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Temporal bone pneumatization: A computed tomography study of pneumatized articular tubercle

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Aim: To determine the prevalence and characteristics of pneumatized articular tubercle (PAT) at computed tomography (CT), and to determine whether the presence of PAT is a predictor of larger pneumatized spaces of temporal bone.

Materials & Methods: A retrospective study was performed using axial, sagittal and coronal CT images of 225 patients who attended a private medical imaging centre. Age and gender were recorded for all patients and, for cases of PAT, laterality and types were also recorded. Temporal bone pneumatization was recorded based on three reference structures on axial images. The Chi-square and Mann-Whitney U-tests were used.

Results: Of the 225 patients, 43 (9.55%) had PAT, of whom 24 were female and 19 were male. This difference was not statistically significant ($p > 0.05$). The age range of the patients with PAT was 8-67 years. Of the 43 patients, 24 had unilateral and 19 had bilateral PAT. Fifteen cases of PAT were unilocular and 28 were multilocular. Cases of PAT showed larger pneumatized spaces of other parts of the temporal bone ($p = 0.0001$).

Conclusion: It is possible that PAT is a more frequent condition than is commonly perceived. The degree of pneumatization of temporal bone can be estimated by the evaluation of the air cells around the articular tubercle. CT is highly recommended in patients with PAT undergoing surgical treatment to determine the exact size and relationship of PAT to other parts of temporal bone.

Biography

Pegah Bronoosh graduated as Doctor of Dentistry in 2002 from Shahid Beheshti University of Medical Sciences, Tehran, Iran. He is Post-graduated as Oral Maxillofacial Radiologist in 2008 from Shiraz University of Medical Sciences, Shiraz, Iran. He is Board certified in Iranian Oral Maxillofacial Radiology in September, 2008. He worked as a Fellow of TMJ Disorders in 2013 and has obtained a Research Grant from ACTA, The Netherlands. He worked as Assistant/Associated Professor in the Department of Oral Maxillofacial Radiology at the dental school of both Shiraz Dental School and international campus of Shiraz University of Medical Sciences during 2008-2013. He is a Guest Lecturer for the Department of Oral Maxillofacial Radiology - Dental School, Azad University, Tehran.

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