-months were: pain - 0.59 (0.03-1.15); stiffness - 0.62 (0.35-0.87); function - 2.99 (0.12-5.86); total - 3.90 (0.24-7.56). We identified THA (vs. HA, odds ratio 2.05 [1.05-4.01]) as the only independent predictor of treatment for dislocation in the posterior group.

DISCUSSION AND CONCLUSION:

Our analyses revealed that patients with displaced FNFs who undergo arthroplasty via the posterior approach may report better symptoms at one-year vs. the anterolateral approach, despite a higher odds of reoperation for instability.