Sudan University of Sciences and Technology
College of Graduate Studies

Measurement of Mandible Ramus in Sudanese using 3D CT

A Thesis submitted for Partial Fulfillment for the degree
of Master (M.Sc) in Diagnostic Radiologic Technique

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بسم الله الرحمن الرحيم

قال تعالى:

 قالوا سبحانك لا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ.

سورة البقرة (32)
Dedication

To

My Mother

A strong and gentle soul who taught me to trust in Allah, believe in hard work and that so much could be done with little

My Father

For earning an honest living for us and for supporting and encouraging me to believe in myself
Acknowledgment

First of all, I thank Allah the Almighty for helping me complete this research; I thank Dr. Caroline Edward Ayad, my supervisor for her help and guidance.

I would like to thank my family to support me for long time.

Finally I would like to thank everybody who helped me prepare and finish this study.
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Abstract

The objective of this prospective study were measurement of mandible ramus in the Sudanese people using 3D computed tomography scan and correlate the measurements to the mean of patients’ age.

40 patients without any disease with ages ranged between (20-75) years were included; patients with congenital problems and fracture were excluded.

3D CT scan image were obtained using CT machine with 120 KVP and 100mAs in the Radiology department (ALmodares Hospital).

The measurements of mandible rami were taken in mms for both ganders.

The results showed that the mean and stander deviation minimum width LT lateral condyle (31.75±3.29)-maximum width LT medial condyle (38.0875±3.11) maximum length LT lateral condyle (65.455±4.72) maximum length LT medial condyle (56.9775±4.79 ) minimum width RT lateral condyle (31.75±3.29 ) maximum width RT medial condyle (38.0875±3.11) maximum length RT lateral condyle (65.455±4.72) maximum length RT medial condyle (57.0025±4.80).

Linear relationships between age and mandible measurement were noticed.

The 3D CT scan is a good method in demonstration of the anatomy of the mandible.
ملخص الدراسة

كان الهدف من هذه الدراسة المرتقبة قياس فرع الفلك السفلي في الشعب السوداني باستخدام الأشعة المقطعية ثلاثية الابعاد وربط القياسات بمتوسط عمر المرضى.

وتم أخذ العينة من 40 مريض دون أي مرض وكانت أعمارهم تتراوح ما بين 20-75 سنة وأي مريض يعاني من مشاكل خلقية أو كسر تم استبعاده من العينة.

وتم استخدام الأشعة المقطعية تقنيه ثلاثية الابعاد للحصول على القياسات وذلك في قسم الأشعة المقطعية لمستشفى المدرس التعليمي.

وتم أخذ قياسات فرع الفلك السفلي في لكل الجنسين.

واوضحت النتائج أن متوسط الحد الأدنى لللمسة الجانبية من جهة اليسار (31.75 ± 3.29) وأقصى عرض اللمسة الأنضنة من جهة اليسار (38.075 ± 3.11) والحد الأقصى لطول اللمسة الجانبية من جهة اليسار (65.455 ± 4.72) والحد الأدنى لعرض اللمسة الجانبية من جهة اليمين (31.75 ± 3.29) والحد الأقصى لطول اللمسة الجانبية من جهة اليمين (56.9775 ± 4.79) والحد الأقصى لطول اللمسة الأنضنة من جهة اليمين (38.0875 ± 3.11) والحد الأدنى لطول اللمسة الجانبية من جهة اليمين (65.455 ± 4.72) والحد الأدنى لطول اللمسة الأنضنة من جهة اليمين (57.0025 ± 4.80) على التوالي.

وواضحت الدراسة أن الأشعة المقطعية ثلاثية الابعاد من أفضل الطرق لتوضيح الأجزاء التشريحيه للفلك السفلي وكمما لوحظت علاقة خطية بين العمر وقياسات الفلك السفلي. وان مقاييس الفلك السفلي للسودانيين يختلف عن الجنسيات الأخرى.
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