



Non-odontogenic Sinonasal-induced Toothache; a Communication Bridge Between Dentistry and Otolaryngology

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Received: March 20, 2021

Published: March 23, 2021

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The common innervation by maxillary division V2 of the trigeminal nerve and anatomical proximity of maxillary teeth, maxillary sinuses and the anterior two-thirds of the nose can sometimes confuse clinicians from different disciplines for the correct diagnosis of pain etiology in these areas. More specifically, differentiation of odontogenic pain, particularly odontogenic pain associated with maxillary teeth, from the pain associated with maxillary sinus problems (such as sinusitis) and nasal cavity problems (such as nasal vestibulitis) is sometimes misinterpreted by clinicians in the field of otolaryngology as well as dentistry. Also, as a result of the close relationship of the superior alveolar nerve to the maxillary sinuses, sinus pathologies can produce a direct stimulation of teeth. The insufficient familiarity of dentists with the sinonasal structures and lack of familiarity of otolaryngologists with the odontogenic pains, having tunnel vision, and being simply satisfied with the patient's complaints, can be considered the three main causes of such a problem.

Sinonasal-induced non-odontogenic pains are dull, constant aching pain commonly but not always aggravated by lowering of the head, palpation over the involved sinus or infraorbital regions, stepping hard onto the heel of the foot, cold weather, wind, and biting with anterior teeth [1]. Tingling and itching sensations also have been reported to be associated with these pains. Evidence and surveys also suggest that in cases of chronic unilateral non-odontogenic pain, multiple inconclusive dental procedures (i.e. endodontic therapies, root end surgeries, extractions, and implant placements) have been performed on the affected side for the man-

agement of the pain. Provocation testing via tactile stimulation of the sinonasal mucosa can also be a determining factor in the differential identification of pain etiology. In addition, pain relief following the application of topical anesthesia to the sinonasal mucosa may indicate the role of that tissue or structure in causing pain [2].

In general, properly differentiating the origin of odontogenic pain from other mimicking pains in the sinonasal region requires (1) having insight regarding the structural anatomy of the area, (2) accurate knowledge of the patterns and nature of pain of different origins, and finally (3) close interdisciplinary cooperation and communication between otolaryngologists and dentists. Direct or indirect visualization of the nasal cavity and maxillary sinuses via endoscope and CT, or culture, can be useful in understanding the exact etiology of non-odontogenic pains. However, it should be considered that findings related to the sinonasal complex can not necessarily be correlated to the patients' symptoms.

On the other hand, clinicians should be aware that referral orofacial pain is not limited to pain of sinonasal origin, because neuropathic, myofascial, neurovascular, and psychogenic factors can also cause pain.

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