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Radiologic findings in cochlear implant patients

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Statement of the Problem: All pathologies of cochlear implant patients may not be detected in radiology reports.

Methodology & Theoretical Orientation: In this retrospective study, patients who underwent cochlear implant surgery in our clinic between 2012-2018 were included in the study. Patients' radiologic images (high-resolution computed tomography: HRCT and Magnetic Resonance Imaging: MRI) were reevaluated to identify cochlear malformations and other abnormal radiologic findings.

Findings: 190 subjects with an age range of 12 months and 71 years were included this study. There were 66 adult and 124 pediatric patients. The mean age of the adult patients was 44.30 years (18-71 years) and the female: Male ratio was 32:34. In 42 patients, the HRCT findings were normal. There were 8 patients with congenital cochlear malformations (incomplete partition-2: 3, incomplete partition-3: 1, incomplete partition-1: 1, cochlear hypoplasia 3: 2 and cochlear hypoplasia 4: 1), 5 patients with cochlear otosclerosis, 8 patients with high jugular bulb (ipsilateral ear: 4 and contralateral ear: 4) and 3 patients with mastoid opacification of soft tissue density. On MRI examination, acoustic tumor was detected in two patient's contralateral ear unlike HRCT. The mean age of the pediatric patients was 51.02 months (12 months-17 years) and there were 61 girls and 63 boys. In 92 subjects, the HRCT findings were normal. There were 9 patients with congenital cochlear malformations (incomplete partition-2:5, cochlear hypoplasia 3:3 and cochlear hypoplasia 4:1), 17 patients with high jugular bulb (ipsilateral ear: 11 and contralateral ear: 6), 1 patient with hydrocephalus and 5 patients with mastoid opacification of soft tissue density.

Conclusion & Significance: The surgeon should evaluate the radiological images of the cochlear implant patient himself before the surgery in order not to miss the pathologies of the patient and to identify the points to be considered during surgery.

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