

VOLUMETRY AND ANALYSIS OF ANATOMICAL VARIANTS OF THE ANTERIOR PORTION OF THE PETROUS APEX OUTLINED BY KAWASE TRIANGLE USING COMPUTED TOMOGRAPHY

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Objective: anterior petrosectomy has become an increasingly approach for petroclival lesions and demonstrates high potential for specific kinds of lesions. This study measures by computed tomography (CT) the volume and the anatomic variants of the anterior portion of petrous apex outlined by Kawase triangle that is resected during anterior petrosectomy. Methods: transversal retrospective study conducted in the Radiology Department of a tertiary care institution (Hospital de Clínicas de Porto Alegre, Porto Alegre, Brazil). We assessed anterior petrous apex portion outlined by Kawase triangle in consecutive patients over the age of eighteen from CT scans of temporal bone stored in archive system of the Institution. The volumetry was performed on a workstation. Results: 154 petrosal apex were analyzed in 77 patients (36 men). The average volume of the region outlined by Kawases triangle was $1.89 \pm 0.52 \text{ cm}^3$. The volume average in men was $2.01 \pm 0,58 \text{ cm}^3$ and the average in women was $1.79 \pm 0.41 \text{ cm}^3$. Intra and interobserver agreement were both excellent and there was little variance. Nineteen petrous apex demonstraded anatomic variations. In 18 cases it was pneumatized and in one case vascular or nerve-like structure was identified wich report we did not find in the literature. Conclusion: The volumetry of petrous apex anterior portion outlined by Kawase triangle can be made by CT with excellent intra and interobserver agreement and reproducibility. There are anatomical variants in this region wich are relevant to surgery. Future studies are needed to correlate the volume of resected with surgical outcomes.