VALUE OF MULTIDETECTOR COMPUTED TOMOGRAPHY IN DIAGNOSIS OF GASTRIC CARCINOMA

Essay
Submitted for Fulfillment of
Master degree in Diagnostic Radiology

BY

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2009

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INTRODUCTION

-Gastrointestinal malignancies are among the leading causes of cancer death. Because of the close correlation between early detection of these tumors and prognosis they present a special challenge to clinicians(Valencak and Raderer,1998).

-Gastric carcinoma and lymphoma are the most common malignant neoplasm of the stomach. Each of these has a variable radiographic appearance.Other malignant neoplasms are considerably less common(Stabile et al,2003).

-For many years barium examination and endoscopy were the only diagnostic methods for evaluating diseases of the gastrointestinal tract.In the last 15 years however,CT has been shown to be an essential tool in the diagnostic evaluation of the gastrointestinal tract(Koehler et al,1998).

-The wide availability of high resolution fast scanners and the use of the safer contrast materials,combined with increasing experience in both performing and interpreting,studies have led to the maturity of CT into a vital diagnostic tool in the the assessment of the gastrointestinal malignancies especially with the recent use of multidetector CT scanning(Rogala et al,2001).

-It was found that mulidetector CT carries many advantages including shorter acquisition time,retrospective creation of the thinner and thicker sections from the same raw data,better

resolution and ease of performance(Ng et al,2004).In addition,multidetector CT scanners improve the quality of the 3-dimensional CT(3DCT) images that are valuable to the clinicians and surgeons(Horton and Fishman,2004).

-Recent advances in computer assisted virtual reality data post processing techniques with rapid image acquisition have led to development of virtual reality imaging.It allows navigation through any hollow air distended viscus with consequent production of endoluminal images that permit visualization of intrinsic lesions(Rogala et al,2001).

- The use of 2D multiplanar reconstructions (MPRs) and virtual gastroscopy using a volume-rendering (VR) technique is a promising 3D imaging technique for the preoperative evaluation of gastric cancer. Application of these techniques for the detection of gastric cancer using MDCT has been reported.(Kumano S et al,2005)

-Virtual gastroscopy provides gastroscopic viewing; therefore, it is expected to overcome the limitations of 2D axial CT in the detection of early gastric cancer. (Kim JH,2006)

AIM OF THE WORK

-The aim of this work is to evaluate the role of multidetector CT in the assessment of gastric carcinoma.

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الملخص العربى

إن الهدف من تلك الدراسة هو توضيح دور الاشعة المقطعية بالحاسب الآلى متعددة المقاطع فى تشخيص الاورام الخبيثة التى تصيب المعدة.

وتعد اورام المعدة من اهم اسباب الوفاة من الامراض الخبيثة فى العالم.

ولقد ساعد التطور التكنولوجى النوعى والكمى في مجال الحاسب الآلى ووجود الاشعة المقطعية متعددة المقاطع فى سهولة التشخيص والتعرف على تلك الاورام ومتابعة نتائج ما بعد العمليات الجراحية من بقايا لها او ارتدادها مرة اخرى.

ويتميز الفحص بالاشعة المقطعية متعددة المقاطع بانه اسرع واسهل مقارنة بالفحص التقليدى بالاشعة المقطعية المعتادة مع امكانية استخدام الصور ثلاثية الابعاد فى توضيح تلك الاورام بشكل افضل.

ومن خلال تلك الدراسة توصلنا الى ان تلك الاشعة المقطعية المتعددة المقاطع تعد طريقة الفحص الامثل فى تقييم الاورام المختلفة التى تصيب المعدة فهى تساعد فى تحديد مكان الورم بدقه ومدى امتداده فى محيطه وتقييم انتشاره فى البطن والحوض.كما توضح امتداده الى

الغدد الليمفاوية وتساعد ايضا فى تحديد مراحل نمو الورم وتوصيفه من خلال خصائصه التصويرية.

ومع هدا فإن للاشعة المقطعية بعض العيوب منها إرتفاع تكلفة الفحص وعدم توافر أجهزة الاشعة المقطعية فى كثير من المستشفيات كما أنها تعرض المريض للحقن بالصبغة مما قد يؤدى الى بعض الاعراض الجانبية.

قيمة الاشعة المقطعية بالحاسب الآلى متعددة المقاطع فى
تشخيص الاورام الخبيثة للمعدة

رسالة
مقدمة توطئة للحصول على درجة الماجستير
فى الاشعة التشخيصية

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كلية الطب -جامعة عين شمس

2009

Acknowledgement

Acknowledgement

First & foremost I feel always deeply indepted to Allah, the Most Gracious and the Most Merciful.

I wish to express my deepest gratitude and respect to **DR. OLA NOUH**, Professor of Radiodiagnosis, Faculty of Medicine, Ain Shams University, for her kind guidance and generous supervision.

I would like to express my great thanks to **DR. HOSSAM MORSY**, Assistant Professor of Radiodiagnosis, Faculty of Medicine, Ain Shams University, for his sincere advice and kind support all through this study.

I would also like to express my appreciation to all my professors, staff and colleagues.

Lastly and not least, I send my deepest love and gratitude to my parents, my family, for their love, care and ever-lasting support.

List of abbreviations

MDCT	Multidetector Computed Tomography
MSCT	Multislice Computed Tomography
EGC	Early Gastric Cancer
pTNM	Pathologic Tumor, Nodes, Metastases
GIST	Gastrointestinal Stromal Tumor
FOV	Field of view
MPR	Multiplanar Reformation
VR	Volume Rendering
EUS	Endoscopic Ultrasonography
MR	Magnetic Resonance
VG	Virtual Gastroscopy
GIT	Gastrointestinal Tract

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