

***ESOPHAGEAL MOTOR FUNCTION EVALUATED BY
SCINTIGRAPHY AND MANOMETRY IN DIABETIC PATIENTS***

Thesis

Submitted for partial Fulfillment of
M.Sc. Degree in internal Medicine

By

Ashraf Hassan Ahmed El-Shaar

(M.B., B. Ch.)

616.462
A.H

Supervised by

Dr. Khaled Hemida

*Assist. Professor of Internal Medicine
Ain Shams University*

Dr. Malak Bahgat

*Assist. Professor of Internal Medicine
Ain Shams University*

Dr. Hala Abo Senna

*Assist. Professor of Radiology
Ain Shams University*

Faculty of Medicine

Ain Shams University

1998



بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا
إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ

صدق الله العظيم

١٠٠
١٠١
١٠٢

١٠٣
١٠٤

١٠٥
١٠٦

١٠٧
١٠٨

Acknowledgment

First and foremost, I thank God who gave me the strength to fulfill this work. I would like to thank Professor **Dr. Ali Monis**, Professor of internal Medicine and Hepatology, Ain Shams University, for his experienced guidance and continuous encouragement.

I wish to thank **Dr. Khaled Hemida**, Assistant Professor of Internal Medicine, Ain Shams University for his great effort and close supervision.

I am also grateful to **Dr. Malak Bahgat**, Assistant Professor of Internal Medicine, Ain Shams University for her unlimited support and help in this work.

I would like to thank **Dr. Hala Abo Senna**, Assistant Professor of Radiology, Ain Shams University for her kind help in assessing my cases radiologically.

Dr. Ashraf El Shaar
1998

TABLE OF CONTENTS

	<i>Page no.</i>
Introduction and Aim of the work	1-2
Review of Liberature	
Chapter 1 : Anatomy of the Esophagus	3-11
Chapter 2 : Esophageal Physiology and normal Motility	12-21
Chapter 3 : Motility Disorders of the Esophagus (definition and classification)	22-24
Chapter 4 : Diabetic Neuropathy (classification and pathogenesis)	25-43
Chapter 5 : Diabetes Mellitus and Gastro Intestinal Tract	44-51
Chapter 6 : Esophageal Function Tests	52-57
Chapter 7 : Esophageal Scintigraphy	58-60
Chapter 8 : Esophageal Manometry (technique, it's applications and limitation)	61-69
Subjects and Methods	70-75
Results	76-86
Discussion	87-92
Summary and Conclusion	93-94
References	95-111
Arabic Summary	

List of Abbreviations

UES	:	Upper esophageal sphincter
LES	:	Lower esophageal sphincter
LESP	:	Lower esophageal sphincter pressure
TLESR	:	Transient lower esophageal sphincter relaxation
DM	:	Diabetes Mellitus
GIT	:	Gastrointestinal Tract
VIP	:	Vasoactive intestinal peptide
GRP		Calcitonin gene-related peptide
NIDDM	:	Non-insulin dependent diabetes mellitus
HDL	:	High density lipoproteins
ECG	:	Electrocardiogram
FBS	:	Fasting blood sugar
PPBS	:	Post prandial blood sugar
Ca	:	Calcium

INTRODUCTION

INTRODUCTION

The field of esophageal motility has gained increasing interest in the last years. The availability of new investigator techniques for motility studies leads to growing awareness and better understanding of this new subject. (*Closure Ray E. et al., 1986*).

Esophageal motility disorders are quite common in clinical practice, whether functional or organic. Organic causes include diabetes mellitus, peptic ulcer disease, postgastric surgical states, chronic gastritis, reflux esophagitis, scleroderma, systemic neuromuscular disorders, .. etc. (*Sudkwist G. et al., 1989*).

Extensive work has been held to investigate motility disorders like esophageal scintigraphy and manometry in diabetic patients, previous studies showed that there is relationship between diabetes mellitus and esophageal motility abnormality and neuropathy (*Brogstom P.S. et al., 1988*).

The mechanism behind esophageal smooth muscle dysfunction is related to autonomic neuropathy, phymacologic and histologic studies have displayed vagal Neuropathy as being responsible.

Radiological examination have the advantage of showing not only the motor function of the esophagus but also possible morphological lesions which might be responsible for dysphagea as exhibited in some patients with normal motor function. Another advantage of scintigraphy is possibility for evaluating esophageal reflux seen in some patients. Manometric esophageal motor

abnormalities can be seen in patients with normal scintigraphy
(Vernon A. Vix, 1969).

AIM OF THE WORK

The aim of this present work is to clarify the interrelation ship
between esophageal motility abnormalities in diabetic patients by
scintigraphy and manometry.