International Journal Of

Recent Scientific Research

ISSN: 0976-3031

Volume: 7(4) April -2016

BILATERAL TRIGEMINAL NEURALGIA - A RARE CASE REPORT AND ITS PAIN MANAGEMENT

Girish Aggarwal., Rajesh Bansal., Jyoti Mittal., Gourav Popli., Shikha Kumar and Sumedha Mohan

THE OFFICIAL PUBLICATION OF
INTERNATIONAL JOURNAL OF RECENT SCIENTIFIC RESEARCH (IJRSR)
http://www.recentscientific.com/ recentscientific@gmail.com

ISSN: 0976-3031

Available Online at http://www.recentscientific.com

International Journal of Recent Scientific Research
Vol. 7, Issue, 4, pp. 10536-10538, April, 2016

International Journal of Recent Scientific Research

Research Article

BILATERAL TRIGEMINAL NEURALGIA - A RARE CASE REPORT AND ITS PAIN MANAGEMENT

Girish Aggarwal[1]., Rajesh Bansal[2]., Jyoti Mittal[3]., Gourav Popli[4*]., Shikha Kumar[5] and Sumedha Mohan[6]

[1, 2, 3] Department of Oral and Maxillofacial Surgery, Shaheed Kartar Singh Sarabha Dental College, Ludhiana
[4]Department of Oral and Maxillofacial Surgery, Subharti Dental College, Meerut
[5]Department of Oral and Maxillofacial Surgery, M.M College of Dental Sciences and Research, Mullana
[6]Department of Periodontics and Oral Implantology, Babu Banarasi Das College of Dental Sciences, Lucknow

ARTICLE INFO

Article History:

Received 29th January, 2016
Received in revised form 19th February, 2016
Accepted 25th March, 2016
Published online 28th April, 2016

ABSTRACT

Trigeminal Neuralgia (TN) is a severe debilitating neurological hyperexcitable disease affecting the branches of Trigeminal nerve. The condition causes severe shock like pain which is difficult to diagnose and thus, one of the major cause for sequential avoidable extractions due to wrong diagnosis. Usually a unilateral disease, mostly being treated by only medications in the Asian subcontinent. Hereby, authors report a rare case of Trigeminal neuralgia involving bilateral mandibular branches of Trigeminal nerve and which showed almost complete relief with alternative medications other than the Carbamazepine. Authors believe that current case report will add on to the academic literatrure and will also be helpful to clinicians in deciding the alternative medicinal treatment plan.

INTRODUCTION

Pain is an unpleasant sensory experience produced by noxious stimuli, inflammation or damage to the nervous system. Patients suffer because of the long-lasting uncomfortable feeling. Therefore, there is a pressing need to find a long-acting and effective therapeutics to alleviate the symptoms of different forms of pain[1]. Trigeminal neuralgia is defined as sudden, usually unilateral, severe, brief, stabbing, lancinating, recurring, pain in the distribution of one or more branches of fifth cranial nerve [2]. Trigeminal neuralgia (TN) is a rare form of chronic facial pain. Although not life-threatening, it can be excruciatingly painful and extraordinarily debilitating[3]. Its uniqueness and peculiarity can be ascertained by the fact that TN may present to and be managed by dentists, neurologists, neurosurgeons, oral surgeons and ear, nose and throat surgeons. The dental surgeon is often the first to be consulted when patients confront this tormenting condition and should be familiar with it, in order to make an accurate diagnosis and initiate treatment[4]. TN has an occurrence of approximately 4/100,000 individuals and occurs in both genders, having a higher occurrence in women, with 5.9 cases per 100,000 females, as compared with men at 3.4 cases per 100,000 males. It is a disease of older age groups, with a peak in the 50- to 70-year age group, and is rare below 40 [5].

The pain is nearly always unilateral, and may occur repeatedly throughout the day. The path physiology of TN is thought to be focal mechanical compression of the trigeminal nerve at a point close to the brainstem, especially by an artery or tumor. This leads to demyelination of the nerve and the generation of ectopic impulses that spread ephaptically to precipitate the typical attack of TN. The management of TN is initially medical. Carbamazepine (CBZ) continues to be the treatment of choice, however a substantial proportion of patients tolerate this drug poorly, predominantly because of side effects that include drowsiness, accommodation disorders, hepatitis, derangement in hepatic enzymes, renal dysfunction, congestive heart failure, delayed multi-organ failure, leucopenia, thrombocytopenia etc. If pain relief for TN is incomplete with CBZ or it produces side effects, other anticonvulsant drugs are suggested as alternatives, such as LTG, baclofen, phenytoin, gabapentin, clonazepam, valproate, mexiletine, and topiramate[6].

