

A REVIEW ON FACIAL NEURALGIAS

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E-mail of Corresponding Author: dr_gauravsolanki@yahoo.com**Abstract**

Facial neuralgias are produced by a change in neurological structure or function. This type of neuropathic pain affects the mental health as well as quality of life of patients. There are different types of neuralgias affecting the oral and maxillofacial region. These unusual pains are linked to some possible mechanisms. Various diagnostic tests are done to diagnose the proper cause of facial neuralgia and according to it the medical and surgical treatment is done to provide relief to patient.

Keywords: Neuropathic, Nociceptive, Ectopic, Hemifacial**1. Introductions¹⁻⁸:**

The dentist is frequently called upon to diagnose pain in the oral and maxillofacial region. Pain is a complex human psycho physiological experience. Neuralgic pain is produced by a change in neurological structure or function rather than by the excitation of pain receptors that causes nociceptive pain. Neuralgic pain follows the path of a nerve that may give rise to the sensation of tooth pain which often is a diagnostic dilemma for dentist. This unusual pain is thought to be linked to four possible mechanisms: ion gate malfunctions; the nerve becomes mechanically sensitive and creates an ectopic signal; cross signals between large and small fibres and malfunction due to damage in the central processor. Neuropathic pain often has a negative impact on the mental health and quality of life in these groups of patients.

1.1 Trigeminal Neuralgia: The trigeminal nerve, one on each side of the face, is the largest nerve of the face. It transmits various kinds of signals, for example pain, pressure, and heat. Compression of the nerve root by a small blood vessel that causes spasms due to the pulsing of the blood vessel, which squeezes the nerve even more is considered to be the basic cause of Trigeminal neuralgia. Damage to the myelin sheath can cause trigeminal pain typically seen with Multiple Sclerosis. Accidents, unsuccessful dental work, or various infections can damage the trigeminal nerve^{9, 10}.

1.2 Clinical Manifestation: The disorder generally causes short episodes of excruciating pain, usually for less than two minutes and usually only one side of the face.^{2,3} Simple stimuli such as eating, talking, making facial expressions, washing the face, or any light touch

or sensation can trigger an attack (even the sensation of a cool breeze). Some patients will have a muscle spasm which led to the original term for TN of "tic douloureux" ("tic", meaning 'spasm', and "douloureux", meaning 'painful', in French)¹¹.

1.3 Glossopharyngeal Neuralgia:

Glossopharyngeal neuralgia (GPN) is also called vagoglossopharyngeal neuralgia. Calcification or ossification of the stylohyoid ligament is infrequent, often incidental finding on radiographs, however when the source of pain is from the styloid process or calcified stylohyoid ligaments it is referred to as Eagle's syndrome.^{5,6} The symptoms may be confused with other causes of head and neck pain. Glossopharyngeal neuralgia is characterized by shock like pains in the territory of the glossopharyngeal nerve. It is generally located near the tonsil although the pain may extend deep into the ear. It is usually triggered by swallowing, chewing, speaking, laughing or coughing¹². Glossopharyngeal neuralgia sometimes results from nerve compression by an aberrant, pulsating artery similar to that in trigeminal neuralgia and hemi-facial spasm. Glossopharyngeal neuralgia usually begins after age forty and occurs more often in men. Symptoms include severe pain in the areas connected to the ninth cranial nerves. This includes the throat, tonsillar region, posterior third of the tongue, nasopharynx (back of nose and throat), larynx, and ear. The pain is episodic and severe. The differential diagnosis of neuralgias should be included with an elongated styloid process as sources of head and neck pain¹³.

1.4 Post Herpetic Neuralgia: Herpes Zoster

(Shingles) is caused by reactivation of latent varicella zoster virus infection. Approximately 15-20% of cases of herpes zoster involves Trigeminal nerve mainly affect the ophthalmic division resulting in pain and lesion in region of the eyes and forehead. In majority cases the pain of shingles resolves within a month after lesion heals. Pain that persist longer than a month is classified as Post Herpetic Neuralgia. The pain and numbness of post herpetic neuralgia result from combination of both central and peripheral mechanisms. The varicella zoster virus injures the peripheral nerve by demyelination, wallerian degeneration and sclerosis but changes in the CNS include atrophy of dorsal horn cells in the spinal cord have also been associated with Post Herpetic Neuralgia^{14,15}.

