بسم الله الرحمن الرحيم

Sudan University of science and technology
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Characterization of knee joint Osteoarthritis Deformities using CT Scanogram

توصيف تشوهات التهاب مفصل الركبة باستخدام الاشعة المقطعية

A thesis submitted for fulfillment of the requirements for the MSC in diagnostic radiology

BY

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الآية

قال تعالى:

(أمن هو قانت إناء الليل ساجداً و قانتاً يحذر الأخره و يرجو رحمه ربه قل هل استوى الذين يعلمون و الذين لا يعلمون إنما يتذكر أولو الألباب).

سوره الزمر

الآية:٩

Dedication

To mymother

Who deals with my all difficulties to make life easy for me since childhood until now and forever, I hope the paradise ... be your ever after home

To my father

My childhood companion may Allah bless ... you

To my brothers and sisters

You are full of compassion may Allah ....protect you and your children

To my friend

Thanks for your support and encouragement

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Farsighted and generous help has assisted greatly in the
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everybody
Who made this research possible

The researcher ....

ABSTRACT

Osteoarthritis (OA) is a disease of the entire joint involving the cartilage, joint lining, ligaments, and underlying bone. The breakdown of these tissues eventually leads to pain and joint stiffness.Varus and valgus malalignment of knee is risk factor for predicator of function decline in people with osteoarthritis. general objective of this study was To characterize the knee Osteoarthritis deformities by using CT Scanogram,specific objective were to measure HKA angle to judge in varus and valgus, correlate effected side (right or left) ,correlate deformities with age and to correlate deformities with gender. CT scanogram were use in this study. This study has found that varus deformities is more prevalence between men than women,The percentage of varus deformities in right is male with frequency26 percent 52% than female with frequency 23percent 46%,And the left knee deformities with frequency 24 percent 48% in male and female . The varus deformities in right and left knee has higher frequency In male the varus deformities,valgus are most common in female in both side Age group (70-80) has higher frequency 13 percent 26% as result of DJD

المستخلص

هشاشةالعظام,هواحدامراض المفاصل ويمتدتاثيره الي الغضروف،بطانةمشتركة،والأربطة،والعظام الكامنة. انهيارهذهالأنسجةيؤدي فيال نهايةإلى الألم والتصلبات اعوجاج الركبه الي الخارج او الداخل هوعامل خطريؤدي من ا نخفاض وظيفةفي الأشخاصالذين يعانون من هشاشةالعظام. وكان الهدف العام لهذه الدراسةلتوصيف تشوهات الركبةهشاشةالعظام باستخدام الاشعه المقطعيه سكانوغرام،وكان الهدف المحددلقياس زاوية الاتش كيه اي وهي اختصار للزاويه التي تربط عظم الحوض والركبه ومفصل القدم ،اهداف الخاصه للدراسه للحكم في التقوسات الي الداخل او الخارج،وترابط مع الجانب (يمينأويسار)،وربط التشوهات معا لتقدم في السن،وربط التشوهات مع نوع الجنس . وقداستخدمت الا شعه المقطعيه او السكانو غرام في هذه الدراسة. وقدوجدت هذهالدراسةأن تشوه التقوس هوأكثرانتشارابين الرجال من النساء،ونسبةتشوه التقوس في الحق هوالذكورمع تردد ونسبة52٪ من الإناث مع تردد23 ونسبة 46٪،وتشوهات الركبةاليسرى مع تردد24 ونسبة48٪ في الذكوروالإناث.. تشوهات الركبة للداخل اليمين واليسار لديها اعلي تردد ونسبة عند الرجال مقارنة بالنساء اللائ لديهن اعلي نسبة تشوهات للخارج اما الفئات العمرية فا كثر فئة معرضة للتشوهات هي مابين 70 و80 سنة نتيجة لي عوامل وتغيرات خلقية تنشاء نتيجة للتقدم في العمر.

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List of abbreviations

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Abbrev.	Stand for
+VE	Positive
-VE	Negative
AC – AC DISTANCE	Acetabulum to Acetabulum distance
FH-FH LENGTH	Femoral Head to Femoral length
FO	Femoral Offset
HHC	Height of Hip Center
HKA ANGLE	Hip Knee Ankle angle
HX	History
OA	OSTEOARTHRITIS
DJD	DEGENRATIVE JOINT DISEASE
BMD	Bone mineral diseases
IBM SPSS	International Business Machines Statistical package for the social sciences
MOST	Multicenter Osteoarthritis Study
KAM	knee adduction moment