Tactile responses in pure-tone audiometry: a saccule function?

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Dear Editor,

As generally accepted, low-frequency bone-conduction thresholds obtained in the 35–55 dB range are often tactile responses and not due to auditory stimulation [4]. Since it is recently known that low-frequency air- and bone-conducted stimuli can be used to test otolithic function also in humans [2], we wondered if such “false-positive” bone-conduction thresholds in pure-tone audiometry could be linked to saccular function evaluated by cervical vestibular evoked myogenic potentials, cVEMP [1]. We therefore correlated the presence or the absence of obvious “sensation thresholds” in 29 patient (58 ears) with bilateral functional deafness (listed for cochlear implantation) with the respective presence or absence of cVEMPs when applying 500 Hz tone bursts (105 dB SPL, 7 ms duration, 5/s) via headphones and recording ipsilateral sternocleidomastoid muscle activity with surface electrodes [3].

When summarized in a 2×2 crosstab, there was no evident statistical correlation ($\chi^2 = 0.0296$, $p > 0.05$).

Since strong correlations should be visible in such a number of cases, we conclude from our data that tactile responses in pure-tone audiometry are probably not connected to saccule function, but to other sensory structures.

Conflict of interest None.

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