

# A deep insight of intra cranial tumors impersonating oro-facial pain

## Abstract

A several number of patients seeking dentists with Oro-facial pain will have intracranial tumors as the primary cause. Before the right diagnosis is made, these patients may undergo unnecessary dental involvements. This is because there are difficulties of diagnosis as the symptoms sometimes lead to misdiagnosis. Patients who present with symptoms that extend beyond the typical presentation of oro-facial pain are at highest risk for intracranial tumors and should be further evaluated.

**Keywords:** intra-cranial tumor, oro-facial pain, trigeminal neuralgia,ent

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Praveenkumar Ramdurg,<sup>1</sup> Naveen Srinivas,<sup>1</sup>  
Abhijit Sande,<sup>2</sup> Raghunath Dantu<sup>3</sup>

<sup>1</sup>Department of Oral Medicine and Radiology PMNM Dental College and Hospital, India

<sup>2</sup>Department of Oral Medicine and Radiology School of Dental Sciences KIMS, India

<sup>3</sup>Consultant Oral and Maxillofacial Radiologist, India

**Correspondence:** Praveenkumar Ramdurg Associate Professor Department of Oral Medicine and Radiology PMNM Dental College and Hospital Bagalkot 587101 Karnataka, India, Tel +91 8861593975, Email praveenod@gmail.com

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## Discussion

Orofacial pain may be caused by various diseases and conditions, providing an ongoing diagnostic challenge for clinicians. Orofacial pain is a complex symptom that requires the clinician to consider a myriad of etiologic possibilities. The prevalence of orofacial pain has been estimated to affect up to 26% of the population and may become a chronic problem in 7%.<sup>1,2</sup>

Oral pain is a ubiquitous complaint, prompting numerous visits to the dental office. For the vast majority of cases, the pain is caused by pathologies of the teeth and oral structures. However, in rare cases, the pain may arise from neurogenic sources.<sup>3-5</sup> Several reports showed that otologic<sup>6</sup> and ophthalmological<sup>7</sup> clinical manifestations mimic orofacial pain. One rare source of orofacial pain is intracranial tumours. Bullitt et al.,<sup>8</sup> reported in 2,000 patients with orofacial pain that approximately 1% had an intracranial tumour as an underlying cause. Although uncommon, these cases represent the first manifestations of intracranial tumours and, if detected early, can lead to better outcomes and reduced morbidity.

Intracranial tumours may escape detection in spite of repeated clinical evaluation by several dental or medical practitioners in different specialties. Direct or indirect compression of the intracranial portion of the sensory division of the fifth cranial nerve results in pain in the front, top, and side of the face and head. Compression of the intracranial portions of the 9th and 10th cranial nerves may produce pain in and behind the corresponding ear, whereas compression of the upper cervical roots results in pain in the back of the head and neck. Intracranial schwannomas of the eight nerves are associated with trigeminal neuralgia-like pain. Occasionally, schwannomas of other nerves, including the seventh nerve, have been reported as causing extracranial facial pain.<sup>9</sup>

When oro-facial pain caused by intracranial tumour, clinical features and manifestation are depending upon the situation of the tumour in the cranium. Oro-facial pain is caused most commonly by middle cranial fossa tumors and posterior cranial fossa tumors.

## Middle fossa tumors

- i. Meningiomas: these compressing the gasserian ganglion may cause either atypical facial pain or trigeminal neuralgia.<sup>10</sup>
- ii. Schwannomas and Neurofibromas: Schwannomas and neurofibromas of the fifth nerve usually produce facial dysesthesias, sensory deficits<sup>11</sup> and atypical trigeminal neuralgia.<sup>12</sup>
- iii. Pituitary tumors: Pituitary tumors are a rare cause of facial pain. An occasional tumor may produce pain by eroding the sella, invading the dorsum, and pressing laterally against the gasserian ganglion, or by invading the cavernous sinus directly.<sup>13</sup>
- iv. Malignant tumors of the nasopharynx: These tumors erode the skull base and compress the gasserian ganglion, producing facial dysesthesias, sensory loss, and occasionally sharp shooting pains. Facial numbness is common, and multiple cranial nerves may be affected.<sup>14</sup>
- v. Other tumours: Epidermoid tumor, osteochondroma, teratoma, and cysticercosis have been cited as causes of facial pain.<sup>15</sup>

## Posterior fossa tumors

- i. Posterior fossa tumors are more likely to cause trigeminal neuralgia than are tumors in any other location. Specifically, the neoplasm most likely to produce trigeminal neuralgia is a benign, slowly growing, extra-axial tumor that compresses the trigeminal root. Atypical facial pain may also occur in association with these benign tumors.<sup>16</sup> Acoustic tumors represent the most common type of tumor associated with trigeminal neuralgia.<sup>17</sup>
- ii. Posterior fossa cholesteatomas and meningioma are rare tumors, but may also produce trigeminal neuralgia.<sup>18,19</sup>
- iii. Brain-stem tumors commonly produce facial numbness, but only a few case reports describe associated facial pain.<sup>20</sup>
- iv. Less common posterior fossa tumors including lipoma, tentorial ossification, osteoma, and tuberculoma. In many of these cases the patients' age at onset of symptoms was considerably younger than expected in classical trigeminal neuralgia.

## Conclusion

The warning signs for brain tumors include disabling neurologic symptoms such as worsening paresthesia, dysesthesia, neuralgia, facial weakness, and neurologic deficits. Understanding these warning signs help practitioners reduce risks of neglecting subtle neurologic deficits and the possibility of misdiagnosing such life-threatening conditions.

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## Conflicts of interest

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