Brainstem auditory evoked potentials for microvascular decompression

The aim of a study was to define the critical warning sign of real-time brainstem auditory evoked potential (BAEP) for predicting hearing loss (HL) after microvascular decompression (MVD) for hemifacial spasm (HFS). METHODS:

Nine hundred and thirty-two patients with HFS who underwent MVD with intraoperative monitoring (IOM) of BAEP were analyzed. We used a 43.9 Hz/s stimulation rate and 400 averaging trials to obtain BAEP. To evaluate HL, pure-tone audiometry and speech discrimination scoring were performed before and one week after surgery. We analyzed the incidence for postoperative HL according to BAEP changes and calculated the diagnostic accuracy of significant warning criteria. RESULTS:

Only 11 (1.2%) patients experienced postoperative HL. The group showing permanent loss of wave V showed the largest percentage of postoperative HL ($p < 0.001$). No patient who experienced only latency prolongation (≥1 ms) had postoperative HL. Loss of wave V and latency prolongation (≥1 ms) with amplitude decrement (≥50%) were highly associated with postoperative HL. CONCLUSIONS:

Loss of wave V and latency prolongation of 1 ms with amplitude decrement ≥50% were the critical warning signs of BAEP for predicting postoperative HL. SIGNIFICANCE:

These findings elucidate the critical warning sign of real-time BAEP [1)].

1)
Park SK, Joo BE, Lee S, Lee JA, Hwang JH, Kong DS, Seo DW, Park K, Lee HT. The critical warning sign of real-time brainstem auditory evoked potentials during microvascular decompression for hemifacial spasm. Clin Neurophysiol. 2018 Jan 4. pii: S1388-2457(17)31221-X. doi: 10.1016/j.clinph.2017.12.032. [Epub ahead of print] PubMed PMID: 29342440.

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