

Trigeminal Neuralgia: A Literary Review Of Trigeminal Nerve Syndrome**Dr. UZMA TABASSUM**

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Abstract:

Trigeminal neuralgia (TN) is also known as Tic douloureux is a distinctive facial pain syndrome that becomes recurrent and chronic. It is characterized by unilateral pain following the sensory distribution of fifth cranial nerve (typically radiating to maxillary or mandibular area in 35% of affected patients) and is often accompanied by brief facial spasm or tic.

Most cases of trigeminal neuralgia are idiopathic, but compression of trigeminal roots by tumors or vascular anomalies may cause pain. In one study, 64% of compressing vessels were identified as an artery, most commonly the superior cerebellar (81%). Venous compressions were identified in 36% of cases.

The lancinating facial pain of trigeminal neuralgia usually responds to medical treatment. However in some cases trigeminal neuralgia is refractory to drug therapy. In addition, some patients are unable to tolerate the side effects of medication. In these cases several safe and effective surgical procedures are available for treatment of this common facial pain syndrome.

The Ayurvedic treatment for trigeminal neuralgia natural herbs, Ayurvedic oils for restoring the imbalance of Vata. The treatment is focused on restoring the balance. The Ayurvedic herbal medicines are also used to improve the micro vibration within the nerve, so that nerve starts functioning at an optimum level and abnormal pain sensations are brought down to acceptable levels.

Keywords: Trigeminal neuralgia, vascular anomalies, MRI, venous compression, surgical procedures, facial pain syndrome.

Introduction:

¹ **T**rigeminal neuralgia (TN) also called as

tic douloureux, is chronic pain condition that affects the trigeminal or fifth cranial nerve, one of the most widely distributed nerve in the head. It is a nerve disorder causes a stabbing or electric shock like pain.

²**Alternative names:** Tic douloureux, cranial neuralgia, facial pain – trigeminal, facial neuralgia, trigeminal neuralgia, micro vascular decompression-trigeminal.

³Trigeminal neuralgia presents as attacks of stabbing unilateral facial pain, most often on right side of the face. The number of attacks may vary from 1 per day to 12 or more per hour.

Triggers of pain attacks include:

1. Chewing, talking or smiling
2. Drinking cold or hot liquids

3. Touching, shaving or brushing the teeth, blowing the nose

4. Encountering cold air from an open automobile window

⁴The pain runs along the line dividing the mandibular and maxillary nerves or maxillary or ophthalmic portion of nerve. In 60% cases the pain shoots from the corner of the mouth to angle of jaw.

⁵In 30%, the pain jolts from the upper lip or canine teeth to eye or eyebrow. In less than 5% of cases, pain involves ophthalmic branch of facial nerve.

Symptoms:

Very painful, sharp electric like spasms that usually lasts a few seconds or minutes but can become constant.

Pain is usually only on one side of the face, often around eye, cheek and lower part of face.

There is usually no loss of sensations or movement of the affected part of face.

Pain may be triggered by touch or sound.

Exams and tests:

A brain and nervous system examination (neurologic) is often normal. Tests that are done to look for the cause include -

1. Blood vessel test
2. ⁶MRI of the head
3. Trigeminal reflex testing

Diagnosis:

⁷Strict criteria for trigeminal neuralgia as defined by the International Headache Society (IHS) are as follows –

- A. Paroxysmal attack of pain lasting from a fraction of a second to 2 minutes affecting one or more divisions of trigeminal nerve.
- B. ⁸Pain has at least one of the following characteristics :
 - a. Intense,
 - b. Sharp,
 - c. Superficial or
 - d. Stabbing

Precipitating from trigger areas or by trigger factors.

- C. Attacks stereotyped in individual patients.
- D. No clinically evident neurologic deficit.
- E. No attribution to another disorder.

⁹A blood count and ¹⁰liver function test are required if the therapy with Carbamazepine is contemplated.

Oxcarbazepine can cause hypernatremia so the serum sodium level should be measured after institution of the therapy.

Treatment:

¹¹Certain medicines sometimes help reduce pain and the rate of attacks. These include –

- a. Anti-convulsant drugs
- b. Muscle relaxants
- c. Tricyclic anti-depressants

¹²Surgery is an option for trigeminal neuralgia. ¹³One surgery is called Micro vascular decompression (MVD). During surgery, material is placed between nerve and blood vessel that is passing on nerve.