*Corresponding author: **Gourav Popli***
Department of Oral and Maxillofacial Surgery, Subharti Dental College, Meerut

The treatment of TN which is resistant to medical treatment has benefited from many surgical techniques. Opinions differ regarding the best surgical treatment. Some favor the microvascular decompression (MVD) of the trigeminal nerve or partial trigeminal rhizotomy whereas others prefer percutaneous procedures like glycerol rhizolysis, radiofrequency thermocoagulation (RFT), and balloon compression that injure the trigeminal nerve, the Gasserian ganglion or retrogasserian rootless so that peripheral stimuli no longer trigger an attack of TN. These procedures have little mortality and morbidity and require little or no general anesthesia. They are therefore useful for the elderly patients, those who do not wish to undergo major intracranial operation. Also they are less time consuming and less costly treatments [7].

Case Description

A 66 years old lady from (Punjab) India having history of severe, sharp, shooting and shock like pain. Patient was in painful condition with a history of severe pain first on right side V3 regions, lasting 5 to 10 seconds in mandible, worsening by talking, chewing, and with a decrease in temperature. She was being treated with chlorpromazine (3 mg every eight hours) and carbamazepine (200 mg every eight hours) and had a partial relief of symptoms. Patient gave history of discontinued medication for one month due to side effects of this medication. Discontinuation also aggrevated the symptoms. Imagings of the head (CT and MRI) were advised, which revealed normal study. Authors preferred the conversion of medication from carbamazepine and chlorpromazine to gabapentin (1,200 mg/day) and amitriptyline (12.5 mg) at night for six months, keeping in mind the side effects related to previous medications. The patient presented a good resolution of symptoms after 6 months of treatment with only mild pain when it was cold. After one month of completion of treatment patient developed similar pain in the region of the left mandible and same treatment was continued which was given in right side of mandible.

DISCUSSION

In general, trigeminal neuralgia is unilateral affecting the maxillary (35%), mandibular (30%), maxillary and mandibular (20%), ophthalmic and maxillary (10%), and ophthalmic (4%) branches, and all branches (1%) of the trigeminal nerve. It has an incidence of 4.3 per 100,000/year, of which approximately 3% are bilateral [8].The most common disorders involved in the differential diagnosis include: bursts of headaches, dental pain, giant cell arteritis, gloss opharyngeal nerve neuralgia, intracranial tumor, migraine, multiple sclerosis, otitis media, paroxysmal hemicrania, postherpetic neuralgia, sinusitis, SUNCT headache (Short-lasting, Unilateral, Neuralgiform pain with Conjunctival injection and Tearing), temporomandibular joint syndrome, and trigeminal neuralgia [9].

White and Sweet proposed a diagnostic criterion for TN (10). The criteria includes 5 major features-

- Paroxysmal pain-Paroxysmal attacks of pain are the key feature, and invariably the presenting complaint. TN has an electric shock like pain, sudden in onset and often severe in intensity, resulting in facial grimace.TN patients are typically symptom free between attacks. A patient who experiences significant dull pain between attacks does not fit TN diagnostic criteria.
- Pain provoked by light touch to the face. (Trigger zones)- A TN “trigger zone” is an area of facial skin or oral mucosa where low intensity mechanical stimulation (light touch, an air puff, or even hair bending can elicit typical facial pain. TN trigger zones are few millimeters in size and seen exclusively in the peri-oral regions.
- Pain confined to the trigeminal nerve distribution-Pain paroxysms in TN are confined to the sensory distribution of the trigeminal nerve one side. The lancinating pain attacks occur most frequently in the third trigeminal division and radiate along the mandible. Less often, pain occurs in the second division or in both divisions. Rarely, first division pain occurs. Characterstically, pain attacks are stereotyped i.e each attack has a similar quality, location, and intensity.
- Pain is unilateral. Right side of the face is more commonly involved than the left side. This could be attributed to the narrower foramens (Rotundum and Ovale) on the right side.
- Normal clinical sensory examination.
- Carbamazepine is the drug of choice for the initial treatment of trigeminal neuralgia. Traditionally, carbamazepine, an anticonvulsant medication, has been used as a first-line drug for the treatment of trigeminal neuralgia [11]. In fact, some clinicians believe that if orofacial pain does not respond to carbamazepine, then it is not trigeminal neuralgia pain. (We, however, do not endorse this concept.) Carbamazepine use can lead to intolerable adverse effects involving the central nervous system. Adverse effects can include drowsiness, fatigue or extreme exhaustion, dizziness, nausea, and nystagmus. Problems with memory, vision (eg, diplopia), and other mental activities may occur. Also, patients taking the medication may develop liver dysfunction and, rarely, hematosuppression [12].
- Phenytoin. Phenytoin is the second treatment of choice for trigeminal neuralgia. If pain relief is not obtained after reaching adequate serum levels for 3 weeks, the drug should be discontinued because higher doses may lead to toxicity.
- Oxcarbazepine. Oxcarbazepine is also an anticonvulsant drug. It is a 10-keto analogue of carbamazepine and is at least as effective
- Lamotrigine. Lamotrigine is a relatively new anticonvulsant drug used in the treatment of partial and generalized seizures. Recent studies show lamotrigine treatment provided pain relief in patients with otherwise treatment-resistant trigeminal neuralgia, especially in those whose pain was not controlled by or who could not tolerate carbamazepine.[13,14]
- Gabapentin. Gabapentin is becoming increasingly popular as a treatment option for trigeminal neuralgia and has a relatively benign adverse-effect profile. Gabapentin is considered a second-line medication and definitive scientific evidence of its efficacy in the treatment of trigeminal neuralgia does not exist. Its clinically effective dose when used as monotherapy varies from 900 to 1,200 mg/day, but it can be as high as 3,600 mg/day. Gabapentin does not cause direct

