

Trigeminal neuralgia in details

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Abstract

Also known as Suicide disease which affects 150,000 per year. Trigeminal neuralgia is a chronic pain disorder of face characterized by electric shock limited to divisions of one or more divisions of trigeminal nerve. There are two types known one is Typical trigeminal neuralgia (TN1) and other is Atypical trigeminal neuralgia (TN2). TN1 is more severe than TN2 and has sudden shock like pain whereas TN2 has constant burning pain. Treatments include medication such as Anticonvulsants and Surgery has 7 procedures which are used to relief pain for a period of time. Trigeminal neuralgia is also known as Tic doloureux Prospolgia, Fothergill's disease and lastly Suicide disease.

Keywords: Neuralgia, Prospolgia, Fothergill's disease.

Introduction

According to IASP (International Association for the study of pain) it defines TN as 'Sudden usually unilateral severe brief stabbing recurrent pain distribution of more branches of 5th C.N. According to International headache society (IHS) it defines TN as 'painful unilateral affliction of face characterized by brief electric shock limited to division of one or more divisions of trigeminal nerve. Basically trigeminal neuralgia is a condition characterized by sudden attack of pain lasting from few hours to several days which is confined to distribution of one or more divisions of trigeminal nerve. There are mainly two types of trigeminal neuralgia -typical trigeminal neuralgia (TN 1) and atypical trigeminal neuralgia (TN 2). TN1 are severe as compared to TN2. Shock like pain is observed in TN1 and burning sensation type pain is observed in TN2. Pain associated with TN would vary and mainly depends on type of it and may range from sudden to severe constant aching.

Discussion

Trigeminal neuralgia can be occurred due to variety of conditions. But mainly caused by blood vessels which press the trigeminal nerve as it exits the brain stem. Compression causes damage to protective covering around myelin sheath. Injury to myelin sheath causes such chronic conditions. These may be caused due to results of surgeries such as sinus surgery, oral surgery,

craniofacial surgery facial trauma which produces severe facial pain.

These chronic disorder affects more in women than in men.

These may be triggered by vibration when washing the face, shaving or applying makeups, eating sometimes in severe conditions exposure to wind may also stimulates pain.

Methods of treatment

Treatment methods includes two types- Medication and Surgery. In medication Anticonvulsant medicines are mostly used to treat these chronic conditions. They are more effective in case of TN1. Anticonvulsant medication includes Carbamazepine, phenytoin, valproic acid, Gabapentin.

There are 8 different type of surgical procedure which are followed-

Rhizotomy, ballon compression, glycerol injection, radio-frequency thermal lesioning (RF lesion), stereotactic radiosurgery, microvascular decompression, neurectomy.

In rhizotomy nerves fibres are damaged which cause pain. These blocks pain and cause some degree of sensory loss and facial numbness.

Ballon compression procedures generally isolate the nerves. Cannula a tube like structure is inserted through muscles of cheek and is guided to one of the branches of trigeminal nerve. The catheter with ballon

tip is threaded and is inflated after sometimes so that it squeeze parts of nerve against hard edges of brain. These is done under GA. Pain usually reliefs for one to two years.

In Glycerol injection procedures patients at first is sedated with IV medication. Then a needle is placed through cheek which is guided through base of skull to mandibular divisions of trigeminal nerves. Then it is moved with pockets of spinal fluids that surrounds trigeminal nerve centre. Pain relief usually lasts a year. These can be repeated multiple times.

RF lesion procedures are performed by anesthetizing and then hollow needle is passed through cheeks following the above procedures. After that electric currents are passed through needle which causes a tingling sensation where needle tip rests. Then it is gradually heated with an electrode. Pain can relived upto 3-4 years. After sensation, electrode and needles are removed than person is awakened.

Stereotactic surgery also known as cyber knife uses basically computer imaging to high focused beams of radiation at where the nerve exits the brain stem and slows the process of formation of lesions. According to International Radiosurgery Association reports that between 50-78 percent of people with TN are treated with cyber knife experience excellent pain relief within a week.

Microvascular depression (MVD) is the most invasive surgery to treat TN. It has highest pain relief upto 12 years. A small opening is made through mastoid behind ear while viewing trigeminal nerve through endoscope that is compressing soft cushions between nerve vessels. The main goal is to produce numbness in face after surgery.

Neurectomy also called partial nerve section which involves cutting part of nerve only on superficial branch of trigeminal nerve. This procedure produces more long lasting numbness of face that is supplied by nerve.

Conclusion

About 150,000 people's are diagnosed with trigeminal neuralgia per year. Whenever electric shock sensation is felt in trigeminal divisions one must visit physician so that proper examination is done and these chronic condition is prevented firstly with Anticonvulsants. If

later detected only treatment is surgery which are used to relief pain for few extension periods complete pain relief is not achieved.

Conflict of interest

None.

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