



STUDY OF TRIGEMINAL NEURALGIA SURGICAL MANAGEMENT AND THEIR RISK FACTORS

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ABSTRACT **Introduction:** When one or more of the three branches of the trigeminal nerve supply a particular area of the face, pain ensues from trigeminal neuralgia. Symptoms of trigeminal neuralgia can include one or more of the following patterns: episodes of sharp, electric-shock-like discomfort that last for a long time. Smoking and high blood pressure enhance a person's risk of getting trigeminal neuralgia (TN), which affects twice as many women as men and is most frequent in those over 50. The majority of TN cases are not genetic; however some do run in families. **Method:** All retrospective and prospective studies summarizing trigeminal neuralgia treatment plans and outcomes, as well as the literature indexed in PubMed, Medline, and the National Library of Medicine. Patients with type I or type II TN pain and secondary TN pain related to tumors met the inclusion criteria. **Result:** Of the six participants, two have paresthesia, three have pain, and one has a headache. Of the six participants, four received neurectomy, one had neurotomy, and one got conservative medical care. There were two girls and four males. In this study, there are more men than women. **Conclusion:** While selecting a surgical method, the patient's age, health, type of prior surgery, and level of discomfort should all be taken into account. While there is no one-size-fits-all therapy for trigeminal neuralgia (TN), many treatments have been shown to have positive early outcomes.

KEYWORDS : Trigeminal Neuralgia, Surgical Management Risk factors

INTRODUCTION:

The illness known as trigeminal neuralgia (TN) is typified by abrupt and repeated, typically unilateral, intense, momentary bursts of stabbing pain over one or more trigeminal nerve branches. The right side of the body experiences pain more frequently than the left, and it usually only affects the second or third division of the trigeminal nerve (first division involvement is uncommon). The duration of TN remission varies from months to years; however the time between pain-free episodes may eventually get shorter. The condition is more common in women, and the onset of TN typically happens in middle or elderly life. Patients with TN frequently attempt to avoid trigger factors, which include blowing wind, eating, shaving, drinking, and using makeup.¹

TN pain is known for being abrupt, unexpected, and fleeting—hence the phrase pain paroxysm. The type of pain can be shooting, stabbing, or electrical shock-like. Even while a single pain paroxysm may only last a few seconds, these episodes can recur many times a day following a refractory phase and can occur in clusters, with multiple paroxysms occurring shortly after one another.²

The majority of instances result from compression of the trigeminal nerve root, typically at the root entrance zone, or within a few millimeters of the nerve's entry into the pons. Trigeminal neuralgia can occasionally be caused by a primary demyelinating disease. Other, less common causes include tiny infarcts or angiomas in the pons or medulla, as well as infiltration of the nerve root, gasserian ganglion, or nerve by a tumor or amyloid. Following the exclusion of all these hypotheses, a tiny percentage of patients still have an unknown aetiology.³

Trigeminal neuralgia (TN) diagnosis is mostly dependent on how a patient describes their paroxysmal pain episodes. Therefore, a clear explanation of TN's distinctive characteristics is required. The etiology of TN as well as variations in the clinical phenotype must be included in the diagnostic criteria. But the terminology used in the current criteria is inconsistent, which makes it difficult for doctors, researchers, and patients to communicate with one another. TN is a prototype for neuropathic pain, although the grading method used to diagnose neuropathic pain does not fit typical TN. The grading system requires objective indicators or tests that identify an underlying neural system lesion or disease in order to provide a definitive diagnosis.⁴

METHOD:

We examined all retrospective and prospective studies describing trigeminal neuralgia treatment approaches and their risk factors as well as the literature indexed in PubMed, Medline, and the National Library of Medicine. Patients with type I or type II TN pain, as well as secondary TN pain related to tumors met the inclusion criteria. The

previously listed non-trigeminal facial pain types are among the exclusion criteria. Before the 1950s, literature was evaluated for historical treatment.

