

Anatomical and Topographical Study in Different Age Groups of Human Paranasal Sinuses: by Gross Anatomy and Computerized Tomographic Imaging

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Background: Paranasal sinuses are group of four paired air-filled spaces in the bones of the face adjacent to the nasal cavity that are lined with mucous membrane and continuous with the lining of the nasal cavities. These sinuses are named (maxillary, ethmoid, frontal and sphenoid sinuses) according to the facial bones within which they are located.

Materials and methods: In the present study, a total randomized sample of 360 human bodies were chosen; including 110 cadavers dissected at the Institute of Forensic Medicine in Baghdad and the Forensic Medicine Unit in Tikrit Teaching Hospital, these cadavers arranged in four different age groups of approximately equal numbers of males and females; on the other side, the rest 250 cases were apparently healthy normal subjects who attending the Radiology Department of both Medical City Teaching Hospital and Tikrit Teaching Hospital to do Computed Tomography, also arranged in four different age groups of approximately equal numbers of males and females. Both, these cadavers and healthy subject bodies, used to observe the shape, measurements, pneumatization of each paranasal sinus and its relations with the adjacent structures and to do a correlation between the findings obtained from gross anatomy of cadavers to that findings obtained from CT cases. This study was carried out during the period from January 2010 to July 2011.

Results: A higher prevalence of frontal sinus cell types, supraorbital cells, frontal bulla cells and sphenothmoid cells in association with the maxillary sinus roof slants upward to the apex of the orbit medially and also the absence of the conchal type of sphenoid sinus; all these findings seem to suggest that the superio-posterior aspect of the paranasal sinuses tend to be more pneumatized than other aspects.

The relative large numbers of persons and cadavers used in this study when compared to other international studies, mathematically proven an obvious statistical differences between different age, side and gender groups in some sinuses, while other sinuses might not showing any difference. Also findings of measuring the paranasal sinuses dimensions by gross anatomy, and defiantly more accurate if it done by CT images, showing a great value in supporting the age, gender and race or ethnic for determination unknown alive or dead persons.