

## **Radiographic evaluation of trigeminal neurovascular compression in patients with and without trigeminal neuralgia.**

Journal of Neurosurgery, April 2009

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**OBJECT:** Neurovascular compression (NVC) of the trigeminal nerve is associated with trigeminal neuralgia (TN), but also occurs in many patients without facial pain. This study is designed to identify anatomical characteristics of NVC associated with TN. **METHODS:** Thirty patients with Type 1 TN (intermittent shocklike pain) and 15 patients without facial pain underwent imaging for analysis of 30 trigeminal nerves ipsilateral to TN symptoms, 30 contralateral to TN symptoms, and 30 in asymptomatic patients. Patients underwent 3-T MR imaging including balanced fast-field echo and MR angiography. Images were fused and reconstructed into virtual cisternography images that were evaluated to determine the presence and degree of NVC.

Reconstructed coronal images were used to measure nerve diameter and crosssectional area. **RESULTS:** The incidence of arterial NVC in asymptomatic nerves, nerves contralateral to TN symptoms, and nerves ipsilateral to TN symptoms was 17%, 43%, and 57%, respectively. The difference between symptomatic and asymptomatic nerves was significant regarding the presence of NVC, nerve distortion, and the site of compression ( $p < 0.001$ , Fisher exact test).

The most significant predictors of TN were compression of the proximal nerve (odds ratio 10.4) and nerve indentation or displacement (odds ratio 4.3). There was a tendency for the development of increasingly severe nerve compression with more advanced patient age across all groups. Decreased nerve size was observed in patients with TN but did not correlate with the presence or extent of NVC.

**CONCLUSIONS:** Trigeminal NVC occurs in asymptomatic patients but is more severe and more proximal in patients with TN. This information may help identify patients who are likely to benefit from microvascular decompression.

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**PURPOSE OF REVIEW:** Review current literature in the field of chronic nondental facial pain as recent clinical research findings need to be put into practise.

**RECENT FINDINGS:** The areas covered include epidemiology and risk factors for facial pain, management of temporomandibular disorders, burning mouth syndrome, atypical odontalgia and trigeminal neuralgia.

**SUMMARY:** There is an increasing awareness that facial pain is common and has similar risk factors to other chronic pain conditions. Some oral pain conditions are now being recognized as being probably neuropathic in origin rather than being due to psychological factors. A more biopsychosocial approach to management of these conditions is essential. The first international guidelines on management of trigeminal neuralgia have now been published and should help all clinicians seeing these patients.