Total Hip Arthroplasty Learning Curves for New Fellowship-trained Surgeons

Messina JC¹, Magnuson JA², Griffin SA², Courtney PM², Krueger CA², Grosso MJ³

¹Department of Orthopedic Surgery, UConn Health  
²Rothman Institute at Thomas Jefferson University Hospital  
³Connecticut Joint Replacement Institute

INTRODUCTION

• The posterolateral (PL) approach is the most utilized approach for total hip arthroplasty (THA).

• The direct anterior (DA) approach has been gaining popularity, but there is concern that the DA approach is associated with a steeper learning curve than that of the PL approach.

• The purpose of this study was to investigate if the learning curve is similar for newly trained arthroplasty fellowship-trained surgeons using the DA vs PL approaches.

METHODS

• Two recently graduated DA and two recently graduated PL fellowship-trained arthroplasty surgeons were identified.

• Their first 100 primary THA cases in practice were collected and divided into 50 case cohorts for each surgeon.

• Age, sex, and BMI were collected for each patient along with the primary indication for surgery.

• Medical records were reviewed to determine 90-day Hip Society Standardized complications following surgery.

• Continuous variables were analyzed using independent sample t tests. Categorical variables were analyzed using chi-square tests or Fisher’s exact tests.

RESULTS

• When comparing the DA vs PL surgeons first 50 cases, there were no significant differences in reoperations (PL 4% vs DA 1%, p=0.15), surgical complications (IPL 9% vs DA 4%, p=0.06), and total complications (PL 13% vs DA 7%, p=0.09).

• Both the PA and DA groups, had lower reoperation rates, surgical complications, and total complications when comparing the first 50 versus second 50 cases.

• For all surgeons combined, there were higher complications rates when comparing the first 50 cases to the second 50 cases for reoperations (2.8% vs 1.2%, p=0.2), surgical complications (6.6% vs 3%, p=0.036), and total complications (10% vs 6.3%, p=0.06).

CONCLUSION

• This study suggests a learning curve for all THA surgeons during their first 50 cases in practice.

• There were no differences in the learning curve when comparing the DA and PL approach for fellowship-trained arthroplasty surgeons.

• With proper training, early-career surgeons can safely perform THA with similar complication rates regardless of approach.

DISCLOSURES

• These authors do not have a financial interest or other relationship with a commercial company or institution.

REFERENCES


