

Trigeminal Neuralgia (Tic Douloureux)

Trigeminal neuralgia (TN), also called tic douloureux, is a condition that affects cranial nerve V, the trigeminal nerve. This condition is characterized by attacks of severe, stabbing facial pain, followed by a burning ache that lasts for several seconds to minutes in the sensory area supplied by the trigeminal nerve branches. These areas are known as "trigger zones" where simple movements like chewing, talking, or brushing teeth can lead to excruciating pain. Other features of TN include psychological disturbances, commonly depression, and bizarre facial movements from muscle spasms. TN is more common in women over 60 years old. Diagnosis is clinical, but a brain MRI helps to identify the etiology and rule out any structural lesions. The first line treatment is carbamazepine along with several other muscle relaxants or antiepileptic drugs. Surgery is only considered as a last resort.



PLAY PICMONIC

CN V (Trigeminal Nerve)

Brainstem Grabbing (5) Face

Cranial nerve V, the trigeminal nerve originates in the pons and has both motor and sensory innervations in the face. Its three main branches, V1 (ophthalmic), V2 (maxillary), and V3 (mandibular) provide sensation to the upper third, middle third, and lower third of the face, respectively. CN V also provides sensation to the temporomandibular joint, teeth, and anterior 2/3 of the tongue.

Characteristics

Stabbing Unilateral Facial Pain

Stabbing Pain-bolt on the Facial Gem Sensors

Severe, sharp, stabbing facial pain on one side of the face in the distribution of one or more branches of the trigeminal nerve is characteristic of trigeminal neuralgia. These episodes often occur from minor stimuli e.g. wind blowing on face, brushing teeth, or applying face lotion and last for several seconds to minutes.

Trigger Zones

Magnifying-glass Identifies Triggers

Trigeminal neuralgia is associated with trigger zones on the CN V distribution areas. When these trigger zones are touched or irritated they will instigate pain. It can occur at rest or by simple movements like chewing, talking, or touching parts of the face (eg. putting on makeup, brushing teeth or washing the face). Episodes can increase in intensity and frequency over time.

Psychological Disturbances

Psycho in a straight-jacket

Secondary to the neurologic facial pain, psychological distress within a broad spectrum can occur. Symptoms can range from dysphoria to severe depression with suicidal ideation.

Bizarre Facial Movements

Face Dancing

Facial spasms of muscles in the face can occur in response to severe pain.

More Common in Women

(60) Min-reporter

Trigeminal Neuralgia is rare. However, it is more common in women (2:1), who are usually >60 years old.

Classification

Classical

First-Place Tri-gem Nerve-algae

Classical Trigeminal Neuralgia describes the most common etiology of this disease, where a CN V nerve root is being compressed by an adjacent aberrant loop of an artery or vein. This pressure leads to damage and atrophy of the nerve. The superior cerebellar artery is commonly involved.

Secondary

Two Tutu Tri-gem Nerve-algae

Secondary Trigeminal Neuralgia describes cases that are caused by an underlying neurologic disease. Common examples include multiple sclerosis, a tumor at the cerebellopontine angle, or an arteriovenous malformation.

Idiopathic

Idiot-path

Idiopathic trigeminal neuralgia are cases where there is no identifiable cause. These cases typically have unremarkable findings on MRI and electrophysiological tests.

DIAGNOSIS

Diagnosis by Clinical Impression

Diagnostic-computer displaying Clinical Impression

Trigeminal neuralgia is a clinical diagnosis and must include all of the following criteria, per the International Classification of Headache Disorders:

- Severe, acute, stabbing/electric shock-like, unilateral episodes of pain in the area innervated by one of more divisions CN V.
- Episodes of pain last no more than 2 minutes.
- Pain triggered by innocuous stimuli.
- There is no other better explanation for the symptoms.

MRI

M-R-eyes Machine

Neuroimaging, specifically MRI, is used to classify the cases of Trigeminal Neuralgia according to their etiology. All patients with Trigeminal Neuralgia should have at least one MRI performed at diagnosis to determine the etiology. Up to 15% of cases have secondary causes of Trigeminal Neuralgia.

Treatment

Carbamazepine

Car-bomb-maze-pine

Carbamazepine is a first line treatment for trigeminal neuralgia. Another option is oxcarbazepine. The efficacy of these anticonvulsants has been proved in several randomized controlled trials, however it's not always well tolerated. They may cause hepatotoxicity or leukopenia. All patients should have intermittent labs to monitor for this including CBCs and LFTs.

Surgery As Last Resort

Surgery Last Resort

Surgery may be indicated if pharmacological treatment fail. Procedures like transcutaneous or microvascular decompression, aim to treat vascular compression of CN V nerve roots (Classic Trigeminal Neuralgia) by injuring the sensory fibers of the trigeminal nerve, cutting of their transmission of

