

Thomas Jefferson University  
Jefferson Digital Commons

Phase 1

Class of 2022

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](mailto:nathan.houlihan@jefferson.edu)

Srikanth N. Divi, MD

Thomas Jefferson University, [srikanth.divi@jefferson.edu](mailto:srikanth.divi@jefferson.edu)


Dhruv K.C. Goyal

Thomas Jefferson University, [dhruv.goyal@jefferson.edu](mailto:dhruv.goyal@jefferson.edu)

John J. Mangan, MD

Follow this and additional works at: [https://jdc.jefferson.edu/si\\_ctr\\_2022\\_phase1](https://jdc.jefferson.edu/si_ctr_2022_phase1)

Thomas Jefferson University, [john.mangan@jefferson.edu](mailto:john.mangan@jefferson.edu)

 Part of the [Orthopedics Commons](#), [Surgery Commons](#), and the [Translational Medical Research Commons](#)

Justin D. Stull, MD

Thomas Jefferson University, [justin.stull@jefferson.edu](mailto:justin.stull@jefferson.edu)

[Let us know how access to this document benefits you](#)

See next page for additional authors

### Recommended Citation

Houlihan, Nathan; Divi, MD, Srikanth N.; Goyal, Dhruv K.C.; Mangan, MD, John J.; Stull, MD, Justin D.; Galetta, Matthew S.; Rihn, Jeffrey A.; Kurd, MD, Mark F.; Anderson, MD, D. Greg; Hilibrand, MD, Alan S.; Vaccaro, MD, PhD, MBA, Alexander R.; Kepler, MD, MBA, Christopher K.; Schroeder, MD, Gregory D.; and Lee, MD, Joseph K., "Is facet joint distraction a cause of postoperative axial neck pain after ACDF surgery?" (2020). *Phase 1*. Paper 54.

[https://jdc.jefferson.edu/si\\_ctr\\_2022\\_phase1/54](https://jdc.jefferson.edu/si_ctr_2022_phase1/54)

This Article is brought to you for free and open access by the Jefferson Digital Commons. The Jefferson Digital Commons is a service of Thomas Jefferson University's [Center for Teaching and Learning \(CTL\)](#). The Commons is a showcase for Jefferson books and journals, peer-reviewed scholarly publications, unique historical collections from the University archives, and teaching tools. The Jefferson Digital Commons allows researchers and interested readers anywhere in the world to learn about and keep up to date with Jefferson scholarship. This article has been accepted for inclusion in Phase 1 by an authorized administrator of the Jefferson Digital Commons. For more information, please contact: [JeffersonDigitalCommons@jefferson.edu](mailto:JeffersonDigitalCommons@jefferson.edu).

---

## 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.