

بسم الله الرحمن الرحيم

Sudan University of Sciences & Technology

College of graduate studies

College of Medical Radiological Sciences
Department of Diagnostic Radiological Technology

Evaluation of CT-KUB in Detection of renal system stones

تقويم الأشعة المقطعية في كشف حصى الجهاز البولي

A thesis submitted for partial fulfillment of the requirements of M.SC degree
in diagnostic radiologic technology

Prepared by:

MOHAMMED ALGUM ELAMEIN AHMED

Supervisor:

Dr: HUSSEIN AHMED HASSAN

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Dedication

To my parent

To my brothers

To my teachers

To my friends

Acknowledgement

I wish to thank all those who helped me. without them , I could not have completed this project.

This research could not have been written without

Dr. **HUSSAIN AHMED HASSAN** who not only served as my supervisor but also encouraged me.

To my colleague in Yastabshiroon hospital radiologists, technologist, and staff of reception.

To whom helped me I gave them my great thanks

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Abstract

The study aimed to determine the accuracy of computed tomography kidney ureter bladder (CT-KUB) in measuring of urinary system stones.

This study was expanded from February 2013 to August 2013, in Yastabshiroon hospital Random samples of 50 patients, 33 males (66%) and 17 females (34%), their ages range from 20 to 65 years, were chosen for CT-KUB.

CT-KUB was obtained for the entire subject and the stones length, width, computed tomography (CT) number, and we were measured by using computer.

Scanning was done using Toshiba (16slices) machine with slice thickness 8mm, collimation of 0.8*16 mm, 120 kvp, and mAs 150 mill ampere.

The result showed, the male were more affect than female and there were linear relationship between the stone lengths, width, area, CT number with age.

CT number can characterize the stone type and CT-KUB has accuracy 100%, the sensitivity 100%, and the specificity equal zero.

There is significant correlation between age of the patient and stone size (correlation significant 0.934) as well as between the size and stone density (correlation significant 0.920).

CT-KUB has great value in detection of calculus as it is accurate without magnification.

ملخص الدراسة

الهدف من هذه الدراسة هو تحديد دقة الأشعة المقطعية في اكتشاف حصوي الجهاز البولي .

أجريت هذه الدراسة في مستشفى يستبشرون في الفترة من فبراير 2013 إلى أغسطس 2013.

عينة من 50 مريض وكان عدد الذكور 33 (66%) و عدد الإناث 17 (34%) و كان عمر المرضى بين 20-65 سنة و تم عمل صورة أشعة مقطعية .

و تم عمل الصور المقطعية لكل المرضى تم الحصول علي طول وعرض ومساحة و رقم الأشعة المقطعية للحصوة و تم قياسه بالكمبيوتر.

تم استخدام جهاز أشعة مقطعية 16 شريحة بسمك شريحة 8 مل و محدد 8.0*16 مل و 120 كيلو فولت و 150 مللي أمبير.

النتائج أظهرت أن الذكور أكثر إصابة بالحصوي من الإناث و هنالك علاقة خطية بين طول وعرض ومساحة ورقم الأشعة المقطعية للحصوة مع العمر .

من خلال رقم الأشعة المقطعية يمكن معرفة نوع الحصوة و الأشعة المقطعية لها دقة 100% وحساسية 100% ومحدودية صفر.

كما بينت الدراسة وجود إرتباط ذو دلالة معنوية بين العمر وحجم الحصوة (قيمة الإحتمال 0.934) وكذلك بين كثافة وحجم الحصوة (قيمة الاحتمال 0.920).

الأشعة المقطعية ذا قيمة كبيرة في كشف عن الحصوة في الجهاز البولي ولها دقة كبيرة بدون تكبير.