

A BRIEF REVIEW ON NEURALGIA

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ABSTRACT

Neuralgia refers to the combination of two Greek words “neuron” meaning ‘nerve’ + “algos” meaning ‘pain’. If anyone is frequently experiencing any sort of burning or severe stabbing pain, then it indicates the existence of damaged or irritated nerve. This kind of typical pain is known as **Neuralgia** which can occur throughout the body & face. Neuralgia is characterised by stabbing, burning and often severe pain due to irritated or damaged nerves. The damaged nerve may be anywhere in the body, but is most common in face & neck and the damage may be caused by several things, including: aging, diseases etc. Generally, neuralgia isn’t an illness, but a symptom of injury or any other particular disorders. Normally, pain is triggered by the stimulation of pain receptors but in case of neuralgia, pain is instead caused by an abnormal change in the structure or function of the nerves. The term neuralgia is also used to refer the pain associated with sciatica and brachial plexopathy.

KEYWORDS: Introduction, epidemiology, etiology, types, clinical manifestations, diagnosis, complications, risk factors, treatment.

INTRODUCTION

Neuralgia is defined as an intense burning or stabbing pain caused by irritation or damage of one or more nerves.^[1] The pain may usually brief but may become severe. Sometimes it often feels like shooting pain at the affected area. Various types of neuralgia may occur based on different causes, including tooth decay, eye strain, or shingles (an infection caused by the herpes zoster virus). Pain may occur anywhere in the body based on the type of irritated or damaged nerve.

Epidemiology^[1]

The prevalence of neuralgia is based on the type of neuralgia occurred to the patient.

- Trigeminal neuralgia (TN) has a prevalence of 0.1 – 0.2 per thousand and an incidence ranging from about 4-5/ 100,000/year up to 20/100,000/year after age 60.
- More common in females than in men.
- 52-58 years is the mean age onset.

Etiology

Neuralgia has many possible causes which includes the following,

- Aging
- Heavy pressure on the nerves from bones, ligament, blood vessels or tumor
- Infections such as shingles, Lyme disease or HIV
- Diseases such as Diabetes, multiple sclerosis or kidney diseases

Less common causes include,

- Chronic kidney disease
- Porphyria
- Medications prescribed for cancer
- Fluoroquinolone antibiotics, used to treat infections
- Trauma such as surgery
- Chemical irritation

Types of Neuralgia^[6,9,14,12]

Depending on the cause, neuralgia may be primary (unknown cause) or secondary (by a particular cause)

The most frequent types are CRANIAL NEURALGIAS as following;

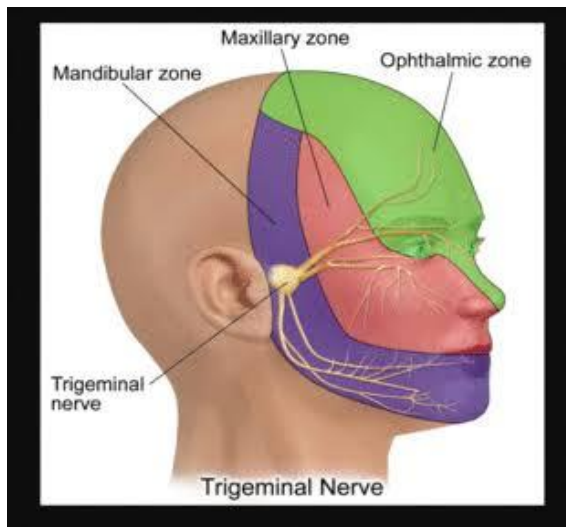
1. Trigeminal neuralgia
2. Glossopharyngeal neuralgia
3. Occipital neuralgia
4. Post-herpetic neuralgia

Trigeminal Neuralgia^[11,15]

