CASE REPORT

Dental Science

KEY WORDS: AN- Acoustic Neuroma, TN- Trigeminal Neuralgia, NF- Neurofibromatosis.

SCHWANNOMA OF EIGHTH NERVE CAUSING TRIGEMINAL NEURALGIA AND DEAFNESS - A RARE CASE REPORT

Prenika Sharma* Post graduate student Department of Oral medicine and Radiology, Govt. Dental College, Srinagar, Jammu and Kashmir. *Corresponding Author

Altaf Hussain Chalkoo Professor, Department of Oral medicine and Radiology, Govt. Dental College, Srinagar, Jammu and Kashmir.

ABSTRACT

60 years old male patient presented with trigeminal neuralgia involving left Inferior alveolar nerve, lingual nerve and mental nerve. Radiological investigation revealed Acoustic Schwannomas involving Cisternal segment of V cranial nerve. These tumors evolve from Schwann cell sheath and can be either intracranial or extra-axial. Anatomically, acoustic neuromas tend to occupy the cerebellopontine angle. Acoustic neuromas are generally seen between the fourth to sixth decades of life. Acoustic neuromas developing in individuals with neurofibromatosis type 2 (NF II) are likely to present earlier, with a peak incidence around the third decade of life.

INTRODUCTION:

Trigeminal neuralgia is unilateral, episodic, electric shock-like pain and provoked by light touch. It is often mistaken as a tooth problem due to its presentation in the lower 2 branches of the trigeminal nerve. Patients frequently undergo unnecessary dental treatment before the condition is recognized. [1] It has an estimated prevalence of 100 to 200 cases per 100,000 people and an annual incidence of 4–5 cases per 100,000 people. Pain distribution is unilateral and follows the sensory distribution of trigeminal nerve. At times, both distributions are affected. [2]

It is usually triggered by daily activities such as eating, talking, or brushing teeth. Female to male ratio seen is 2:1. In most of the cases pain lasts from few seconds to two minutes. It may recur spontaneously with refractory period. Trigeminal neuralgia is either of classical type or secondary type.

Vascular compression of trigeminal nerve root is the cause of Classical Trigeminal Neuralgia while secondary trigeminal neuralgia is caused by other factors such as tumors, vascular disorders, and demyelination in multiple sclerosis. Frequency of cerebellopontine angle tumors in trigeminal neuralgia in different series is 1–9.9%. [3] Various proposed hypothesis suggest that intracranial tumors cause TN either by direct tumoral compression on the trigeminal nerve, arterial displacement with resulting neurovascular compression or by chemical irritation of the nerve. There are cases in the literature of trigeminal neuralgia secondary to acoustic neuroma. Acoustic neuroma accounts for around 80% to 90% of cerebellopontine angle (CPA) lesions [4,5]

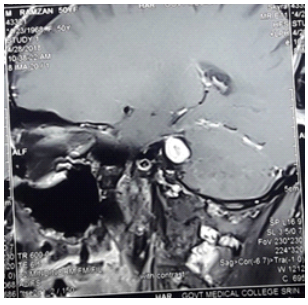
CASE HISTORY

Presented case is 60 year old male patient presented to our department Oral medicine and Radiology, Srinagar with the chief complain of pain left lower side face since 2 months. Pain is current like, sharp stabbing type of pain remains for few seconds and with recurrent attacks.

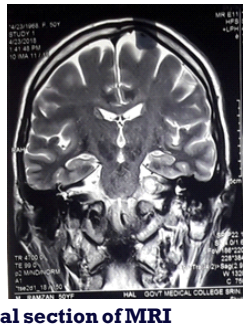
Patient was having history of pain left side upper face and for that he had undergone left infraorbital neurectomy in 2012. He was diagnosed as a case of trigeminal neuralgia involving left side Inferior alveolar nerve, lingual nerve and mental nerve. Patient was on Carbamazepine since 2 years, initially relieve was seen. Since 2 month there was no relieve in pain. Patient presented to us with pain on left lower jaw and decreased hearing power in left ear. We advised patient MRI to rule out any pathology associated with nerve. Patient was also advised ENT consultation, which revealed decreased hearing power in left ear.

On MRI well defined lesion measuring 15 X 17 mm showing hypertense signal on T2 and hypotense signal on T1 was seen. Homogenously enhancing Left CP- angle lesion possibly of Acoustic Schwannomas involving Cisternal segment of V cranial nerve.

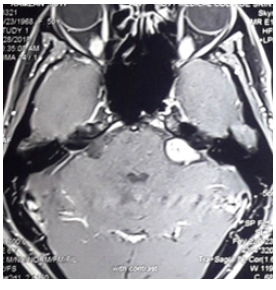
Picture 1, 2 and 3. We referred patient to neurosurgery department for further management. He was planned for surgical intervention.



