Dedication

To the candle that is burring for me, my dear parent

To my extraordinary supporter, my friend Abdurrahman Mohammad Nor

To all my reader

Acknowledgements

I am extremely grateful to many people who have supported me during this research

Firstly, I would like to thank my supervisor autaz Hussein Ahemad Hassan, for continuous guidance, assistance, endless advice during and through out this research.

I would also like to thank all of technologist with whom I work in the two centers and helping, diagnosing the CT images.

Abstract

The objectives of this study is to evaluate the accuracy of computerized tomography urography (CTU) in diagnoses the underlying pathology of hydronephrosis, minimize the radiation dose, examination cost, and time to reach the final diagnoses.

The study performed in two hospitals: AL Ribat University Hospital and Khartoum scan centre -Bahri, during the period from March to August 2009. Siemens somatom sensation 16 slice helical CT scan apparatus was used. Abd Routine protocol was performed with or without administration of Amanopaque as contrast media.

A total of 63 patients with hydronephrosis CTU detected the underlying pathology of hydronephrosis in59 out of 63(93.7%), and failed in 4 cases to detect it, although CTU detect the presence of hydronephrosis in these cases. These cases include, one case of lower ureteric ligation during surgical operation, one case of urinary tract neoplasm ,and two cases of chronic inflammatory of urinary tract.

CT has become promising modality for diagnosing the underlying pathology of hydronephrosis, and concluded to that CTU is good protocol for demonstration the underlying pathology of hydronephrosis than IVUand U/S.

The study provided assorts of recommendations in how to select the imaging modalities and imaging step of patients that high suggested hydronephrosis, and revealed the problems that need more research and studies.

ملخص الدراسه

هدفت هذه الدراسه الى تقييم فحص الاشعه المقطيه الملون للجهاز البولى فى تشخيص الامراض

المسببه للتموه الكلوى,وذلك لتقليل تعرض المرضى للاشعه المؤنيه وتقليل تكلفة الفحوصات والزمن المطلوب للوصول للتشخيص النهائى.

صممت هذه الدراسه بمستشفى الرباط الجامعى ومركز السودان للتشخيص بحرى فى الفتره من مارس الى اغسطس لعام 2009

استخدم فى هذه الدراسه جهاز اشعه مقطعيه حلزونى ذو 16 مقطع فى كل تعرض لشركة سيمنس باستخدام فحص البطن العادى مع او بدون مادة الامينوبيق كماده ملونه

فى 63 مريض بالتموه الكلوى نجح الفحص فى تشخيص الامراض المسببه له فى 59 حالة بنسبة(93.7) وفشل فى تحديد الامراض المسببه للتموه الكلوى فى اربعة حالات,مع انه اشار بوضوح لوجود التموه الكلوى. وتشمل هذه الحالات ,حاله واحده ربط اسفل الحالب اثناء عمليه جراحيه,حاله واحدة وجود خلايا سرطانيه بالجهاز البولى,وحالتين التهاب مزمن بالجهاز البولى

وقد اقترحت الدراسه ان الاشعه المقطيه هى افضل الخيارات لتصوير الامراض المسببه للتموه الكلوى,كما ان الدراسه خلصت الى ان فحص الاعه

المقطعيه الملون افضل فى تشخيض هذا المرض من الاشعه الملونه والموجات الصوتيه

قدمت الدراسه عدة توصيات فى كيفية اختيار طريقة التصوير وخطواته للمرضى الذين يعانون من التموه الكلوى

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Abbreviation

CT:-computerized tomography
CTU;-computerized tomography urography
CTKUB : computerized tomography ,Kidneys ,Ureters . Bladder
U/S;-ultra sound
IVU;-intra venous urography
UB:-urinary bladder
IV:-intra venous
IRCS: intra renal collecting system
mSv: millisever
eg:-example
3D:three dimension
UT:-urinary tract
BUN: blood urea nitrogen
MPR:- multi planner reconstruction
MIP:-maximum intensity projection
Abd:-abdomen
mGy:-milligray
KV: kilo voltage
MAS: milliampare second
Sec: second