



My tooth has a migraine?

Is there such an entity as a migrainous toothache? In other words, is there a primary neurovascular pain originating from the orofacial area? The occurrence of pain in the orofacial area secondary to a number of primary regional pains is well known. Pain referral patterns of primary headache entities often include facial and cervical structures. Amongst these, cluster headaches, other trigeminal autonomic cephalgias, and trigeminal neuralgia often refer intraorally and have well-documented evidence of misdiagnosis as dental pain. Ensuing treatment ultimately results in the loss of teeth and significant handicap to the patient. Similarly, some migraine patients report that during headaches, pain radiates to maxillary teeth. Pain may also radiate to the maxillary air sinuses, and indeed migraine is a common diagnosis in otolaryngology settings. The diagnostic process is not just an academic endeavor; the result dictates treatment options that we may then offer our patients.

As many orofacial pain practitioners and otolaryngologists will attest to, there is a challenging group of patients with unilateral, episodic, throbbing pain in the lower two thirds of the face that often wakes them in the early hours of the morning. Some of these patients suffer severe pain and may even complain of sensitivity to cold drinks in a number of teeth. Sounds like pulpitis, and many of these patients end up undergoing unnecessary dental interventions. Unnecessary, because there is no underlying oral pathology. The pain may alternate sides and be accompanied by mild migrainous features such as photo/phonophobia, nausea, and even regional autonomic activation (tearing, nasal stuffiness). Often patients report a history of migraines. Some present with pain over the maxillary air sinuses but no physical or radiographic findings supporting a diagnosis of sinusitis. In the absence of pathology, these signs and symptoms may indicate a primary neurovascular pain occurring intraorally or be associated with the mid- or lower facial regions. Some clinicians term these *facial migraines*, others *neurovascular orofacial pain*, *atypical odontalgia*, or *vascular odontalgia*; many ignore its existence to the detriment of their patients.

It should not surprise us that mechanisms underlying neurovascular headaches may be active in orofacial regions. These mechanisms include neurogenic inflammation in trigeminal nerve fibers and the initiation of the trigemino-parasympathetic reflex. The anatomical substrate for these phenomena is in place in the orofacial region and has been demonstrated experimentally. Neurogenic inflammation within the infraorbital canal, the inferior alveolar canal, or a tooth will lead to pain. Sensitization of perivascular fibers may well underlie the throbbing quality reported by most patients. Sensitivity to cold stimuli in the teeth or the facial skin to touch may

represent a logical parallel to the allodynia observed in migraine. Migraine patients often report pain on touching the facial skin or brushing their hair.

Why are we so reluctant to embrace this concept? No doubt a lack of extensive, worldwide data collection and publishing works against us. The important societies in the field have been similarly reluctant to tackle the issue. The International Headache Society does not classify migraines in aberrant locations in spite of these being described in articles and textbooks. The American Academy of Orofacial Pain also does not classify facial migraines or neurovascular toothaches. If we are to unequivocally establish the existence of primary neurovascular pain intraorally, we will need to present further data employing advanced functional imaging and compare these with studies on migraine and trigeminal autonomic cephalgias; no easy task.

But classification systems are slow to accept new entities, and medical professions are wary of rapidly accepting change—at times, rightly so. Cluster headache was originally considered a migraine variant; paroxysmal hemicrania was thought of as a cluster headache subtype; and shortlasting, unilateral, neuralgiform headache attacks with conjunctival injection and tearing (SUNCT), a trigeminal neuralgia offspring. Research and time have converted even the most devoted believers, and current classification systems have established independent criteria for each entity.

However, as clinicians in the field we are in a position to expand our “field of vision” and consider possible variants before they are formally integrated into classification systems—particularly if this is for the benefit of our patients. Next time you confront a case as described above, slow down and remember that a non-interventional diagnostic process may be the best thing we can do for some of our patients in pain.

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