CT analysis demonstrates that cochlear height does not change with age

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OBJECTIVE: To establish the relationship between cochlear height and age using analysis of radiographic images.

METHODS: Retrospective study measuring cochlear height in 396 ears in 198 patients (mean age 7.3 years, range 1 month to 23 years) using axial temporal bone computed tomography (CT) scans. Cochlear height was measured as the distance from the modiolus to the anterior wall of the cochlear canal using distance tool and angle measurement tool. Two-tailed t-tests were performed to compare cochlear height between patient groups stratified by gender and hearing category.

RESULTS: Cochlear height did not change with age, with a mean height of 5.5 mm at all ages. Cochlear height was significantly different between genders (males > females) and hearing categories (Normal > CHL > Mixed > Unknown). Cochlear height was significantly different between patients with SNHL and those with Normal hearing.

CONCLUSION: Cochlear height does not change with age. Differences in cochlear height are significant between genders and hearing categories. This study could serve as a normative database for cochlear height measurements.

REFERENCES:

3. Normative cochlear height measurements can be used independent of age to diagnose cochlear hypoplasia.

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