

بسم الله الرحمن الرحيم

Sudan University of Sciences and Technology

College of Graduate Studies

Measurement of Mandible Ramus in Sudanese using 3D CT

قياس فرع الفك السفلي في السودانيين باستخدام الاشعة المقطعية ثلاثية الابعاد

A Thesis submitted for Partial Fulfillment for the degree

of Master (M.Sc) in Diagnostic Radiologic Technique

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(2016)

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قال تعالى:

؟ قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا

مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ ؟

سورة البقرة

الآية (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 الفك السفلي في الشعب السوداني باستخدام الأشعة المقطعية ثلاثية الأبعاد 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 بتقنية ثلاثية الأبعاد للحصول على القياسات وذلك في قسم الأشعة المقطعية لمستشفى المدرس التعليمي.

وتم أخذ قياسات فرع الفك السفلي في لكل الجنسين.

وأوضحت النتائج أن متوسط الحد الأدنى للقامة الجانبية من جهة اليسار (3.29 ± 31.75)، وأقصى عرض اللقمة الأنسية من جهة اليسار (3.11 ± 38.0875) والحد الأقصى لطول اللقمة الجانبية من جهة اليسار (4.72 ± 65.455) وأقصى طول اللقمة الأنسية من جهة اليسار (4.79 ± 56.9775) الحد الأدنى لعرض اللقمة الجانبية من جهة اليمين (3.29 ± 31.75) والحد الأقصى لعرض اللقمة الأنسية من جهة اليمين (3.11 ± 38.0875) والحد الأقصى لطول اللقمة الجانبية من جهة اليمين (4.72 ± 65.455) والحد الأقصى لطول اللقمة الأنسية من جهة اليمين (4.80 ± 57.0025) على التوالي.

وأوضحت الدراسة أن الأشعة المقطعية ثلاثية الأبعاد من أفضل الطرق لتوضيح الأجزاء التشريحية للفك السفلي، كما لوحظت علاقة خطية بين العمر وقياسات الفك السفلي. وأن مقاييس الفك السفلي للسودانيين يختلف عن الجنسيات الأخرى.

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