¹⁴Other techniques involve cutting or destroying parts of trigeminal nerve root. Methods include –

- a. ¹⁵Radiofrequency ablation (uses high frequency heat)
- b. ¹⁶Injection of glycerol or alcohol
- c. Balloon micro compression

- d. ¹⁷Radiosurgery (uses high power surgery)
- e. Head massage *Shirodhara* (hot oil head massage) is home remedy is also very beneficial.

The Ayurvedic treatment for trigeminal neuralgia consists of natural herbs, Ayurveda oil for restoring the imbalance of *Vata*. The herbs *Ashwagandha*, *Brahmi*, *curcumin* and *Agnitundi* work in a synergistic manner to control pain and inflammation in the trigeminal nerve.

Ayurvedic herbal medicines are also need to be given to improve the microcirculation within the nerve, so that nerve starts functioning at an optimum level and abnormal pain sensations are brought down to acceptable levels. The herbal medicines are given which act on trigeminal nerve and reduce irritability and perception of pain.

Historical information:

The clinical description of trigeminal neuralgia can be traced back more than 300 years. Aretaeus of Cappadocia, known for one of the earliest description of migraine is credited with first description of trigeminal neuralgia when he described a headache in which “spasms and distortions of countenance took place.”

²Nicholaos Andre coined the term ‘tic douloureux’ in 1756. Osler described trigeminal neuralgia in great and accurate detail in his 1912 book *The Principles and Practice of Medicine*.

¹⁸In 1900, in a landmark article, Cushing reported a method of total ablation of Gasserian ganglion to treat trigeminal neuralgia.

Discussion:

- Trigeminal neuralgia is a severe, unilateral, episodic pain of face that is provoked by light touch, is a common and potentially disabling pain syndrome. The precise pathophysiology of it remains obscure. This condition has known to derive patients with trigeminal neuralgia to the brink of suicide. ¹⁹It should be differentiated from dental cause of pain. ²⁰Although neurologic examination findings are normal in patients with idiopathic variety, the most common type of facial pain neuralgia, and the clinical history is indistinctive.
- ^{21,22}Magnetic Resonance Imaging (MRI) can distinguish between patients having secondary

trigeminal neuralgia related to tumors and that related to multiple sclerosis.

- Trigeminal neuralgia is characterized by unilateral pain following the sensory distribution of cranial nerve fifth – typically radiating to maxillary or mandibular area in 35% of affected patients often accompanied by brief facial spasm or tic.
- Isolated involvement of ophthalmic division is much less common (2.8%).
- ²³The first line drug for treatment is either Carbamazepine or oxcarbazepine and doses should be slowly escalated.
- Neurosurgical options can be discussed at an early stage but surgery may not be required until the quality of life is compromised. Micro vascular decompression is a major neurosurgical procedure that provides a longest period of pain relief and aims to preserve functions of nerve.
- Percutaneous, palliative, destructive procedures and stereotactic radiosurgery can provide temporary relief but at risk of facial numbness which increases with repetition of procedure. Most cases of trigeminal neuralgia are idiopathic but compression of trigeminal root by tumors or vascular anomalies may cause pain. ²⁴In one study, 64% of compressing vessels were identified as an artery, most commonly the

superior cerebellar (81%). Venous compression was identified in 36% of cases.

- Infrequently adjacent dental fillings composed of dissimilar metals may trigger attacks and one atypical case followed tongue piercing.

Conclusion:

Trigeminal neuralgia is a rare, episodic facial pain that is unilateral, electric shock like and provoked by light touch. Studies in Europe have shown that trigeminal neuralgia results in considerable interference with activities of daily living that is comparable to another neuropathic pain conditions. When trigeminal neuralgia affects people younger than 40, it is often due to multiple sclerosis and tumor. No geographical tendency or racial difference has been found. However females are affected up to twice as males (range 3:2 to 2:1). In 90% of patients the disease begins after age of 40 years with typical onset of 60-70 years. Another risk factor for this syndrome is hypertension.

The chief complication in trigeminal neuralgia is adverse effects and toxicity experienced routinely with long term use of anticonvulsant agents. The worst complication is anesthesia dolorosa, an intractable facial dysesthesia, which may be more disabling than original trigeminal neuralgia.

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