2. Clinical Manifestation: Patient experience persistent pain, paresthesia, hyperesthesia and allodynia months to year after zoster lesion have healed. The pain is often accompanied by a sensory deficit. There is no effect on the trigger zone. The best therapy for Post Herpetic Neuralgia is prevention. Use of antiviral drugs particularly famciclovir (500mg tid for 7 days), acyclovir (800mg 5times daily for 7-10 days) or valacyclovir (1 gm tid for 7 days) along with short course of systemic corticosteroids during the active phase of disease may decrease the incidence and severity of Post Herpetic Neuralgia¹⁶.

2.1 Nervous Intermedius (Geniculate) Neuralgia: It is uncommon paroxysmal neuralgia of cranial nerve VII, characterized by pain in the ear and less frequently the anterior tongue or soft palate. It involves the intermediate nerve of Wrisberg important component of VII nerve. Pain may be provoked by the stimulation of trigger zone within the ipsilateral distribution of the nerve. The pain is not sharp or intense as in Trigeminal Neuralgia and there is often some degree of facial paralysis indicating involvement of motor root. Geniculate Neuralgia commonly results from the Herpes Zooster of geniculate ganglion and nervous intermedius of cranial nerve VII a condition referred to as Ramsay Hunt Syndrome. Viral vesicles may be observed in the ear canal or on tympanic membrane^{17,18}.

2.2 Occipital Neuralgia: It is a rare neuralgia in the distribution of the sensory branches of the cervical plexus (most commonly unilateral in the neck and occipital region). The most common

causes are trauma, neoplasm, infection and aneurysms involving the affected nerves. Palpation below the superior nuchal line may reveal an exquisitely tender spot^{19, 20}.

2.3 Atypical Facial Pain: It refers to a mixed group of conditions which are defined and diagnosed by exclusion of other typical patterns of facial pain. In atypical facial pain there is vague, deep, poorly localized pain in the regions supplied by fifth, ninth, second and third cranial nerve.

The Distribution of the pain is anatomic since it involves portions of sensory supply of two or more nerves and may cross the midline. This pain lacks a trigger zone and is persistent for weeks, months and years. In this condition there is occurrence of strong emotional overtones of the condition. It is usually psychogenic and occurs in patients who suffer from depressive reaction, hysteria or schizophrenia²¹.

3. Diagnosis²²⁻²⁵:

Diagnosis typically involves locating the damaged nerve by stimulation of the specific damaged pathway or by identifying missing sensory function. The most common test for neuralgia is a:

- Nerve conduction study, such as using microneurography in which the peripheral nerve is stimulated and recordings are taken from a purely-sensory portion of the nerve.
- Pain is subjective to the patient, it is important to use a pain assessment scale, such as the McGill Pain Questionnaire.
- Since approx 10% of TN cases are caused by detectable underlying pathology, so MRI is indicated.
- Laser evoked potentials (LEPs) are measurements of cortical responses using lasers to selectively stimulate thermoreceptors in the skin.
- Quantitative Sensory Testing (QST) relies on analysis of a patient's response to external stimuli of controlled intensity.
- Recently, skin biopsy has been used to investigate mechanoreceptors and their myelinated afferents by quantifying nerve fibres C fibres and A-delta nerve fibres through measurement of the density of intra-epidermal nerve fibres (IENF).

4. Summary:

Evaluation of the dental patient who presents with jaw or facial pain of non-odontogenic

origin is an important skill for the dentist to master. For neuropathic disorders generally no abnormality is found on physical examination therefore the clinician must rely on the verbal history to arrive at an accurate diagnosis. The key of recognizing all of these conditions and avoiding unnecessary and potential harmful dental treatment frequently lies in obtaining an excellent description of the chief complaint including quality of pain, duration, alleviating factors and aggravating factors. The role of the primary care dentist is mainly to establish a proper diagnosis and avoid unnecessary treatment which may jeopardize the patient health.

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