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Editorial: Pretrigeminal Neuralgia: An Overlap Between Neurosurgery and Dentistry

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Trigeminal Neuralgia (TN) is one of the most debilitating pain syndromes, generally affecting middle-aged patients. The disease is two times more common in females and mostly affects the second or third division of the fifth cranial nerve. Although the typical pain syndrome is reported as a lancinating hemifacial pain, the characteristics of pain differ from one patient to another and in a group of patients, the pain may be localized to the teeth, alveolar bone, or even the paranasal sinuses. The latter presentation is the cause of a challenging therapeutic dilemma, as most of the patients undergo unsuccessful dental procedures to relieve their pain.

Neurosurgeons and neurologists are occasionally consulted by dentists or patients because of persistent neuralgia within the distribution of maxillary or mandibular branches of the trigeminal nerve after an unsuccessful dental intervention. Although in most cases the pain characteristics on referral may not be typical for TN, the possibility of Pretrigeminal Neuralgia (PTN) should be carefully sought in these patients. PTN was first defined by Symonds in 1949 [1], and is an atypical TN occurring in 20% of TN patients. The pain can be felt as a throbbing or dull pain in the maxillary or alveolar bone, exacerbating with cold food or beverages intake. The pain may last for several days to even years before the typical presentations of TN appear. In some patients, the pain is felt like toothache and is the cause to initially seeking dental advice. Because of the vague initial presentation of PTN which may be confused by odontogenic pain, it could be easily missed and recognized as an odontogenic pain by the dentists. Moreover, due to the high prevalence of dental problems in middle-aged patients, it may be ignored as neuralgia and be treated as a dental disorder. The challenge is getting worse when the pain distribution covers the tooth with dental caries. Even in seemingly successful dental procedures e.g. root canal treatment or extraction, the pain may migrate to the nearby teeth in the same quadrant [2] and cause a diagnostic and therapeutic dilemma. Any further dental intervention may end up in refractory pain syndrome and may be the cause of medico-legal issues.

The overlap between dentistry and neurosurgery on PTN is the cause of delayed treatment and patient dissatisfaction. The current literature is sparse on the ways to distinguish oral PTN from odontogenic pain. Although injection of an anesthetizing agent has been introduced to distinguish between these two pain syndromes [3], conflicting results have been reported in the literature. Some authors have reported no change in pain after the injection, while others believe that the anesthetizing test may decrease pain even in the pres-

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ence of PTN [4]. In the latter case, the dental procedure may be attempted by the dentist with little or no actual pain relief. A trial of therapy with Carbamazepine and/or Baclofen may also help to distinguish PTN from odontogenic pain in challenging cases.

Because of the lack of highly specific diagnostic tests to distinguish between developing PTN and odontogenic pain, a high level of suspicion should be considered for PTN when the dental exam cannot explain the severity of pain in patients presenting with new-onset toothache. A thoughtful history and careful neurological exam plus a meticulous dental exam are the key elements to avoid mismanagement in PTN patients. Of note, is to exclude other causes of pain like pulpitis, periodontitis, sinusitis, Myofascial Pain Dysfunction Syndrome (MPDS), atypical facial pain, Temporomandibular Joint (TMJ) problems, and trigeminal neuralgia.

To sum up, it is highly recommended that the dentists should seek neurological consult, when the severity and characteristics of pain are not in concordance with the severity of dental disease and neurologists should also be aware that not every odontogenic pain is actually from the dental origin and may need further evaluation for an evolving PTN.

Ethical Considerations

Compliance with ethical guidelines

No animal or human research was reported in this letter so there was no need for ethics board approval.

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Authors' contributions

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Conflict of interest

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