

Bibliographic identification

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Abstract

Severe hearing loss is standardly treated by cochlear implantation. Considering the anatomical proximity and interconnection to the vestibulocochlear nerve, it is possible to influence vestibular functions.

The aim of this diploma thesis is to evaluate the effect of unilateral cochlear implantation on postural stability and vestibular function in adult patients with severe hearing loss caused postlingually. Eleven patients aged 28–72 were examined the day before surgery, the day after surgery, and on average 25 days after surgery. The evaluation consisted of short-form Dizziness Handicap Inventory (DHI), Timed Up and Go testing (TUG), static stabilometry and the perception of the subjective visual vertical (SVV) static and dynamic.

Significant deterioration of TUG and SVV was recorded particularly immediately after surgery. In dynamic SVV, especially, when the field of view rotated to the left. Considerable results in stabilometry were only when standing on a hard surface with eyes closed. Improvements in TUG, SVV and stabilometry were achieved after a longer period after surgery. Significant differences persisted in more posturally complicated situations (eyes closed, head extended) and patients with surgery on the right side had a considerable higher deviation to the left. Preoperative status was achieved in TUG testing. DHI questionnaire did not revealed any statistically significant worsening of subjective dizziness in any measurement after surgery.

Cochlear implantation leads to deterioration of vestibular function immediately after surgery. With passing of time since surgery, vestibular function improves again, but deficits persist in some patients. However, the clinical findings do not correlate with the subjective feelings of patients.

Keywords

cochlear implant, vestibular function, Dizziness Handicap Inventory, Timed Up and Go, stabilometry, subjective visual vertical

