



شبكة المعلومات الجامعية

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ





شبكة المعلومات الجامعية



شبكة المعلومات الجامعية

التوثيق الالكتروني والميكرو فيلم

جامعة عين شمس

التوثيق الالكتروني والميكرو فيلم

قسم

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون أية تغيرات



يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %



شبكة المعلومات الجامعية



بعض الوثائق الأصلية تالفة



شبكة المعلومات الجامعية



بالرسالة صفحات
لم ترد بالأصل

Role of Ultrasonography in The Diagnosis of Basal Chest Opacities

Thesis

Submitted for parial fulfillment of master degree in chest
diseases & tuberculosis

By

Ibrahim Mohammed Ibrahim

(M.B.B.Ch)

Under supervision of

Prof. Ali Abdel Halim Mabrouk

Prof. of Chest Diseases

Faculty of Medicine, Menoufiya University

Prof. Adel Mohammed El-Wakil

Prof. of Diagnostic Radiology,

Faculty of Medicine, Menoufiya University

Dr. Mohammed Attia Zamzam

Ass. Prof. of Chest Diseases ,

Faculty of Medicine, Menoufiya University

Dr. Amal Amin Abdel Aziz

Lecturer of Chest Diseases,

Faculty of Medicine, Menoufiya University

**Faculty of Medicine
Menoufiya University**

2005

B o . v e

Acknowledgement

First of all, I am deeply thankful to Allah by the grace of whom this work was possible.

It is my pleasure to express my deepest gratitude, and sincere thanks to Prof. Ali Abdel Halim Mabrouk, Prof of Chest Diseases, Faculty of Medicine, Menoufiya University for his generous concern, sincere supervision, valuable suggestion and continuous support throughout this work.

I wish also to express my sincere gratitude and thanks to Prof. Adel Mohammed El-Wakil, Prof. of Diagnostic Radiology, Faculty of Medicine, Menoufiya University for his generous concern, kind supervision, sincere encouragement, valuable advices and instructions throughout the practical part of this work.

I wish also to express my sincere gratitude and thanks to Dr. Mohammed Attia Zamzam, Ass. Prof. of Chest Diseases, Faculty of Medicine, Menoufiya University for his generous concern, kind supervision, sincere encouragement, valuable advices and instructions throughout this work.

My deepest gratitude, and appreciation and thanks to Dr. Amal Amin Abdel Aziz, Lecturer of Chest Diseases, Faculty of Medicine, Menoufiya University, for her kind supervision, valuable suggestions, and cooperation, continuous advice support, choosing the cases and saving no effort or time in reading each word in this work.

My deepest gratitude, and appreciation and thanks to Dr Ashraf Zaiton Ass. Lecturer of Radiology department, Faculty of Medicine, Menoufiya University, for his support and sincere help in the practical part of work.

My deepest thanks, gratitude and love to my parents who give me more than one can wish.

Ibrahim Mohammed 2005

Contents

List of tables	
List of figures	
List of abbreviations	
Introduction	1
Aim of the work	3
Review of literature	4
History Of Chest Ultrasonography (US):	4
Basic Principles	5
Normal sonographic appearance of the chest	12
Diagnostic US of the Chest diseases	16
Diseases of the Chest Wall	18
Role of ultrasonography in diagnosis of pleural diseases	21
Role of ultrasonography in diagnosis of diaphragmatic diseases	38
Role of Ultrasonography in diagnosis of Pulmonary diseases	40
Transthoracic US of the Mediastinum	51
Ultrasonography-guided Thoracic Intervention	53
Role of Ultrasonography in the Intensive Care Unit (ICU)	65
Patients and methods	67
Results	73
Case presentation	90
Discussion	105
Summary	123
Conclusion	125
References	126
Arabic summary	
Protocol	