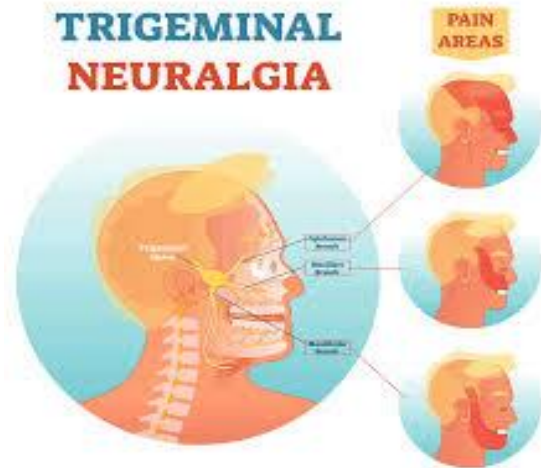
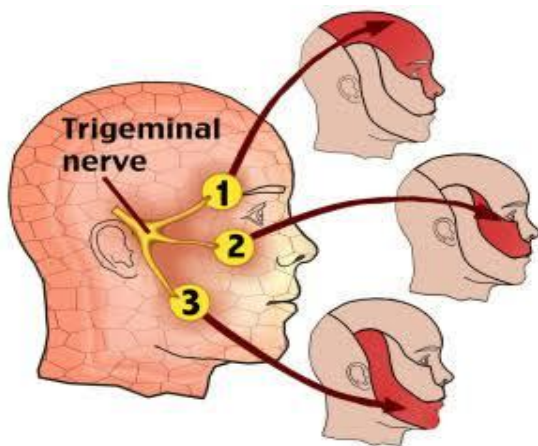
Trigeminal neuralgia is a neuropathic disorder characterised by episodes of intense pain in the face originating from the one or more branches of the fifth cranial nerve (Trigeminal nerve)

Synonyms: Tic douloureux, Trifacial neuralgia, Fothergill’s neuralgia.

Trigeminal nerve is the IXth cranial nerve (mixed) which is mainly responsible for sensory data such as tactition, thermoception, and nociception i.e., pressure, temperature & pain originating from the face.



- Trigeminal neuralgia causes neuralgic pain in the face by affecting the trigeminal nerve.
- It usually affects the second or third of the three trigeminal nerve branches which causes neuralgic pain in the nasal and upper jaw areas, although sometimes can manifest in several places.
- It is most common in women aged over 50
- It is found in 3-4% of people with Multiple sclerosis.
- It causes pain the face, usually on one side, and is most common in elderly.



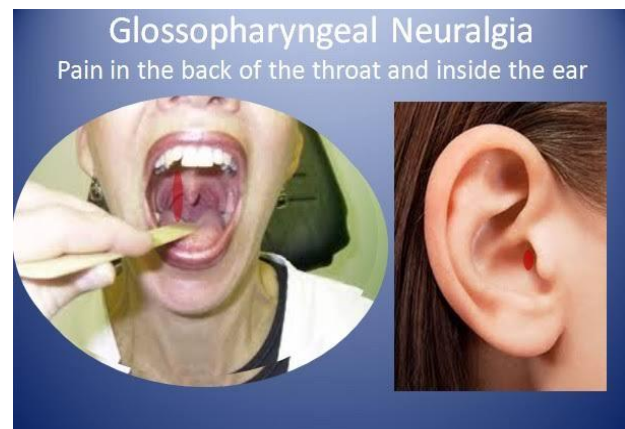
Trigeminal neuralgia showing pain areas

Causes

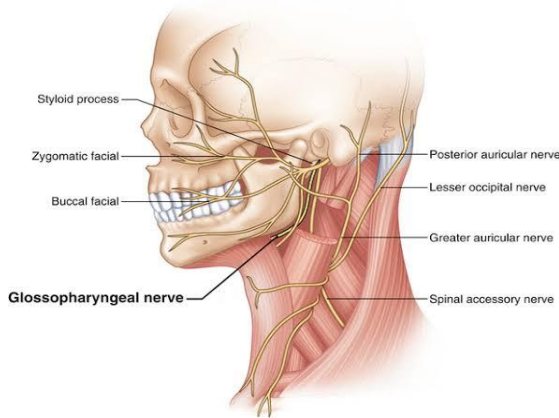
- Pressure on the trigeminal nerve
- Aging is the main factor that can trigger the issue
- Compression or throbbing of trigeminal nerve
- Facial trauma, stroke, and surgical injuries
- Enlarged or lengthened blood vessel of superior cerebellar artery

