

**Lower cervical disc prolapse may cause cervicogenic headache:
Prospective study in patients undergoing surgery**

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HC Diener, M Kaminski, G Stappert, D Stolke, B Schoch

FROM ABSTRACT

In 1983 Sjaastad published for the first time diagnostic criteria for cervicogenic headache.

Until now there have been no prospective studies investigating whether cervical disc prolapse can cause cervicogenic headache.

50 patients with cervical disc prolapse proven by computed tomography, myelography or magnetic resonance imaging were recruited and prospectively followed for 3 months. Patients were asked at different time points about headache and neck pain by questionnaires and structured interviews. These data were collected prior to and 7 and 90 days after surgery for the disc prolapse. Fifty patients with lumbar disc prolapse, matched for age and sex, undergoing surgery were recruited as controls. Headache and neck pain were diagnosed according to International Headache Society (IHS) criteria.

Twelve of 50 patients [24%] with cervical disc prolapse reported new headache and neck pain. Seven patients (58%) fulfilled the 2004 IHS criteria for cervicogenic headache.

Two of 50 patients with lumbar disc prolapse had new headaches.

Their headaches did not fulfill the criteria for cervicogenic headache.

One week after surgery, 8/12 patients with cervical disc prolapse and headache reported to be pain free. One patient was improved and three were unchanged.

Three months after cervical prolapse surgery, seven patients were pain free, three improved and two unchanged.

This prospective study shows an association of lower cervical prolapse with cervicogenic headache: headache and neck pain improves or disappears in 80% of patients after surgery for the cervical disc prolapse.

These results indicate that pain afferents from the lower cervical roots can converge on the cervical trigeminal nucleus and the nucleus caudalis.

THESE AUTHORS ALSO NOTE:

"The term 'cervicogenic headache' was introduced by Sjaastad in 1983"
[Sjaastad O. Cervicogenic headache. A hypothesis. Cephalalgia 1983; 3:249–56.]

The most important features of cervicogenic headache are pain originating from the neck and radiating to the head, provocation by neck movements or postures, and pathology of the cervical spine.

The prevalence of cervicogenic headache might be as high as 4.6% of the population.

"There is no doubt that pathology of the neck structures such as cervical spine, muscles and tendons can cause neck pain."

In this study, the mean age of the patients was 48 years (range 32–72 years); 40% were women and 60% men.

"In conclusion, new-onset neck pain and headache is more prevalent in patients with cervical disc prolapse compared with age- and sex-matched patients with lumbar disc prolapse."

Successful treatment of the prolapsed lower cervical disc results in a significant improvement of neck pain and headache.

DISCUSSION

This is the first prospective study to investigate the possible relationship between cervical disc prolapse below the level of C4 and cervicogenic headache.

Patients with lower cervical disc prolapse have significantly more frequent new-onset neck pain and headache and more frequent cervicogenic headache than controls.

Successful treatment of the lower cervical disc prolapse results in a significant reduction in the frequency of neck pain/headache and cervicogenic headache.

Cervicogenic headache caused by irritation or lesion of the C1–C3 roots is well documented.

There are anatomical connections between the C1-C3 roots and the cervical complex of the nucleus caudalis of the trigeminal nerve. This study indicates that the lower cervical roots also project into the trigeminal cervical complex in humans.

[Very Important]

This prospective study indicates that some patients with cervical root compression below the C4 level can cause cervicogenic headache.

KEY POINTS FROM DAN MURPHY

- 1) Cervicogenic headache was initially officially published in the literature [Cephalalgia] in 1983.
- 2) In this study, 24% of patients with cervical disc prolapse reported new headache and neck pain.
- 3) This prospective study shows an association of lower cervical disc prolapse with cervicogenic headache: headache and neck pain improves or disappears in 80% of patients after successful treatment of the cervical disc prolapse.
- 4) This study indicates that pain afferents from the lower cervical roots can converge on the cervical trigeminal nucleus and the nucleus caudalis.
- 5) The most important features of cervicogenic headache are pain originating from the neck and radiating to the head, provocation by neck movements or postures, and pathology of the cervical spine.
- 6) The prevalence of cervicogenic headache might be as high as 4.6% of the population.
- 7) "There is no doubt that pathology of the neck structures such as cervical spine, muscles and tendons can cause neck pain."
- 8) Successful treatment of the lower cervical disc prolapse results in a significant reduction in the frequency of neck pain/headache and cervicogenic headache.
- 9) This is the first prospective study to show a relationship between cervical disc prolapse below the level of C4 and cervicogenic headache. **[Important]**
- 10) Patients with lower cervical disc prolapse have significantly more frequent new-onset neck pain and headache and more frequent cervicogenic headache than controls.
- 11) Cervicogenic headache caused by irritation or lesion of the C1–C3 roots is well documented.
- 12) There are anatomical connections between C1-C3 roots and the cervical complex of the nucleus caudalis of the trigeminal nerve. This study indicates that the lower cervical roots also project into the trigeminal cervical complex in humans. **[Very Important]**
- 13) This prospective study indicates that some patients with cervical root compression below the C4 level can cause cervicogenic headache.