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Headache Relief is Maintained 7 years after Anterior Cervical Spine Surgery: Post Hoc Analysis from Multicenter Randomized Clinical Trial and Cervicogenic Headache Hypothesis

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Introduction

Headache is often associated with cervical degenerative disease. Previous studies have shown that cervical spine surgery leads to CGH improvement. But no studies have shown whether the headache improvement is durable out to 7 years after surgery.

Methods

We performed a 7-year follow up of a prospective randomized trial involving a total of 575 patients, who underwent CDA or ACDF for one or two levels of cervical spine C3-7 levels. Mean headache scores of these two patient groups at preoperative and postoperative time points were compared with 84-month headache scores, stratified by one level and two-level operations, using Wilcoxin signed rank tests and two tailed t tests.

Results

Both one and two level CDA and ACDF led to improvement in headache that was durable out to 84 months ($p<0.0001$). Similar headache improvement was maintained out to 7 years for both CDA and ACDF patients for one level surgery. For two-level operations, however, mean headache score was significantly higher in ACDF at 84 months, compared to CDA ($p=0.041$).

Conclusions

The headache improvement noted at early follow-up continues over further long -term period in all patients, with greater benefit in two level CDA compared to ACDF patients at 7 years. Headache relief is maintained for both groups with the CDA patients have greater benefit compared to ACDF patients. Improved CSF flow and cervical kinematics after disc replacement with preservation of range of motion may play a role in greater headache improvement.

Learning Objectives

1) To understand the characteristics, pathophysiology and treatment of cervicogenic headaches.

2) To understand the outcomes of anterior cervical approach in treating headache originating from cervical spondylosis in relation to other options.

References

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