

# Expert Opinion

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## Transient Headache With Numbness of Half of the Tongue

*Case History Submitted by Randolph W. Evans, MD*

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**Key words:** tongue numbness, lingual nerve, proprioceptive fibers

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An unusual combination of symptoms prompted a neurological consultation for a teenager.

### CLINICAL HISTORY

This is a 15-year-old boy with a history of migraines since about aged 4. The migraines occur about once every 6 months and are described as a severe bifrontal throbbing associated with nausea, light and noise sensitivity, and sometimes vomiting but no aura. The headaches last about a half day, and he often goes to bed during the attack. Acetaminophen is of mild help.

For the last 6 months, he has developed a new type of headache, occurring approximately once every 2 weeks. These headaches are triggered by activity such as throwing a football hard, hitting an overhead ball in tennis, or chasing his dog around in a circle, but not by weightlifting or straining with a bowel movement. He describes a sharp pain in the mid nuchal-occipital region associated with numbness of the left side of the tongue, all lasting about 20 seconds.

Past medical history is negative except for congenital bilateral hearing loss. Family history is remarkable for migraines in his father and congenital hearing loss. Neurological examination is normal, except for profound hearing loss bilaterally. An MRI

scan of the brain shows a large retrocerebellar arachnoid cyst without hydrocephalus. The cerebellar tonsils are above the foramen magnum.

**Question.**—What is the cause of the transient episodes of nuchal-occipital pain and numbness of the left side of the tongue?

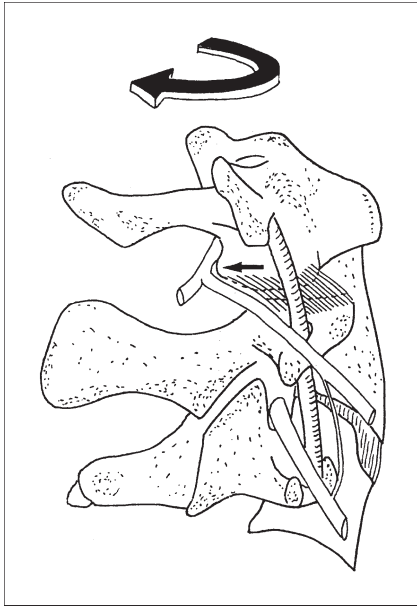
### EXPERT COMMENTARY

The association of occipital pain associated with numbness of half of the tongue on sudden head movement was described by my colleague Michael Anthony and myself in 1980 as the “neck-tongue syndrome.”<sup>1</sup> We were first at a loss to explain this association of symptoms. Looking into some of the older anatomical and physiological literature provided the answer. Proprioceptive fibers from the tongue leave the lingual nerve to travel in the hypoglossal nerve and then to the second cervical root (Figure). During rotation of the neck, the C2 central ramus is drawn over the atlantoaxial joint.<sup>2</sup>

Transient subluxation of the atlantoaxial joint can produce local pain by stretching the joint capsule and numbness of the tongue by stretching the C2 ventral ramus which contains proprioceptive fibers from the tongue. Other cases have since been described in normal subjects as well as in some with cervical spondylosis. In some reported cases, there has been a familial incidence suggesting that there may be a genetically determined laxity of ligaments or joint capsules. Some patients have been improved by cervical manipulation. The symptoms were improved in one patient with upper cervical disease by fusion of the C2-C3 level and improved in another patient by sec-

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**A lateral view of a right atlantoaxial joint in which the atlas has rotated to the right. Its inferior articular process impacts and stretches the C2 spinal nerve and ventral ramus (arrow). Reprinted with permission from *The Headaches*, 2nd ed. Copyright 2000, Lippincott Williams & Wilkins.**

tion of the second cervical spinal nerve. Our own patients have not been sufficiently disabled by their symptoms to warrant any intervention.

## REFERENCES

1. Lance JW, Anthony M. Neck-tongue syndrome on sudden turning of the head. *J Neurol Neurosurg Psychiatry*. 1980;43:97-101.
2. Lance JW, Goadsby PJ. Mechanism and Management of Headache. 6th ed. Oxford: Butterworth-Heinemann; 1998:271-272.