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**Original article:**

**Internal auditory canal diameter in children with congenital sensorineural hearing loss**

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**Abstract**

Aim – The aim of this study was to evaluate the predictive value of the diameter of the internal auditory canal (IAC) on computed tomogram for the aplasia or hypoplasia of the cochlear nerve in children with congenital sensorineural hearing loss (SNHL).

Materials and Methods – A retrospective study of 49 patients diagnosed with congenital sensorineural hearing loss was done using computed tomography (CT) and magnetic resonance images (MRI). All patients were candidates for possible cochlear implantation. To reduce motion artefacts, some of the children were studied in sedation. The children were between the age group of 2 to 12 years.

Results – Cochlear nerve was not visualised in 6 out of 8 patients with narrow IAC. However, the cochlear nerve was visualised in 2 patients with narrow IAC. P value was found to be < 0.001 and is statistically significant.

Conclusion – A hypoplastic IAC is an indicator of a hypoplastic/aplastic cochlear nerve and a contraindication for cochlear implantation. Temporal bone CT can be used as the modality of choice in initial investigation of children with sensorineural hearing loss and the IAC canal diameter on CT can be used to select patients with SNHL who should undergo further evaluation with MR imaging.

Keywords – Internal auditory canal diameter, sensorineural hearing loss, cochlear nerve