VALUE OF ULTRASONOGRAPHY IN THE DETECTION OF HEPATIC FOCAL LESIONS IN PATIENTS PRESENTING WITH OR WITHOUT HEPATOMEGALY

THESIS

Submitted in Partial Fulfillment

of the M.D Degree

Tropical Medicine

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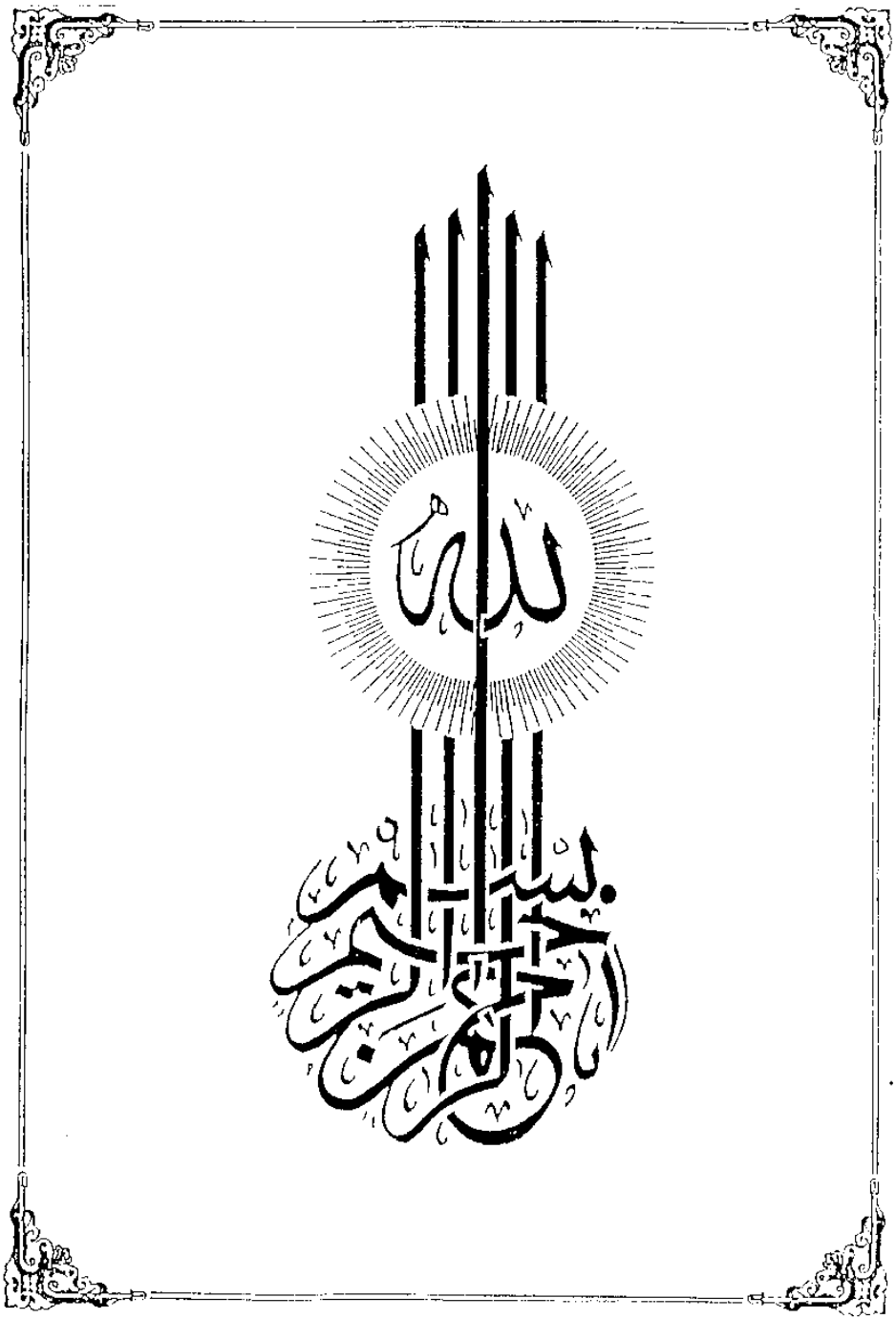
1991

"قل سيروا في الارض فانظروا كيف بدأ الخلق"

صدق الله العظيم



ACKNOWLEDGEMENT

I would like to express my deepest gratitude and thanks to Prof. Dr. SALAH SAIF EL DIN, Professor of Tropical Medicine, Ain Shams University for suggesting the topic of this thesis and for his kind guidance and support during the course of this work.

I would like also to express my sincere gratitude and appreciation to Prof. Dr. NOAMAN MOHAMED HASEEB, Professor and Head of Tropical Medicine Department, Ain Shams University for his continous help and supervision throughout the work.

I would like also to express my gratitude and thanks to Prof. Dr. MOHAMED ALY MADWAR, Professor of Tropical Medicine, Ain Shams University, for his help during this work.

I am really grateful to Prof. Dr. MOHAMED FATHY ABDEL WAHAB, Professor of Tropical Medicine, Ain Shams University, who always offer his help and advice so generously.

Many thanks to Dr. MAMDOUH AHMED GHONEIM, Assistant Professor of Radiology, Ain Shams University for his cooperation during this work.

I am greatly endebted to Dr. ZAKARIA YEHIA MOHRAN, Lecturer of Tropical Medicine, Ain Shams University for his great effort, meticulous revision and valuable advice during the course of this work.

To Dr. ZAKARIA ABDEL LATIF SALAMA, Lecturer of Tropical Medicine, Cairo University, I owe too much, he really was of great help in teaching me what is ultrasound, generous in providing me much of his experience and advice.

Last but by no means the least, I am grateful to all the staff of Tropical Medicine Department, Ain Shams University.