Glossopharyngeal Neuralgia^[4]

Glossopharyngeal neuralgia is a rare pain syndrome in which there are repeated episodes of severe pain in the tongue, throat, ear and tonsils caused by ninth cranial nerve (Glossopharyngeal nerve). This pain can last from a few seconds to minutes.

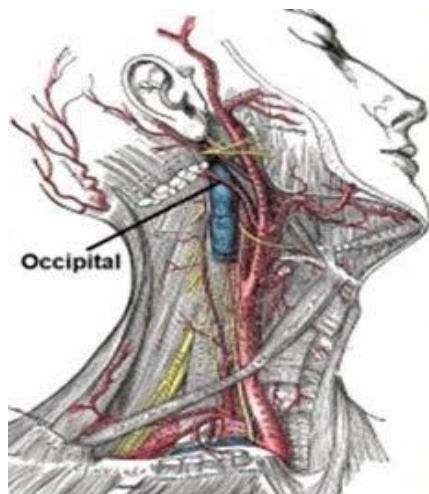
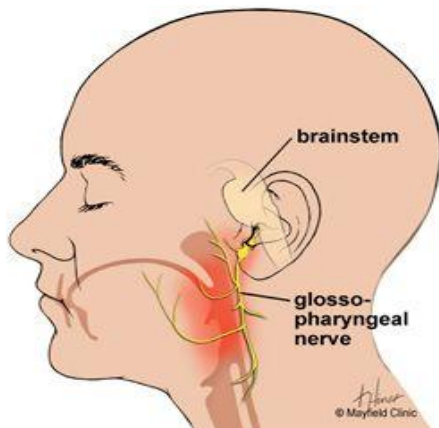


Glossopharyngeal nerve is the mixed nerve which carries sensory, efferent motor, and parasympathetic fibers.



Glossopharyngeal nerve

- Pain radiates from throat to ear because of tympanic branch of IX nerve.
- It is of 2 types
 1. Classical
 2. Symptomatic
- Classical type is obtained by arterial compression of the nerve at courses through jugular foramen.
- Symptomatic type is obtained by under lying cause such as oropharyngeal tumours pagetic bone or calcified stylohyoid ligament.



Radiation of pain from throat to ear

Causes

- Irritation and blood vessels pressing on the glossopharyngeal nerve.
- Disease or infections
- Aging & is commonly seen in people over age 40
- Aneurysm
- Occurs more often in men than women
- Acute infection of the pharynx

Occipital Neuralgia^[3,4,10]

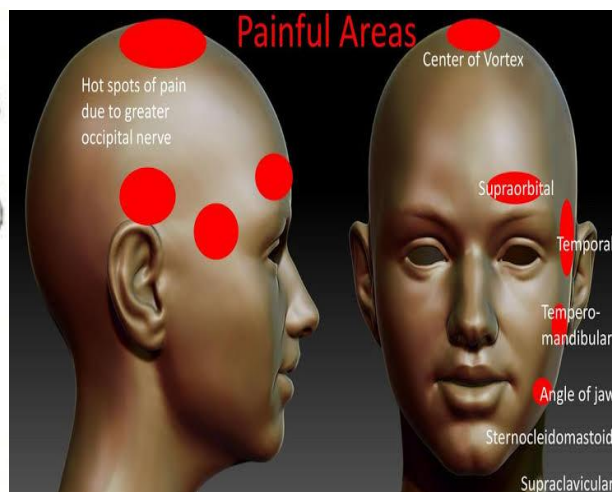
Occipital neuralgia can be characterised by the pain in the nerves that run from the top of the spinal cord up through the scalp, called occipital nerves, are inflamed or injured.

