

# Classical Trigeminal Neuralgia Managed by Peripheral Neurectomy

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## Abstract

*Trigeminal neuralgia (TN) is a chronic neuropathic pain disorder characterized by sudden, severe, electric shock-like facial pain. This case report presents a 60-year-old male with classical TN affecting the left maxillary division. The patient had a history of multiple dental extractions without pain relief. Diagnosis was made clinically and confirmed with diagnostic nerve blocks. Management included pharmacotherapy followed by peripheral neurectomy of the infraorbital nerve, resulting in significant pain relief. This case highlights the importance of accurate diagnosis and appropriate management of TN to avoid unnecessary dental procedures.*

## Introduction

Trigeminal neuralgia is a debilitating condition involving the fifth cranial nerve, characterized by paroxysmal facial pain triggered by routine activities such as chewing, speaking, or touching the face<sup>1</sup>. Misdiagnosis often leads to unnecessary dental interventions<sup>2</sup>. Treatment ranges from pharmacological therapy to surgical interventions depending on severity and response<sup>3</sup>.

## Case Presentation

### Patient Information

A 60-year-old male farmer from Uttar Pradesh presented with severe facial pain.

### Chief Complaint

Sharp, electric shock-like pain in the upper left anterior facial region for 9 months.

### History of Present Illness

The patient was asymptomatic 9 months prior, after which he developed sudden, episodic, lancinating pain on the left side of the face. Pain was:

- Triggered by mastication, brushing, smiling, and washing face
- Short-lasting (seconds to <1 minute)
- Followed by pain-free intervals
- Absent during sleep

He underwent extraction of multiple maxillary teeth (25–27) without relief. Pain intensity and frequency gradually increased.

### Medical & Dental History

- No significant medical history
- No known drug allergies
- Previous dental extractions without improvement

### Clinical Examination

### General Examination

- Vitals within normal limits

- No systemic abnormalities

- Pain triggered on palpation of left infraorbital region

**Extraoral Examination**

- No facial asymmetry

**No lymphadenopathy**



Fig 1



Fig 2



Fig 3

**Intraoral Examination**

- Missing teeth: 14–17
- Bony spicule in region of 25 (tender)
- No mucosal lesions

**Management**

**Medical Management**

First-line treatment included:

- Carbamazepine (200–1200 mg/day)
- Oxcarbazepine (600–1800 mg/day)

**Provisional Diagnosis**

Classical trigeminal neuralgia (left maxillary division)

According to NICE guidelines, carbamazepine was titrated gradually until pain control was achieved.

**Differential Diagnosis**

- Myofascial pain dysfunction syndrome
- Post-herpetic neuralgia
- Odontogenic pain
- Migraine
- Sinusitis
- Multiple sclerosis<sup>4</sup>

**Other alternatives:**

- Gabapentin
- Baclofen
- Lamotrigine<sup>6</sup>

**Investigations**

- Orthopantomogram (OPG)
- Diagnostic local anesthetic nerve block

**Surgical Management**

Due to inadequate long-term relief, **peripheral neurectomy of the infraorbital nerve** was performed under local anesthesia.

A small incision is placed in extraorally over the infraorbital region. Careful blunt

dissection is carried out through the soft tissues to expose the infraorbital nerve as it exits the foramen, taking caution to avoid unnecessary trauma to surrounding structures.

Once the nerve is identified, it is gently isolated using fine instruments. The nerve is then grasped with artery forceps and subjected to traction. A segment of the nerve

is excised or avulsed to reduce the chances of regeneration and recurrence of pain. In some cases, the proximal end of the nerve may be cauterized or buried into adjacent muscle to further minimize regrowth. Hemostasis is achieved, and the surgical site is irrigated. The wound is then closed in layers using resorbable or non-resorbable sutures. Postoperative care includes analgesics, antibiotics if indicated, and regular follow-up to assess pain relief and healing.



Fig 4

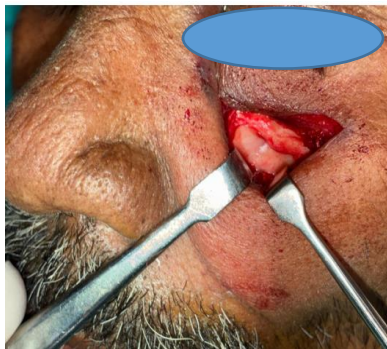


Fig 5



Fig 6



Fig 7



Fig 8



Fig 9

### Outcome

Postoperative follow-up showed significant reduction in pain with no immediate complications.

### Discussion

Trigeminal neuralgia is often misdiagnosed as odontogenic pain, leading to unnecessary

extractions as seen in this case<sup>2</sup>. The hallmark features include:

- Sudden onset
- Trigger zones
- Short duration
- Pain-free intervals
- Treatment of trigeminal neuralgia focuses on relieving severe facial pain and improving quality of life. According to the 2008 guidelines published in *Neurology* by the American Academy of Neurology and the European Federation of Neurological Societies, first-line management is pharmacological. Carbamazepine is considered the drug of choice due to strong evidence of efficacy. Oxcarbazepine is an effective alternative with fewer side effects. Other medications such as Baclofen and Lamotrigine may be used as second-line or adjunct therapies.
- For patients who do not respond to medical therapy or cannot tolerate drugs, surgical options are recommended. Microvascular Decompression is the most effective long-term surgical treatment, particularly in cases caused by vascular compression of the trigeminal nerve. Less invasive procedures include Percutaneous Radiofrequency Rhizotomy, Glycerol Rhizolysis, and Balloon Compression, which provide pain relief but may cause sensory loss. Stereotactic Radiosurgery is a noninvasive option with moderate success rates.
- Overall, treatment should be individualized, starting with

medications and progressing to surgical interventions when necessary, balancing efficacy and potential complications.

Carbamazepine remains the gold standard pharmacologic therapy<sup>3</sup>. However, surgical options such as peripheral neurectomy are valuable in resource-limited settings and in patients refractory to medication<sup>7</sup>.

### Conclusion

Early diagnosis of trigeminal neuralgia is essential to prevent unnecessary dental treatments. Peripheral neurectomy remains a viable and effective option, especially in rural settings where advanced neurosurgical facilities may not be available.

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