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CASE REPORT

A TREATMENT OPTION FOR TIC DOULOUREUX, PERIPHERAL NEURECTOMY OF INFERIOR ALVEOLAR NERVE: A CASE REPORT

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Abstract

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Key Word- Local anaesthesia, Inferior alveolar nerve, Trigeminal neuralgia, Peripheral neurectomy, pain

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Trigeminal neuralgia is defined as sudden, sharp shooting, lancinating, severe, electric-shock-like, or stabbing, paroxysmal, recurring pain in the distribution of one or more branches of trigeminal nerve. Tic Douloureux, Prosopalgia and Fothergill's disease are the synonyms used to describe the same disease. In spite of the condition being known since centuries, it still continues to baffle the clinician and its pathogenesis remains an enigma to the medical profession. Multiple views have been hypothesized regarding its etiology but, most of the time etiology is idiopathic and simultaneously opting for many different therapies in an effort to treat this ongoing condition. This paper presents a patient with a case of trigeminal neuralgia who was suffering from severe sharp shooting pain for 2 years and treated with Carbamazepine with no significant effect. The patient was treated and cured with peripheral neurectomy under general anesthesia.

INTRODUCTION

Trigeminal neuralgia is a debilitating neuropathic pain condition that

affects basic human psychological, physical, and social needs and activities, such as touching the face, talking, eating, and drinking¹. John Fothergill In 1773 presented a paper to the Medical society of London with a full account of trigeminal neuralgia. He gave a detailed description of the condition, which includes paroxysms of unilateral facial pain, evoked by eating or speaking or touch, starting or ending abruptly, and associated with anxiety².

Trigeminal neuralgia pain is short lasting³ and the quality is commonly described as stabbing, sharp, shooting, electric shock-like, or ice-pick-like pain. In addition, 14–50% of patients also have a concomitant continuous pain in the same area as the stabbing pain⁴⁻⁶. Although majority of cases are idiopathic, the commonest cause is vascular compression by tortuous vessel (superior cerebellar artery). An inflammatory cause like meningitis can also cause trigeminal neuralgia⁷. Others causes include trigeminal root compression by arterial loops of cerebellar artery, or occasionally by tumors, cysts, arteriovenous malformations, or aneurysms. An older theory described a peripheral etiology⁸

Diagnosis:

Trigeminal neuralgia is a clinical diagnosis as the diagnostic criteria are based on patient history and necessitate

detailed history taking, followed by clinical examination. Sweet's criteria to diagnose trigeminal neuralgia are⁷:

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

Treatment options:

The approach to the treatment of trigeminal neuralgia varies greatly, but most authors agree that it should be gradual, from pharmacological therapy to very invasive, intracranial procedures. Pharmacotherapy includes the use of antiepileptic drugs like carbamazepine, with secondary drug choices being baclofen, lamotrigine, oxcarbazepine, phenytoin, gabapentin, and sodium valproate. Surgical treatment is an alternative for patients who do not respond well to medical therapy or are severely affected by their side effects. Currently available surgical options are peripheral neurectomy, Alcohol injections, Cryotherapy, Selective radio frequency thermocoagulation, Open: microvascular decompression, Percutaneous: radiofrequency rhizotomy, Retrogasserian glycerol rhizotomy, Balloon compression

of trigeminal nerve, Stereotaxic radiosurgery—Gamma knife⁹.

CASE REPORT

A 38 year old male patient reported to the Department of Oral and Maxillofacial Surgery with a chief complaint of pain on right side of face, which was sharp shooting lancinating and electric shock type lasting for few minutes, triggered on washing face, talking and eating food since 2 year. Patient gave history of visit to local dentist several time for same problem, clinician suspected odontogenic pain and extracted teeth 47, 48. In our department a detailed history was taken and comprehensive trigeminal nerve examination and cranial nerves examination was carried out. Diagnostic block in inferior alveolar nerve region with 2% lignocaine with 1:80,000 adrenaline was given, which has relieved the symptoms for 2 hours. There was recurrence of the symptoms on touching the trigger zones when once the anaesthetic effect wore off. This confirmed the involvement of inferior alveolar nerve and was suggestive of trigeminal neuralgia involving inferior alveolar nerve. The patient was not responding to higher recommended dose of carbamazepin. Pain was so severe that the patient was unable to take medicines too as intake of food, medicines also triggered the pain. Hence, the peripheral neurectomy of inferior