- This causes headache that feel like piercing, throbbing or shock-like pain in the upper neck, back of the head or behind the ears.
- It is also known as Arnold’s neuralgia.
- Unlike migraine and other types of headache.

Causes

Exact cause is unknown, others may include;

- Osteoarthritis
- Diabetes
- Gout
- Infections
- Blood vessel inflammation
- Tumours affecting the C2 & C3 nerve roots
- Trauma
- Neck tension or tight neck muscles
- Cervical disc disease

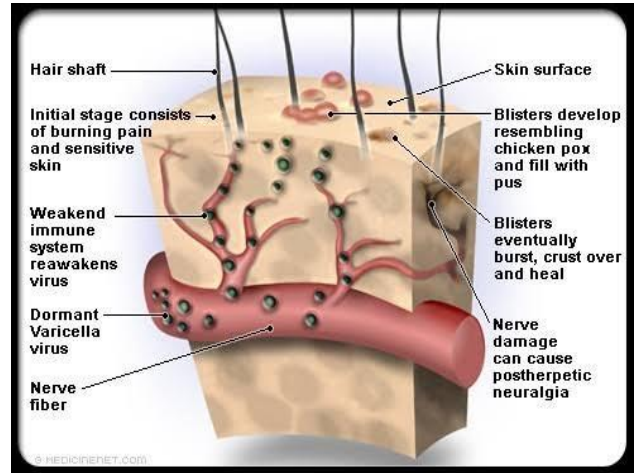


Postherpetic Neuralgia^[5,7,9]

Post-herpetic neuralgia (PHN) is a chronic neuropathic pain that persists for more than one month even after the disappearance of the rash. It is a very common complication of shingles or herpes zoster.



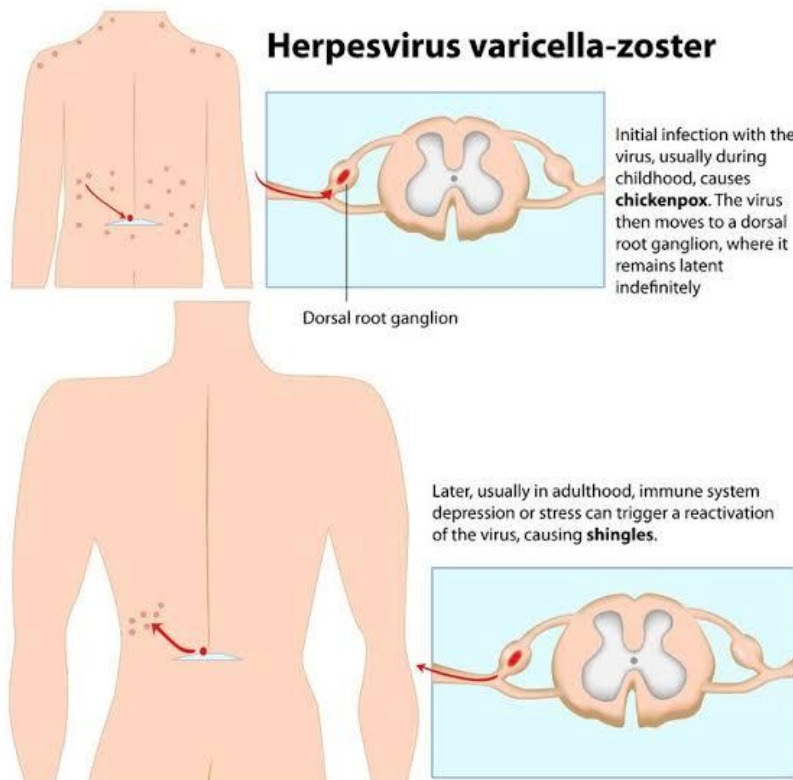
- It is the 2nd leading cause of suicide in patients >70 years old.



- It occurs in the dermatome affected by Herpes zoster virus (Shingles)
- Shingles or herpes zoster virus is a viral infection of the nerves, which results in formation of rash or lesions on the skin.
- It has loss of myelinated sensory nerves with residual C fibers.

