IE-Vnet: deep learning-based segmentation of the inner ear's total fluid space

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Supplementary Material

DATASETS D1-5: MEASUREMENT OF THE AUDITORY, SEMICIRCULAR CANAL, AND OTOLITH FUNCTIONS

Diagnostic work-up included a careful neurological (e.g., history-taking, clinical examination), and neuro-orthoptic assessment with, e.g., Frenzel goggles, fundus photography, adjustments of the subjective visual vertical (SVV), video-oculography (VOG) during caloric stimulation and head-impulse test (HIT), as well as pure tone audiometry (PTA). A tilt of the SVV is a sensitive sign of a graviceptive vestibular tone imbalance. SVV was assessed when sitting in an upright position in front of a half-spherical dome with the head fixed on a chin rest [Dieterich and Brandt (1993)]. A mean deviation of > 2.5 from the true vertical was considered a pathological tilt of SVV [Dieterich and Brandt (1993)]. The impairment of vestibulo-ocular reflex (VOR) in higher frequencies was measured by HIT (34) using high-frame-rate VOG with EyeSeeCam [Schneider et al. (2009), EyeSeeTech, Munich, Germany]. A median gain during head impulses < 0.6 (eye velocity in °/s divided by head velocity in °/s) was considered a pathological VOR Halmagyi and Curthoys (1988). Furthermore, horizontal semicircular canal responsiveness in lower frequencies was assessed by caloric testing with VOG. This was done for both ears with 30°C cold and 44°C warm water. Vestibular paresis was defined as >25% asymmetry between the right- and left-sided responses [Jongkees et al. (1962)].

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