Picture1- Sagittal section of MRI



Picture 2- Coronal section of MRI



Picture 3- Axial section of MRI

DISCUSSION:

A complete history, clinical examination, and through diagnostic work-up ruled out an odontogenic cause for the patient's pain. The absence of work, family, and personal

conflicts excluded psychological pain. Patient was kept on Carbamazepine 200mg TID and Gabpentin100 mg TID for 1 month. There was decrease in frequency of episodes of pain initially. Pain increased with time. Radiological work up revealed Acoustic Schwannomas involving Cisternal segment of V cranial nerve. Acoustic neuroma accounts for around 80% to 90% of cerebellopontine angle (CPA) lesions. [16] The Acoustic neuroma (AN) arises from the Schwann cell, in the peripheral portion of superior and inferior vestibular nerves, and also from cochlear nerve [6]. AN has an incidence of about 1: 100000 inhabitants per year. [7] Most of the cases [8, 9, and 10] in the literature are of trigeminal neuralgia secondary to acoustic neuroma. There are only few case reports [11, 12, and 13] with a confirmed diagnosis of AN mimicking orofacial pain.

Patient initially diagnosed with orofacial pain but in later stages clinical features suggested trigeminal neuralgia. According to some authors as the tumor size increases it pushes the trigeminal nerve root against the superior cerebellar artery and produces a neurovascular conflict. Increasing pressure on the trigeminal root may induce loss of myelination in the trigeminal sensory root which results in sensory deficits and facial pain. [14] Literature shows that less than 5% AN are diagnosed by dentists, a very low percentage. [15]

Trigeminal neuralgia is extremely painful orofacial syndromes with multiple etiologies. It is frequently encountered by dentists because oral causes are considered. Due to various signs and symptom and lack of knowledge in general dentist makes the diagnosis difficult and sometimes ends up with multiple extractions. Oral medicine specialist has a very import role in the diagnosis of the condition. Timely diagnosis and referral to a neurosurgeon experienced in treating these rare disorders rewarding for the patient.

REFERENCES:

1. Joanna M Zakrzewska,1 Mark E Linskey2. Trigeminal neuralgia. BMJ | 22 FEBRUARY 2014 | VOLUME 348
2. I.M. Gomez-Arguelles et al. Oxcarbazepine monotherapy in carbamazepine-unresponsive trigeminal neuralgia. Journal of Clinical Neuroscience 15 (2008) 516–519
3. Ehtisham Ahmed Khan Afridi et al. ORIGINAL ARTICLE FREQUENCY OF CEREBELLOPONTINE ANGLE TUMOURS IN PATIENTS WITH TRIGEMINAL NEURALGIA. J Ayub Med Coll Abbottabad 2014;26(3)
4. Alan A. Moazzam, MD et al. Patients appearing to dental professionals with orofacial pain arising from intracranial tumors: a literature review. OOOO ORIGINAL ARTICLE
5. Thomas P. Nikolopoulos. Acoustic Neuroma Growth: A Systematic Review of the Evidence. Otology & Neurotology 31:478Y485 _ 2010, Otology & Neurotology, Inc. Volume 114, Number6
6. E. M. Tallan, S. G. Harner, and C. W. Beatty, "Does the distribution of Schwann cells correlate with the observed occurrence of acoustic neuromas?" American Journal of Otology, vol. 14, no. 2, pp. 131–134, 1993.
7. Acoustic Neuroma, "National institutes of health consensus develoment conference," Consens Statement, vol. 9, pp. 1–24, 1991.
8. Y. Matsuka, E. T. Fort, and R. L. Merrill, "Trigeminal neuralgia due to an acoustic neuroma in the cerebellopontine angle," Journal of Orofacial Pain, vol. 14, no. 2, pp. 147–151, 2000.
9. R. Gupta, S. S. Walia, and D. Thaman, "Acoustic neuroma presenting as refractory trigeminal neuralgia," Indian Journal of Anaesthesia, vol. 50, no. 3, pp. 218–219, 2006.
10. N. Mehrkhodavandi, D. Green, and R. Amato, "Toothache caused by trigeminal neuralgia secondary to vestibular schwannoma: a case report," Journal of Endodontics, vol. 40, no. 10, pp. 1691–1694, 2014.
11. M. A. Bisi, C. M. P. Selaimen, K. D. Chaves, M. C. Bisi, and M. L. Grossi, "Vestibular schwannoma (acoustic neuroma) mimicking temporomandibular disorders: a case report," Journal of Applied Oral Science, vol. 14, no. 6, pp. 476–481, 2006.
12. E. Bullitt, J. M. Tew, and J. Boyd, "Intracranial tumors in patients with facial pain," Journal of Neurosurgery, vol. 64, no. 6, pp. 865– 871, 1986.
13. D. S. German, "A case report: acoustic neuroma confused with TMD," The Journal of the American Dental Association, vol. 122, no. 13, pp. 59–60, 1991.
14. Praveenkumar Ramdurg,1 Naveen Srinivas,1 Vijaylaxmi Mendigeri,2 and Surekha R. Puranik3. Case Report Acoustic Neuroma Mimicking Orofacial Pain: A Unique Case Report Hindawi Publishing Corporation Case Reports in Otolaryngology Volume 2016, Article ID 1947616, 5 pages.
15. D. E. Brackmann and D. M. Barrs, "Assessing recovery of facial function following acoustic neuroma surgery," Otolaryngology—Head and Neck Surgery, vol. 92, no. 1, pp. 88–93, 1984.
16. Greene J, Al-Dhahir MA. Acoustic Neuroma (Vestibular Schwannoma) [Updated 2018 Nov 25]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2019 Jan-.