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Midline Facial Nerve Article Monitoring: Single-Center Experience and Review of

Literature

Authors	Mohammed A. Jomah[1] and Eman A. Hajr[2]
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Background: Facial nerve monitoring system has enabled facial muscle activity detection using electrodes placed over the target muscles. In an effort to enable the best and minimally invasive surgical approach, a midline facial nerve monitor was applied during bilateral cochlear implantation surgical intervention in our center and the feasibility of placing midline facial nerve monitor electrodes during bilateral cochlear implantation operations was evaluated.

Methods: The medical records and operative notes of all patients who underwent bilateral cochlear implantation surgery between January 2017 and April 2018 in a quaternary care center were retrospectively reviewed and divided into 2 groups based on the facial nerve monitoring methods: facial nerve monitoring with the midline (midline facial nerve monitor) or bilateral (bilateral facial nerve monitor) electrode placements. Basic demographic information, comorbidities, and facial nerve status (pre- and postoperatively) were collected from patient electronic medical charts. The operative notes were reviewed for abnormal facial nerve findings, as well as for any reported difficulties with the identification or stimulation of facial nerve. The primary outcome was facial nerve identification postoperative function.

Results: Seventy-eight patients met our inclusion criteria. Midline facial nerve monitor was used in 49 patients and bilateral facial nerve monitor was used in 29 patients. No documented difficulty was identified at the step of facial nerve identification in either group, and none of the patients developed facial nerve weakness postoperatively.

Conclusion: Midline facial nerve monitor is a safe and reliable method that can be used in bilateral cochlear implantation surgeries and other surgeries requiring facial nerve monitoring