

MEDICOLEGAL STUDY ON PERSONAL IDENTIFICATION FROM DIFFERENT RADIOLOGICAL TECHNIQUES OF THE CALVARIUM

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Upon examination of the victims of a catastrophe due to transportation accidents or an explosion, it is striking to see that even on the most charred bodies, the skull and especially the cranial base remain intact. The fundamental variations of the anatomy of the frontal sinus, sella turcica, sphenoid sinus and mastoid air cells were the basic principle of the identification technique.

The present work was carried out to study certain radiological features of the air sinuses in the skull and to assess their validity in personal identification. The study included 350 adult patients referred to the Radiology Department of Alexandria Main University Hospital for radiological examination of the skull (plain X-ray and CT) for non-traumatic indications.

All the morphological characteristics of the frontal sinus classification systems studied in this work showed no sex differences. Thus, these systems of classification (Yoshino-Seta and Reichs-Dorion) might be applicable to both sexes.

- By coding the classification numbers in each classification item, each individual frontal sinus pattern could be expressed by a 7 digit code (14 or the CT).
- Frontal sinus patterns could be divided into a tremendous number of combinations by combining the class numbers in each classification item. Thus the chance of 2 persons having a similar frontal sinus pattern are so remote that this method of identification can be safely relied upon.
- All the morphological characteristics of the sella turcica studied in this work showed no sex differences, except for its shape and the angle formed by the clivus and the plane of the anterior cranial fossa.
- The oval shape was significantly more among males and the round one was significantly more among females.
- Comparing each individual sella turcica morphological data versus the other studied cases revealed no two identical sella turcica.
- All the studied morphological characteristics of the mastoid air cells showed no sex differences. The pneumatic types of the mastoid air cells were the commonest. However, the degree of pneumatization was variable.

Full details of the methods together with the results will be presented.

