

Neurostimulation for Occipital Neuralgia

Question:

- 1) Should occipital nerve stimulation be paired with occipital neuralgia or which any other headache condition?
- 2) Should occipital neuralgia be removed from the back pain line and added to a different line more consistent with a headache diagnosis?

Question source: HSD Hearings Division, HERC staff

Issue: The International Headache Society defines primary occipital neuralgia as “a paroxysmal jabbing pain in the distribution of the greater or lesser occipital nerves or of the third occipital nerve, sometimes accompanied by diminished sensation or dysesthesia in the affected area. It is commonly associated with tenderness over the nerve concerned.” To meet criteria for occipital neuralgia the pain must meet the following criteria:

- Paroxysmal stabbing pain, with or without persistent aching between paroxysms, in the distribution(s) of the greater, lesser and/or third occipital nerves.
- Tenderness over the affected nerve.
- Pain is eased temporarily by local anesthetic block of the nerve.

Occipital nerve block (usually a mixture of local anesthetic plus a glucocorticoid) is usually the treatment of choice for occipital neuralgia. Some other modalities that may be used include: physical therapy; acupuncture; massage therapy; chiropractic treatments; anti-inflammatory medications; muscle relaxants; anticonvulsants; anti-depressants; other percutaneous blocks such as facet joint blocks, medical branch blocks and transforaminal epidural steroid injections; radiofrequency ablation and occipital nerve stimulation (ONS). Occipital nerve stimulation has been investigated in selected cases of severe occipital neuralgia unresponsive to less invasive measures.

Recently, the Hearings Division was involved in a case in which cranial nerve stimulation was requested as a treatment for occipital neuralgia (CPT 64553 Implant neuroelectrodes and 64555 Implant neuroelectrodes. Currently, no nerve stimulation codes are on the line containing occipital neuralgia.

On researching this topic, HERC staff found the majority of evidence was for use in treatment of migraine headache.

Current Prioritized List status

M54.81 Occipital neuralgia is on line 402 CONDITIONS OF THE BACK AND SPINE Treatment: RISK ASSESSMENT, PHYSICAL MODALITIES, COGNITIVE BEHAVIORAL THERAPY, MEDICAL THERAPY

64553 Percutaneous implantation of neurostimulator electrode array; cranial nerve is on line 174 GENERALIZED CONVULSIVE OR PARTIAL EPILEPSY WITHOUT MENTION OF IMPAIRMENT OF CONSCIOUSNESS

Note: multiple other CPT codes are noted in commercial insurer policies as possibly being used for this procedure

64405 Injection(s), anesthetic agent(s) and/or steroid; greater occipital nerve is Ancillary

Evidence

Neurostimulation for Occipital Neuralgia

Evidence for occipital neuralgia

- 1) **Sweet 2015**, Occipital Nerve Stimulation for the Treatment of Patients With Medically Refractory Occipital Neuralgia: Congress of Neurological Surgeons Systematic Review and Evidence-Based Guideline
http://mriquestions.com/uploads/3/4/5/7/34572113/occipital_stimulation_neurosurgery-77-3-332.pdf
 - a. N=9 studies, all Class III evidence
 - i. N=3 prospective case series, 4 retrospective case series, 1 cohort study, 1 case series not specified as prospective or retrospective
 - ii. N= 76 total patients
 - iii. Most studies with short follow up (2-36 months)
 - b. Effectiveness: all studies reported significant reduction in pain scores. Several studies reported significant reduction in pain medication use. Studies that reported disability scores found significant reduction in disability
 - c. Complications
 - i. Lead breakage: 2 patients
 - ii. Lead migration: 3 patients
 - iii. Worsening pain: 1 patient
 - iv. Infection: 5 patients
 - d. Expert recommendation: The use of occipital nerve stimulators is a treatment option for patients with medically refractory occipital neuralgia. (Level III)

Evidence for other headache conditions

- 1) **AHRQ 2021 DRAFT** Treatments for Acute and Chronic Pain: Systematic Review
 - a. Occipital nerve stimulation for headache
 - i. Three trials (number randomized 30, 67, and 157, total=254) evaluated occipital nerve stimulation for chronic headache
 1. All trials looked at chronic migraine, one trial included medication overuse headache
 2. 1 poor, 2 fair quality
 - ii. Evidence was insufficient to assess occipital nerve stimulation versus sham stimulation for headache (1 trial) (SOE: insufficient).
 - iii. For headache, occipital nerve stimulation with adjustable parameters versus usual care at 3 months was associated with a small, nonstatistically significant reduction in pain intensity, moderate decrease in headache related disability, and decrease in headache days (1 trial) (SOE: low for headache related disability and headache days; insufficient for pain).
 - iv. Lead migration occurred in 14 to 24 percent of patients (2 trials), serious device-related complications requiring hospitalization occurred in 5.9 percent of patients (1 trial), and persistent pain/numbness at implantation site in 13 percent of patients (1 trial) (SOE: low).
 - v. Conclusion: occipital nerve stimulation for headache may be more effective than usual care for improving headache-related disability and reducing headache days, but lead migration is common

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Other coverage policies

- 1) **NICE 2013**, Occipital nerve stimulation for intractable chronic migraine
<https://www.nice.org.uk/guidance/ipp452/resources/occipital-nerve-stimulation-for-intractable-chronic-migraine-pdf-1899869807117509>
 - a. The evidence on occipital nerve stimulation (ONS) for intractable chronic migraine shows some efficacy in the short term but there is very little evidence about long-term outcomes. With regard to safety, there is a risk of complications, needing further surgery. Therefore, this procedure should only be used with special arrangements for clinical governance, consent, and audit or research.
- 2) **Aetna 2021**
 - a. Aetna considers the following interventions experimental and investigational for the treatment of occipital neuralgia and other types of headache because their effectiveness for this indication has not been established:
 - i. Electrical stimulation of the occipital nerve (examples of devices for occipital nerve stimulation are ONSTIM and PRISM)
 - ii. Occipital nerve block (also known as occipital infiltration, and including greater occipital nerve block)
 - b. Aetna considers surgery and the following interventions experimental and investigational for the treatment of cluster headache and other chronic headaches including migraines because their effectiveness for these indications has not been established.
 - i. Occipital nerve stimulation
- 3) **Cigna 2020**
 - a. Each of the following ablative treatments, electrical stimulation or neurosurgeries is considered experimental, investigational or unproven for the treatment of headache (e.g., chronic migraine, chronic cluster or cervicogenic headache) or occipital neuralgia:
 - i. electrical stimulation of occipital nerve
 - ii. occipital nerve neurolysis

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HERC staff summary

The evidence for the effectiveness of occipital nerve stimulation for occipital neuralgia is based on small case series, which show reduction in pain but high rates of complications. The evidence for occipital nerve stimulation for other headache types, including migraine, finds small improvement in pain of unclear clinical significance and high rates of complications. Private insurers and trusted evidence-based coverage guidelines (NICE) find occipital nerve stimulation to be experimental. HERC staff conclude that occipital nerve stimulation is experimental for treatment of all headache types.

HERC staff recommendations:

- 1) Do not add occipital nerve stimulation to any line with headache diagnoses
- 2) Move ICD10 M54.81 (occipital neuralgia) to line 410 MIGRAINE HEADACHES and remove from line 402 CONDITIONS OF THE BACK AND SPINE
 - a. Not a spinal condition; treatments are similar to migraine headaches