

00582 **Classification of Temporal Bone Pneumatization on High Resolution Computed Tomography - Prevalence Patterns and Implications**

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Aims: The degree of pneumatization of the temporal bone has implications in the pathophysiology and surgical considerations of many temporal bone disorders. This study aims to identify common pneumatization patterns in the petrous apex, mastoid, and infralabyrinthine compartments of temporal bone. Variables associated with temporal bone pneumatization were also identified.

Methodology: This is a retrospective study. High resolution computed tomography scans of the temporal bone performed on patients between the years 2013 to 2016 were reviewed. Only normal temporal bone scans in patients aged 13 years and above were included. Previously published grading systems were used to classify pneumatization patterns in the petrous apex, mastoid and infralabyrinthine region.

Result: 299 patients were included in this study. The most common pneumatization pattern in the petrous apex was Group 2 (less than half of the petrous apex medial to the labyrinth is pneumatized), that in the mastoid was Group 4 (hyper-pneumatization), and that in the infralabyrinthine region was Type B (limited pneumatization), at 54.8%, 55.4%, and 76.0% of patients respectively. Patients with increased pneumatization of one temporal bone compartment tended to have increased pneumatisation of the same compartment on the contralateral side and the other compartments on the ipsilateral side ($p < 0.05$). Younger age ($p < 0.001$) and male gender ($p = 0.001$) were associated with increased pneumatization in the petrous apex and infralabyrinthine compartments.

Conclusion: The degree of temporal bone pneumatization varies amongst the different compartments. Age and gender have a significant association with the degree of pneumatization of the petrous apex and infralabyrinthine compartment.