

**Ministry of Higher Education
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College of Dentistry**



**Sex variations by linear measurements of palatal
bones and skull base using 3D reconstructed
Computed Tomographic scan among Iraqi sample**

A thesis

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Abstract

Back ground:

The skull base and the hard palate contain many anatomical features that make them rich in information which are useful in sex differentiation, in addition to that they have the ability to resist the hardest environmental conditions that support them in making sex differentiation. Three dimensional computed tomographic technique has important role in differentiation between sex since it offers images with very accurate data and details of all anatomical structures with high resolution.

Aim of study:

Is to study the sex variation by the craniometrics measurements of the hard palate and the skull base among Iraqi sample by using 3D reconstructed Computed Tomographic scan.

Materials and methods:

This study composed of 100 Iraqi subjects (50 male and 50 female) aged between 20-59 years. The sample collected from patients attending Al-Shaheed Ghazi hospital in Baghdad city to have spiral CT scanner of the brain and paranasal sinus for different diagnostic purpose from November 2014 to April 2015.

The craniometrical linear measurements of the hard palate and the skull base in this study were including: Maxillo-Alveolar Breadth, Maxillo-Alveolar Length, the distance between incisive foramen and greater palatine foramen (right and left), the distance between the incisive foramen and B point (the median point located at the anterior area of the magnum foramen), the distance between the incisive foramen and the anterior root of the mastoid notch on both sides (right and left), Maxillo-Alveolar Index and size of Palate. All these measurements were done by (mm) unit and all the data were analyzed by statistical analysis using Statistical Package of Social Science version 21.

Results:

The statistical analysis of linear measurements of the hard palate and the skull base showed that the mean values of all measurements were significantly higher in males than females excepted for Maxillo-Alveolar Index was not significant and also showed that the size of the palate was the best indicator for sex variation and making the diagnosis of male with accuracy 93.3%. The age had none significant effect on these measurements.

Conclusion:

Three dimensional Computed Tomographic scanner is the best diagnostic tool for sex variation by the craniometrical linear measurements for the anatomical landmarks points of the hard palate and the skull base.