Causes

- Occur as a result of shingles which is caused by the herpes varicella-zoster virus, the virus which is known as chickenpox.
- It is caused by viral damage to nerve cells.



Other Minor Types of Neuralgia

The remaining secondary minor types of neuralgias include the following

- Articulotemporal neuralgia
- Supraorbital & supratrochlear neuralgia (or) swimmers headache
- Peripheral neuralgia
- Intercoastal neuralgia
- Diabetic neuropathy etc.

Clinical Manifestations

In general neuralgia causes intense & distinct symptoms, including,

- Sudden episodes of extreme shooting, stabbing or piercing pain at the nerves
- Persistent aching or burning pain
- Muscle weakness
- Loss of muscle or atrophy
- Involuntary muscle twitching or cramping
- Tingling or numbness
- Lancinating and intense pain
- Facial twitching
- Localised pain
- The affected area may be sensitive to touch & any pressure leads to pain
- Sensitivity to light

Pain can be triggered by routine acts like

- Brushing your teeth
- Putting on makeup
- Shaving
- Speaking
- A breeze on your face
- Eating or drinking
- Touching your face

Diagnosis^[2,3,15]

❖ Neurological examination

To determine the specific areas of pain

❖ Dental examination

To check any abscesses that may be irritating nearby nerves

❖ Blood examination

To check for any infection

❖ X-rays

To see if the infected nerves are being compressed

❖ Brain imaging

To visualize anatomic landmarks

❖ MRI

❖ CT Scan

❖ History

❖ Diagnostic LA blocks

❖ Clinical Examination

Complications

- Depression
- Double vision
- Jaw weakness
- Loss of corneal reflex
- Blurred vision
- Chewing problems
- Dysesthesia
- Paralysis
- Infection
- Fatigue
- Difficulty sleeping
- Lack of appetite

Risk Factors

- Age & gender are the major risk factors
- Women over the age of 50 are at high risk to develop this condition
- Disease condition people with diseases like hypertension and diabetes people are prone to develop this condition

Treatment^[6]

Non pharmacological Treatment

The nondrug treatment of neuropathic pain can be treated by the following methods:

- Physical therapy
- Surgical therapy – to relieve the pressure on the nerve
- Psychocorporal therapy
- Psychotherapeutic treatment
- Hypnosis
- Acupuncture
- Transcutaneous Electrical Nerve Stimulation (TENS)
- Better control of blood sugar levels.

Pharmacological Treatment^[8,10]

Treatment depends on the cause, location, and severity of the pain.

Medicines to control pain may include

Self treatment: Using any kind of creams for topical application containing capsaicin, aspirin or lidocaine may help to reduce the nerve pain.

Antidepressants such as amitriptyline or nortriptyline can be used effectively in treating nerve pain.

Anti-convulsive drugs such as carbamazepine or oxcarbazepine are effective for trigeminal neuralgia.

Short term narcotic pain medications such as codeine are also prescribed to reduce severe intense pain.

Antispasmodic agents (Muscle relaxing agents) such as baclofen (Gablofen, Lioresal) can be used alone or in combination with carbamazepine.

Botox injections can be used to relieve pain from trigeminal neuralgia for the people who are resistant to medications, Eg: Onabotulinumtoxin A (Botox). Glycerol injections, radiofrequency thermal lesioning, balloon compression can also be used for trigeminal neuralgia.

Surgical procedures may include; Microvascular decompression, Brain stereotactic radiosurgery (gamma knife).

CONCLUSION

Neuralgia represents the painful conditions of the localised pain occurring in a specific nerve dermatome. Neuralgias may be recognised by the specific characteristics, clinical presentations and causes including pain in a restricted area of the nerve.

Neuralgia doesnot have any definitive cure. But the treatment used for neuralgia is used to relieve from the symptoms. Few variations of neuralgia can be recovered

over time with some medications. Research is being done to develop more treatments for neuralgia.

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