Peripheral Nerve Stimulation for Trigeminal Neuropathic Pain: A Case Series

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INTRODUCTION

- Injury to the fifth cranial nerve can cause trigeminal neuropathic pain (TNP)
- Constant burning with partial sensory deficit
- Frequently disabling
- TPN can be difficult to manage and refractory to medical treatment
- Opioids most common therapy and associated with complications
- Peripheral nerve stimulation (PNS) had been shown to be effective for various neuropathic pain syndromes
- Occipital neuralgia, postherpetic neuralgia, post-traumatic neuropathic pain
- 3 cases of common causes of TNP successfully treated with PNS to the V1 and/or V2 distributions are presented

METHODS

- Patient selection
  - Chronic TNP causing significant social/vocational dysfunction
  - Fails to improve with conservative measures
  - Neuropsychological evaluation
- Outpatient PNS trial
  - Considered successful if pain relief greater than 50%
- Surgical implantation
  - General endotracheal tube anesthesia induced
  - Quadripolar cylindrical electrodes were tunneled into the V1 and/or V2 distributions
  - Electrode placement confirmed with fluoroscopy
  - Distal electrode ends tunneled posterior to ear and down to a pulse generator in the infraclavicular fossa

CASE PRESENTATIONS

CASE 1

71 year old male with 11 years of left facial pain due to an accident with subsequent eye enucleation and 7 operations. 10/10 pain on presentation in V1/V2 distribution. Failed multiple pain Rx’s and alcohol ablation. Significant improvement with PNS trial that persisted after permanent leads implanted. Reports 100% relief of pain.

CASE 2

52 year old male involved in ATV accident 2 years prior to presentation with severe facial trauma requiring reconstruction and stabilization with titanium plating (A). He later developed intractable left V1/V2 pain and the plate obstructing the infraorbital foramen was removed without benefit. His pain was 8/10 and persisted despite multiple Rx’s and nerve block injections. He reported 100% pain relief with a PNS trial which persisted after PNS were permanently implanted in the V1/V2 distributions (B).

CASE 3

44 year old male with 18 months of 10/10 facial pain along the V1 region after an episode of shingles. Pain was not relieved with medical management and the patient decline injection treatments. The pain was reduced to 4/10 with a 7 day PNS trial which persisted after 2 permanent linear PNS electrodes were implanted in the V1 region (A). A short time later, the leads had migrated into the infracavicular fossa (B) and the patient reported loss of benefit. The leads were repositioned and anchored, but later removed due to infection. The leads will be replaced at a later date per the patient’s request.

CONCLUSIONS

- PNS for TNP provided 87% pain relief for the 3 patients in this observational study
- There was a 33% morbidity
  - Case 3 had electrodes repositioned then removed due to infection
  - Case 3 will have the PNS replaced at a later time per the patient’s request
- Larger prospective study warranted
  - More patients are being selected
  - Cost analysis should be preformed
- PNS appears to be a safe, effective treatment for medically intractable TNP

REFERENCES


INQUIRIES/DISCLOSURE

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