

Continuous facial nerve monitoring with direct ball-typed electrode stimulation during the vestibular schwannoma surgery

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Continuous Ball-Electrode Stimulation : Real-time, Quantitative









Ball Electrode

for recording of near-field potentials at the cochlear nerve Ø ball = 1,6 mm, with 1.5 mm touchproof connector, single use only, ETO-sterilized Unit 5

Inomed Emmendingen, Germany





Introduction

Results

Conclusions

Vestibular schwannoma surgery carries the risk of facial nerve injury, which is always the distress to the patients and surgeons. The several techniques have been tried to monitor the facial nerve, but it has not yet been confirmed which method is the best. Here, we present our experience with continuous facial nerve monitoring by the direct stimulation with ball-typed electrode for the resection of a series of vestibular schwannomas.

The application of ball-type electrode was tried to all included patients, but it

Ball-type electrode is a method worth trying for facial nerve monitoring during

Methods and Materials

During the last 2 years, a total 15 patients with vestibular schwannomas underwent the surgical resection. Balltyped electrode was placed in the root exit zone of facial nerve near brain, the evoked facial nerve electromyograms was monitored in the real-time through a heads-up-display view of microscope.

was only applicable to 7 patients. The median diameter of this patients was 27 mm (range, 14 – 33), and Koos grades were II in 2 patients, III in 2, and IV in 3. Tumors were solid type and mixed type in 5 and 2 patients, respectively. And facial nerve locations were the ventralinferior in 4 patients, the ventralsuperior in 2, and the ventral-central in 1. Gross total resections were completed in all patients, and postoperative facial motor grades were favorable, except one patient with preoperative facial palsy with grade III. The ball-typed electrode was not applicable in the other 8 patients because of the limitation of fixation and facial nerve identification.

the vestibular schwannoma surgery. However, it has the limitation to the application in large tumors, ventral and central location of facial nerve, and fixation to facial nerve. Further studies are needed to determine whether the use of this electrode can reduce the postoperative facial palsy.

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