

Peripheral Neurectomy in a Patient with Trigeminal Neuralgia: A Clinical Case Report

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Abstract

Trigeminal Neuralgia is a chronic pain condition that affects the trigeminal nerve in the face and infests as episodes of severe, shooting or jabbing pain that may feel like an electric shock. It is the most discussed cause of unilateral facial pain in literature with various treatment options. Most of the treatment options are still approached under general anesthesia and are not common in rural practice or elder patients. Peripheral neurectomy is a minimally invasive procedure, which consists of surgical avulsion of terminal branches of the trigeminal nerve. This article presents a case of an elder patient from rural background affected by Trigeminal Neuralgia treated by peripheral neurectomy.

Keywords: Trigeminal Neuralgia (TN), fothergill’s disease, neurectomy, inferior alveolar nerve (IAN)

Introduction

Trigeminal neuralgia (TN) is defined by The International Association for The Study of Pain (IASP), as “sudden usually unilateral severe, brief, stabbing, recurrent episodes of pain in the distribution of one or more branches of the trigeminal nerve”^[1] The annual incidence of TN is low, 4 to 5 cases per 100,000.^[2] It is characterized by sharp, sudden, severe, lancinating, paroxysmal, recurring pain in one or more branches of Trigeminal Nerve. The pain can be triggered by various normal routine works like shaving, washing, talking, brushing etc. Also known as tic douloureux, prosopalgia, suicide disease, and fothergill’s disease.^[3]

Some generalized patterns that help in the diagnosis of Trigeminal Neuralgia are:^[4]

1. Episodes of severe, shooting or jabbing pain that may feel like an electric shock.

2. Spontaneous attacks of pain or attacks triggered by things such as touching the face, chewing, speaking or brushing teeth.
3. Bouts of pain lasting from a few seconds to several minutes.
4. Episodes of several attacks lasting days, weeks, months or longer — some people have periods when they experience no pain.
5. Constant aching, burning feeling that may occur before it evolves into the spasm-like pain of trigeminal neuralgia.
6. Pain in areas supplied by the trigeminal nerve, including the cheek, jaw, teeth, gums, lips, or less often the eye and forehead.
7. Pain affecting one side of the face at a time, though may rarely affect both sides of the face.
8. Pain focused in one spot or spread in a wider pattern.
9. Attacks that become more frequent and intense over time

Sweet's Criteria to Diagnose: ^[5]

1. The pain is paroxysmal.
2. The pain may be provoked by light touch to face (trigger zone).
3. The pain is confined to trigeminal distribution.
4. The pain is unilateral.
5. The clinical sensory examination is normal.

Conservative Approach for the Treatment:

Treatment for TGN basically depends on conservative or surgical approach. Conservative treatment includes drug therapy i.e. Carbamazepine, Lamotrigene, Baclofen, etc. Whereas surgical treatment includes Peripheral Neurectomy or Microvascular Decompression (MVD). Other treatment options are also available like Gamma Knife Surgery, Radiofrequency Neurolysis etc.

Clinical Case Report

Clinical History: A 67 year old patient reported to Department of OMFS with a chief complaint of pain on left side of the face since 4 years which was sharp, sudden, jerks of electric current starts on touching left cheek, alveolus and lower lip. Patient also presented history of previous extractions because of same reason but the pain still persists. From last 4 years patient is on Carbamazepine 600mg (2000mg thrice) when the dosage was increased it results in vertigo and drowsiness to the patient and no relief in pain was achieved. OPG showed presence of impacted right canine (Figure.1); but the patient doesn't want any surgery for the impacted canine as it is asymptomatic. Blood investigations were done which were in the normal range. Diagnostic block was given 1st with placebo then with local anesthetic solution. Pain subsided after LA injection which confirmed our diagnosis. So; the treatment plan of peripheral neurectomy under LA was planned. Inferior Alveolar Nerve Block (IANB) was given with local anesthesia (Lignocaine 2% 1:80000).

Dr. Ginwala incision (Figure.2) was given, Inferior Alveolar Nerve was identified and exposed (Figure.3). Vestibular incision was given in premolar region to expose mental nerve and its branches. Inferior Alveolar Nerve was tied with suture and clamped with artery forcep and retracted to check the movement of Mental Nerve. After confining the Inferior Alveolar Nerve (IAN) and Mental Nerve, the nerve was avulsed from soft tissues. With the help of artery forcep, nerve was winded along and avulsed and sent for histopathological examination. Bone wax was used for blocking the foramen and layered closure was done with 3-0 silk suture after copious irrigation. The patient is asymptomatic after 6 months and on regular follow-up.

Discussion

Trigeminal Neuralgia Trigeminal neuralgia (TN) is a pathology characterized by paroxysmal pain so excruciating and sudden, like a shock, which lasts a few seconds to two minutes.^[6] Estimated incidence of trigeminal neuralgia is about 4.5 to 12.6 per 100,000 people per annum and its incidence increases with age. ^[7] Elder patients report with various systemic problems which make the patient unfit for major oral surgical procedures. It usually affects right side of face with mandibular division most commonly involved. ^[8] The rural areas poor nutrition, poor socioeconomic status, psychological stress also plays an important role, resulting in more incidence. Lack of advanced treatment modalities for neurosurgical procedures makes quality of life more vulnerable with TGN. Also, facilities for major surgical procedures are not commonly available in rural areas, if available then socioeconomically challenged population can't afford. Therefore, Peripheral Neurectomy under Local Anesthesia is the best alternate treatment for elder patients with poor socioeconomic status.

Conclusion

This case report presents the treatment of TGN of Inferior Alveolar Nerve by Peripheral Neurectomy in a patient who is not fit for major surgical procedures. Peripheral Neurectomy is an established method for treatment of TGN and can be effectively and safely done in patients which are not fit for or can't afford major surgical procedures.

References

1. Merskey H, Bogduk N. Classification of chronic pain. Descriptors of chronic pain syndromes and definitions of pain terms 2nd Edn. Seattle: IASP Press, 1994.
2. Andrew E Graff, Andrew S Thomas, Aaron D Reed, William K Skinner. Frameless Stereotactic

Radiosurgery, a Feasible Alternative to the Frame-Based Technique for the Treatment of Refractory Trigeminal Neuralgia. *Cureus*. 2016 Apr; 8(4): e571.

3. Dharti N, Rajan P, Richa Wadhawan R, Solanki G. An Old Tale of Trigeminal Neuralgia in a Novel & Comprehensive Manner. *Acta Biomedica Scientia*. 2016; 3(3):169-175.
4. Trigeminal Neuralgia. Mayo Clinic. Mayo Clinic Family Health Book; 5th Edition.
5. Lamichhane NS, Du X, Li S, Poudel DC. Effectiveness of peripheral neurectomy in refractory cases of trigeminal neuralgia. *J Orofac Sci* 2016;8:86-91
6. Santos, MM., Freire, AR., Rossi, AC., Prado, FB, Caria, PHF.2 and Botacin, PR. Trigeminal neuralgia: literature review. *J. Morphol. Sci.*, 2013, vol. 30, no. 1, p. 1-5.
7. Koopman JS, Dieleman JP, Huygen FJ, de Mos M, Martin CG, Sturkenboom MC. Incidence of facial pain in the general population. *Pain* 2009; 147: 122-7
8. Tanweer Hussain Bangash, Trigeminal Neuralgia: Frequency of Occurrence in Different Nerve Branches. *Anesth Pain Med*. 2011, Autumn; 1(2): 70-72.