

Occipital Nerve Stimulator Placement Under General Anesthesia: Initial Experience With 5 Cases and Review of the Literature

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Abstract

Anesthesiologists support nerve stimulator insertion procedures, including occipital nerve stimulator placement for refractory headache disorders. Sedation during these cases can be challenging on account of variable surgical stimuli and surgery positioning that contribute to neck flexion, potentially compromising the airway. Greater patient comfort and safety may be found in performing permanent occipital stimulator placement procedures entirely under general anesthesia, assuming that appropriate stimulation patterns can be achieved in patients who are unable to provide intraoperative feedback. The purpose of this study is to describe our initial experience with occipital nerve stimulator placement performed entirely under general anesthesia and the resulting stimulation patterns, and to review the medical literature regarding the anesthetic techniques used during these novel neurosurgical procedures. After institutional review board approval, we reviewed the records of 5 patients who underwent permanent occipital nerve stimulator placement under general anesthesia. Appropriateness of the postoperative stimulation patterns was noted in addition to complications. The medical literature was searched for occipital stimulation surgery studies that also described the anesthetic technique. We found that all 5 patients underwent uncomplicated general anesthetics. Postoperative occipital stimulation was nonpainful and symmetrical for all. The literature search provided little information on the anesthetic technique; most procedures were performed at least in part under local anesthesia with sedation. On the basis of this small case series, we conclude that the occipital nerve stimulator systems can be successfully placed under general anesthesia while still achieving the desired occipital region stimulation. Further studies are needed to correlate occipital nerve stimulator placement under general anesthesia and long-term headache control.

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