REVIEW OF LITERATURE

ERRATUM

Page NO	Mistake	Correction
5	descending	ascending
7	wrimbling	wrinkling
27	fever	fewer
27	with	without
52	stoma	stroma
54	are likely	are not likely
172	Labaratory	Laboratory
177	thickned	thickened
182	homogensis	homogenous
183	hyochondrial	hypochondrial
183	epigastric	epigastric pain
183	Amyloidlosis	Amyloidosis
188	polycystic	polycystic
223	pancrea	pancreas

CONTENTS

INTRODUCTION

INTRODUCTION AND AIM OF THE WORK

Focal lesions of the liver are not uncommon and are usually not easily diagnosed clinicaly. Such patients may present clinicaly with a dull aching pain in the right hypochondrium or epigastrium and the liver may or may not be palpable. While the value of ultrasound in the detection of diffuse liver diseases is doubtful yet its role in detecting focal lesions is important.

In 1982 Abdel Wahab et al. were able to diagnose correctly 25 out of 30 hepatic malignancies by means of ultrasound, while amoebic liver abscesses and hydatid cysts of the liver were also described (Abuel Khair and Arafa 1982, Abd Rabbo 1983).

It is not uncommon to discover accidentaly focal lesions in the liver in patients during an ultrasound examination many of whom were not clinicaly diagnosed as a hepatic disease at all. Also we are sometimes confronted with patients proved to be suffering from stone in the gall bladder or biliary tree with severe epigastric or right hypochondrial pain and ultrasonography was the only mean for detecting such

lesion.

Not only so but the detection of focal lesions in patients with an enlarged liver with a smooth surface is also increasingly important and is without doubt a difficult clinical problem. The early detection of such focal lesions is mandatory in order to diagnose their nature and to manage them as early as possible.

Aim of the work:

The aim of this work is twofold :

1. To assess the value of ultrasonography in the detection of the various hepatic focal lesions in patients presenting with hepatomegaly.
2. To assess its value in the detection of organic hepatobiliary lesions in patients presenting with epigastric and/or right hypochondrial disorders, but not suspicious of hepatic or gall bladder disease.

CHAPTER ONE

ANATOMY OF THE LIVER

The liver, the largest organ in the body weighing about 1200 - 1500g and it comprises about one-fiftieth of the adult body weight (Schaffner and Popper, 1985). The greater part of the liver lies under cover of the ribs and costal cartilages, and is in contact with the diaphragm which separates it from the pleural cavity and lung (Romanes, 1971).

The liver has a double blood supply, the portal vein bringing venous blood from the intestine and spleen, and the hepatic artery arising from the coeliac axis supplying the liver with arterial blood. These vessels enter the liver through the porta hepatis, dividing into branches to the right and left lobe (Sherlock, 1989).

The human liver is divided into right and left lobes of almost equal size by a left longitudinal groove on the inferior surface of the organ. This groove contains the ligamentum teres and the remnant of the ductus venosus. The right longitudinal groove contains part of the gall bladder bed anteriorly and the groove

in which the vena cava lies posteriorly, The 2 longitudinal grooves are connected in the middle by a transverse groove that contains the porta hepatis or hepatic hilum. The small quadrate lobe, not clearly demarcated is below the hilum, and a small caudate lobe is cephalad to the hilum on the inferior surface (Schaffner and Popper, 1985).

Segmental Anatomy

One lobar fissure is in line with the fissure of the inferior vena cava above and the fossa of gall bladder below. This fissure takes an oblique course from left to right to the porta hepatis and divides the liver into two anatomical left and right lobes. The left segmental fissure divides the two left lobes into medial and lateral segments. The right segmental fissure divides the right lobe into an anterior and a posterior segment (Healey, 1970).

Anatomy of the portal venous system

The portal system is a system of veins which drains blood from the abdominal part of the alimentary tract, spleen, gall bladder and pancreas. It is formed mainly from : portal, splenic, superior and inferior mesentric veins (Sherlock, 1989).

The portal vein usually begins at the level of second lumbar vertebra by the union of splenic and superior mesenteric veins. It then ascends lying behind the common bile duct and the hepatic artery. It ends at the porta hepatis by dividing into two branches the right and the left. The right branch is joined by the cystic vein before it enters the liver. The left branch is connected the ligamentum teres which is a remnant of the obliterated left umbilical vein (it runs in the free border of the falciform ligament) (Last, 1973).

The splenic vein begins by 5-6 tributaries from the spleen. Such tributaries are then joined by the short gastric vessels to form a single vessel. It usually receives the inferior mesentric vein at a right angle to form the portal vein (Warwick and Williams, 1975).

The superior mesentric vein collects blood from the small intestine, caecum, the descending and transverse part of the colon. It usually begins in the right iliac fossa and ascends in the mesentry until the neck of the pancreas to meet the splenic vein (Gardner et al., 1975).

The inferior mesentric vein drains blood from the rectum, the segmoid and the descending parts of the colon. Starting as the superior rectal vein it continues upwards ending in the medial third of the splenic vein but it may sometimes enter the junction of the splenic and the superior mesentric veins (Romanes, 1971).

Accessory lobes

The liver of the pig, dog and camel is divided into distinct and separate lobes by strands of connective tissue. Occasionally the human liver may show this reversion and up to sixteen lobes have been reported. This abnormality is rare and without clinical significance. The lobes are small and usually on the under surface of the liver so they are not detected but noted accidentely at scanning, operation or necropsy (Sherlock, 1989). An accessory lobe may have its own mesentery containing hepatic artery, portal vein, bile duct and hepatic vein (Pujari and Deodhare, 1976).

Riedel's lobe

It is fairly common. It is a downward tongue like projection of the right lobe of the liver. It is a simple anatomical variation, it is detected as a mobile