1-2020

Is facet joint distraction a cause of postoperative axial neck pain after ACDF surgery?

Nathan Houlihan
Thomas Jefferson University, nathan.houlihan@jefferson.edu

Srikanth N. Divi, MD
Thomas Jefferson University, srikanth.divi@jefferson.edu

Dhruv K.C. Goyal
Thomas Jefferson University, dhruv.goyal@jefferson.edu

John J. Mangan, MD
Thomas Jefferson University, john.mangan@jefferson.edu

Justin D. Stull, MD
Thomas Jefferson University, justin.stull@jefferson.edu

See next page for additional authors

Authors

Nathan Houlihan; Srikanth N. Divi, MD; Dhruv K.C. Goyal; John J. Mangan, MD; Justin D. Stull, MD; Matthew S. Galetta; Jeffrey A. Rihn; Mark F. Kurd, MD; D. Greg Anderson, MD; Alan S. Hilibrand, MD; Alexander R. Vaccaro, MD, PhD, MBA; Christopher K. Kepler, MD, MBA; Gregory D. Schroeder, MD; and Joseph K. Lee, MD

Is facet joint distraction a cause of postoperative axial neck pain after ACDF surgery?

Nathan Houlihan BS, Srikanth N Divi MD, Dhruv KC Goyal BA, John J Mangan MD, Justin D Stull MD, Matthew S Galetta BA, Jeffrey A Rihn MD, Mark F Kurd MD, D Greg Anderson MD, Alan S Hilibrand MD, Alex R Vaccaro MD PhD MBA*, Christopher K Kepler MD MBA, Gregory D Schroeder MD, Joseph K Lee MD

Introduction

Intervertebral distraction in anterior cervical discectomy and fusion (ACDF) has been postulated to injure the degenerative facet joints posteriorly and increase postoperative pain and disability. This study aims to determine if there is a correlation between the amount of facet distraction and postoperative patient reported outcomes.

Methods

A retrospective cohort analysis of patients undergoing ACDF for degenerative pathologies was performed. Each patient received lateral cervical spine x-rays at the immediate postoperative time point and were split into groups based on the amount of facet distraction measured on these films: Group A: < 1.5 mm; Group B: 1.5-2.0 mm; and Group C: > 2.0 mm. Patients reported outcome measures were obtained preoperatively and at 1-year postoperatively. Univariate and multivariate analyses were performed to compare outcomes between groups.

Results

A total of 229 patients were included with an average follow-up of 19.8 [19.0, 20.7] months with a mean facet joint distraction of 1.7mm. There were 87 patients in Group A, 76 patients in Group B, and 66 patients in Group C. Patients significantly improved across all outcome measures from baseline to postoperatively ($p < 0.05$). There was no difference between groups at any time point with respect to outcome scores ($p > 0.05$). Multiple regression analysis did not identify increasing distraction as a predictor of patient outcomes.

Conclusions

There were no significant differences between patient outcomes and the amount of facet distraction after ACDF surgery. Multivariate analysis did not find a correlation between facet distraction and overall HRQOL outcome.