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SUPRAORBITAL NERVE STIMULATION FOR TREATMENT OF INTRACTABLE SUPRAORBITAL NEURALGIA

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Introduction: Supraorbital neuralgia is characterized by pain occurring within the distribution of the supraorbital nerve, manifesting as frontal headaches. Peripheral neurostimulation has gained popularity as a minimally invasive modality for the treatment of neuropathic pain, complex regional pain syndromes affecting one major peripheral nerve and most recently, for the treatment of occipital neuralgia. Treatment success in these areas suggests that neurostimulation may be applicable to the supraorbital nerves. Our objective is to present a new approach for the treatment of supraorbital neuralgia using percutaneous peripheral neurostimulation techniques.

Methods: Two patients with refractory supraorbital neuralgia were selected for this procedure. Patient A is a 40 year-old female with a history of supraorbital neuralgia-related headaches, secondary to a craniotomy performed for removal of a brain tumor. Her pain was refractory to medications, ventriculoperitoneal shunts, cryotherapy, supraorbital nerve blocks and avulsion of the supraorbital nerve. Patient B is a 43 year-old female with a history of a retroorbital hematoma, resulting in multiple eye surgeries. She developed intractable headaches for 2 years secondary to supraorbital neuralgia and was unresponsive to conservative medical therapy, stellate ganglion blocks and supraorbital nerve blocks. Both patients were trialed as outpatients with percutaneous supraorbital stimulation. A curved 15-Gauge needle was used to tunnel a stimulator lead subcutaneously from the temple over the supraorbital ridge. Lead placement was assisted and confirmed by fluoroscopy. Adequacy of stimulation was ascertained, and the percutaneous lead was anchored behind the ear. The stimulator lead was left in place for 7 days prior to their removal. Following a successful trial period of stimulation, both patients underwent permanent stimulator lead and implantable pulse generator placement. Percutaneous lead placement was performed in a similar fashion, with superficial tunneling of the lead from the posterior aspect of the ear over the supraorbital ridge and tunneling of the extension from behind the ear, where the lead was anchored, through the lateral aspect of the neck to the infraclavicular region of the chest, where the pulse generator was placed. Patients were followed at intervals of 7, 30, 60 and 90 days.

Results: At one week, both patients reported an overall improvement in their initial symptoms. Patient A reported a decrease in VAS from 10 to 0 at 7, 30 and 60 days, and VAS of 1 at 90 days, requiring little to no additional pain medications. Patient B has only had her one-week follow up at the time the article was written and reports a VAS of 1, requiring no additional pain medications.

Conclusions: These are the first two reported cases using peripheral neurostimulation for the treatment of intractable supraorbital neuralgia. The preliminary outcomes from this procedure suggest that this may be a less-invasive alternative to surgical interventions in carefully selected patients when other conservative treatment modalities have failed.

References: Weiner RL, Reed KL. Neural Stimulation for Control of Intractable Occipital Neuralgia. *Neuromodulation* 1999; 2(3): 217-221. Kemler MA, Barendse GA. Spinal Cord Stimulation In Patients with Complex Reflex Sympathetic Dystrophy. *New England Journal of Medicine* 2000; 343(9): 618-624.