RESULT:

Table 1: Sex Distribution Of Study Subjects

SEX	NO OF SUBJECTS
MALE	04
FEMALE	02
TOTAL	06

Out of 6 subjects 4 were males and 2 were females. Number of males more than females in this study.

Table 2: Risk Factors Of Trigeminal Neuralgia

RISK FACTORS	NO OF SUBJECTS
PARESTHESIA	02
PAIN	03
HEADACHE	01
TOTAL	06

Risk factors of trigeminal neuralgia are paresthesia, pain and headache. Out of 6 subjects 2 subjects are with paresthesia and 3 subjects with pain and 1 subject with headache.

Table 3: Management Of Trigeminal Neuralgia

MANAGEMENT	NO OF SUBJECTS
NEURECTOMY	04
NEUROTOMY	01
CONSERVATIVE MEDICAL MANAGEMENT	01
TOTAL	06

Management of trigeminal neuralgia. Out of 6 subjects 4 subjects have undergone neurectomy, 1 had neurotomy and 1 subject undergone conservative medical management.

DISCUSSION:

Demyelination of the trigeminal nerve root close to its entry into the pons is assumed to be the etiology of most TN cases. The junction of the astrocytes' central myelin and the Schwann cells' peripheral myelin is known as the "root entry zone." TN-causing impulses can spontaneously discharge from the damaged region of the nerve root. In the root entrance zone, ephaptic cross-talk occurs between A-β fibers, which transport touch sensation, and A-δ and C fibers, which convey pain feeling. This could account for how insignificant tactile stimulus can trigger TN attacks.^{1,3} Pathological alterations, such as hypermyelination, can be seen in the trigeminal ganglia itself.⁵

The average age of research participants, the ratio of Symptomatic to

Classical TN, and the predominance of involvement on the right side aligned with both regional and worldwide statistics. In comparison to men, women are more frequently affected with trigeminal neuralgia. The regional report is consistent with the small male majority of 50.8%. This discrepancy may be explained by the fact that in Sub-Saharan nations, men are more likely than women to seek medical assistance for their ailments. Younger patients were more likely to experience symptomatic TN, which is in line with earlier observations. A greater percentage of our patients had previously undergone dental extractions, which is indicative of a visit to the dentist prior to the diagnosis of trigeminal neuralgia.⁶

One of the most severe forms of pain that a person might suffer is trigeminal neuralgia (TN), which is the most frequent form of craniofacial neuropathic pain. Four to thirteen persons per 100,000 are thought to be affected annually. According to the International Association for the Study of Pain, TN is characterized as "a sudden, usually unilateral, severe, brief stabbing pain that recurs in the distribution of one or more trigeminal nerve branches."³² Pain that is localized to the region innervated by one or more trigeminal nerve branches is sometimes described as stabbing, paroxysmal, scorching, or evoking.⁷

Carbamazepine (CBZ) is the first-line medication for pain management in TN patients, per the updated guidelines. 98% of respondents were initially given CBZ at a dose of 600 mg on average (a range of 200–1200 mg). Psychiatry's viewpoint, however, states that CBZ has also been utilized to treat bipolar disorder since the early 1970s, including both maintenance therapy and acute mania. Furthermore, it was discovered that CBZ possessed robust preclinical evidence for the management of co-occurring bipolar disorder and persistent pain. As a result, the relationship between TN and bipolar disorder may be overstated when CBZ is used.⁸

CONCLUSION:

The patient's age, the nature of their previous surgeries, their health, and the intensity of their pain should all be taken into consideration while choosing a surgical approach. Different treatments for trigeminal neuralgia (TN) are known to have initial good results, albeit no therapy is ideal for all individuals. Surgical treatment, on the other hand, offers great long-term outcomes and a low recurrence rate. The problem of vascular compression, which is responsible for 85% of TN cases, is addressed surgically.

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