reduction of ectopic discharges in the trigeminal ganglion, but it interferes with nociceptive transmission in the central nervous system, acting on the α2δ subunit of voltage-dependent calcium channels [14, 15]. The main collateral effects of this drug include dizziness and somnolence, and confusion, ataxia, and peripheral edema are associated with high doses [15].

CONCLUSION

Trigeminal neuralgia has long been recognized by medical professionals. However, it is still an enigmatic disorder, and its management remains controversial. Carbamazepine is the first choice for the treatment of trigeminal neuralgia; however, the use of gabapentin as the first pharmacological choice or in cases refractory to conventional therapy has been increasing.

References

1. A closer look to botulinum neurotoxin type A-induced analgesia
2. Malik N.A. Trigeminal neuralgia. In: Text book of oral and maxillofacial surgery, 3rd edition; 2009
3. Scrivani SJ, Mathews ES, Maciewicz RJ. Trigeminal neuralgia. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2005; 100: 527-38.
4. Zakrzewska JM. Trigeminal neuralgia. London: WB Saunders; 1995
5. Zakrzewska JM. Trigeminal neuralgia and facial pain. Semin Pain Med 2004; 2:76-84.
6. Lamotrigine for trigeminal neuralgia: Efficacy and safety in comparison with carbamazepine
7. Fouad W Management of trigeminal neuralgia by radiofrequency thermocoagulation Alexandria Journal of Medicine (2011) 47, 79–86
8. Canavero S, Bonicalzi V - Drug therapy of trigeminal neuralgia. Expert Rev Neurotherap 2006; 6:429-440.
9. Oliveira CMB, Baaklini LG, Issy AM, Sakata RK - Bilateral trigeminal neuralgia. Br J Anaesth Case report 2009; 59: 4: 476-480
10. .White JC, Sweet WH. Pain and the neurosurgeon. Springfield (III); Charles C. Thomas; 1969.
11. Perkin GD. Trigeminal Neuralgia. Current treatment options in neurology. Curr Treat Options Neurol 1999; 1: 458–65.
12. Spina E, Pisani F, Perucca E. Clinically significant pharmacokinetic drug interactions with carbamazepine. An update. Clin Pharmacokinet 1996 Sep; 31:198–214.
13. McCleane GJ. Lamotrigine in the management of neuropathic pain: a review of the literature. *Clin J Pain* 2000; 16: 321–6.
14. Leandri M., Lundardi G, Inglese M, et al. Lamotrigine in trigeminal neuralgia secondary to multiple sclerosis. *J Neurol* 2000; 247:556–8.
15. Khan OA. Gabapentin relieves trigeminal neuralgia in multiple sclerosis patients. Neurology 1998; 51:611–4.

****

How to cite this article:

Girish Aggarwal *et al., 2016*, Bilateral Trigeminal Neuralgia - A Rare Case Report and Its Pain Management. *Int J Recent Sci Res.* 7(4), pp. 10536-10538.

TSSN 0976-3031