alveolar nerve was planned under General Anaesthesia. Inferior alveolar nerve was approached intra orally by Dr Ginwalla's incision, the nerve was identified and avulsed from the distal end (Fig-1a,1b). Vestibular incision in premolar region was made (Fig-2); the mental nerve was identified & avulsed from the mental foramen and from the soft tissues (Fig-3). The nerve was carefully separated from surrounding tissues and held with an artery forceps, the nerve was avulsed by winding around the artery forceps (Fig-3). The remaining nerve remnants were cauterized deeply. Wound closure was done in two layers using 3-0 vicryl and 3-0 silk suture for inner and outer layer respectively. The patient is asymptomatic for the last 1 year and on regular follow ups.

DISCUSSION

For the treatment of trigeminal neuralgia, carbamazepine and oxycarbamazepine is recommended as first line treatment based on clinical studies¹⁰⁻¹². Oral medication, due to its noninvasiveness, low cost and high effective rate is the first line of treatment which involves prescribing anticonvulsant^{12, 13}. Medication in the form of analgesics (paracetamol and aspirin) and anti-inflammatory tablets (ibuprofen) are ineffective for TN pain^{13, 14}. Common adverse effects of anticonvulsants include: nausea, dizziness, confusion, drowsiness,

vision problems, suicidal thoughts and allergies. The international guidelines¹⁶ further state that surgery would be a reasonable next step in the case where sodium-channel blockers (carbamazepine or oxcarbazepine) are ineffective^{12,15} thus invasive treatments can be considered and implemented depending on the suitability of the patient for the procedure^{12,15}. Surgery can provide good relief, but relapse may occur within months or years later. Neurectomy of the peripheral branches of the trigeminal nerve is the simplest, safest and minimally invasive surgical method as experienced by us. Quinn¹⁶ reported a retrospective case series of 63 patients with 112 neurectomies. A follow-up period of 0–9 years was noted, and the pain relief period of 24–32 months was reported. Grantham¹⁷ also reported on 55 patients, who had 55 neurectomies, follow-up was for 6-months to 8 years. Average pain relief period was 33.2 months. Not all patients followed up for 3 years, one was for 2 years only.

CONCLUSION

In conclusion, the originality of the present case rests on the fact that despite the severity of the symptoms and non-responsiveness to medication, surgical management was opted. The condition was so severe that, patient was unable to take oral medications on time as he was scared of (trigger zone) initiation of pain episode

while attempting to take medicines , drinking water. It is essential that high-quality evidence that compares different modalities of treatments is available to provide a reliable and balanced selection of high-quality evidence that can enable patients, physicians, to select the most effective and efficient treatment.

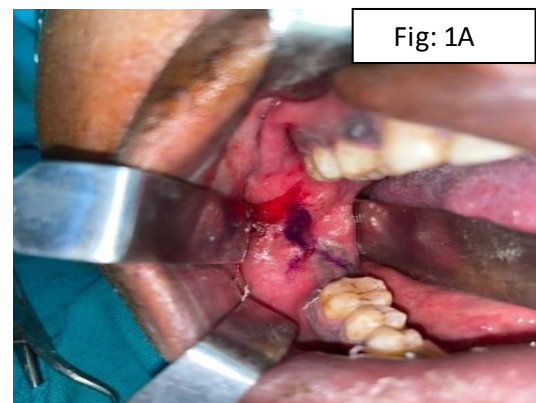


Fig 1B



Fig 2



Fig 3



Fig 4



Fig 5 Closure



Fig 6 Avulsed Nerve

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