List of Figures

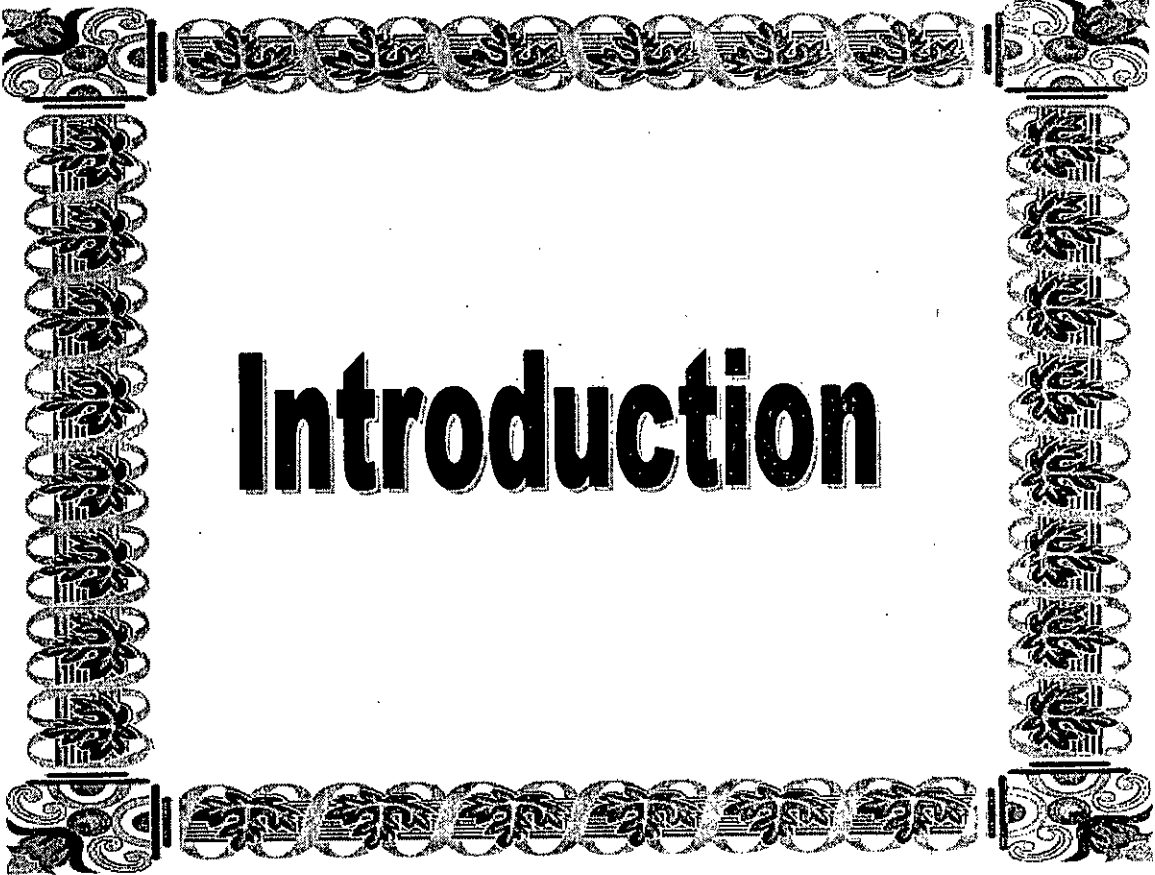
Figure	page
Figure (1)	13
Figure (2)	18
Figure (3)	19
Figure (4)	19
Figure (5)	23
Figure (6)	28
Figure (7)	32
Figure(8)	32
Figure (9)	33
Figure (10)	35
Figure (11)	41
Figure (12)	41
Figure (13)	49
Graphs	90
Case (4)	96
Case (6)	97
Case (7)	98
Case (10)	99
Case (11)	100
Case (14)	101
Case (16)	102
Case (19)	103

List of Abbreviations

ARDS	: Acute respiratory distress syndrome.
COPD	: Chronic obstructive pulmonary disease.
CT	: Computed tomography.
CXR	: Chest X- Ray
EBUS	: Endobronchial ultrasound of the airways and the mediastinum.
HRCT	: High resolution computed tomography
Hz	: Hertz.
KHz	: Kilo Hertz.
MHz	: Mega Hertz.
ICU	: Intensive Care Unit.
MRI	: Magnetic Resonance imaging.
PA	: Postero-anterior
PAVMs	: Pulmonary arteriovenous malformations.
PTNA	: Percutaneous transthoracic needle aspiration.
TBNA	: Transbronchial Needle Aspiration.
PTNB	: Percutaneous transthoracic needle biopsy.
VATS	: Video Assisted Thoracoscopic Surgery.
US	: Ultrasonography.
UP	: Ultrasound pattern.

List of Tables

<i>Table</i>	<i>page</i>
<i>Table (1)</i>	16
<i>Table (2)</i>	73
<i>Table (3)</i>	74
<i>Table (4)</i>	74
<i>Table (5)</i>	75
<i>Table (6)</i>	76
<i>Table (7)</i>	77
<i>Table (8)</i>	77
<i>Table (9)</i>	78
<i>Table (10)</i>	78
<i>Table (11)</i>	79
<i>Table (12)</i>	80
<i>Table (13)</i>	81
<i>Table (14)</i>	81
<i>Table (15)</i>	82
<i>Table (16)</i>	83
<i>Table (17)</i>	83
<i>Table (18)</i>	84
<i>Table (19)</i>	89

A decorative border composed of repeating circular and floral motifs, forming a rectangular frame around the central text.

Introduction

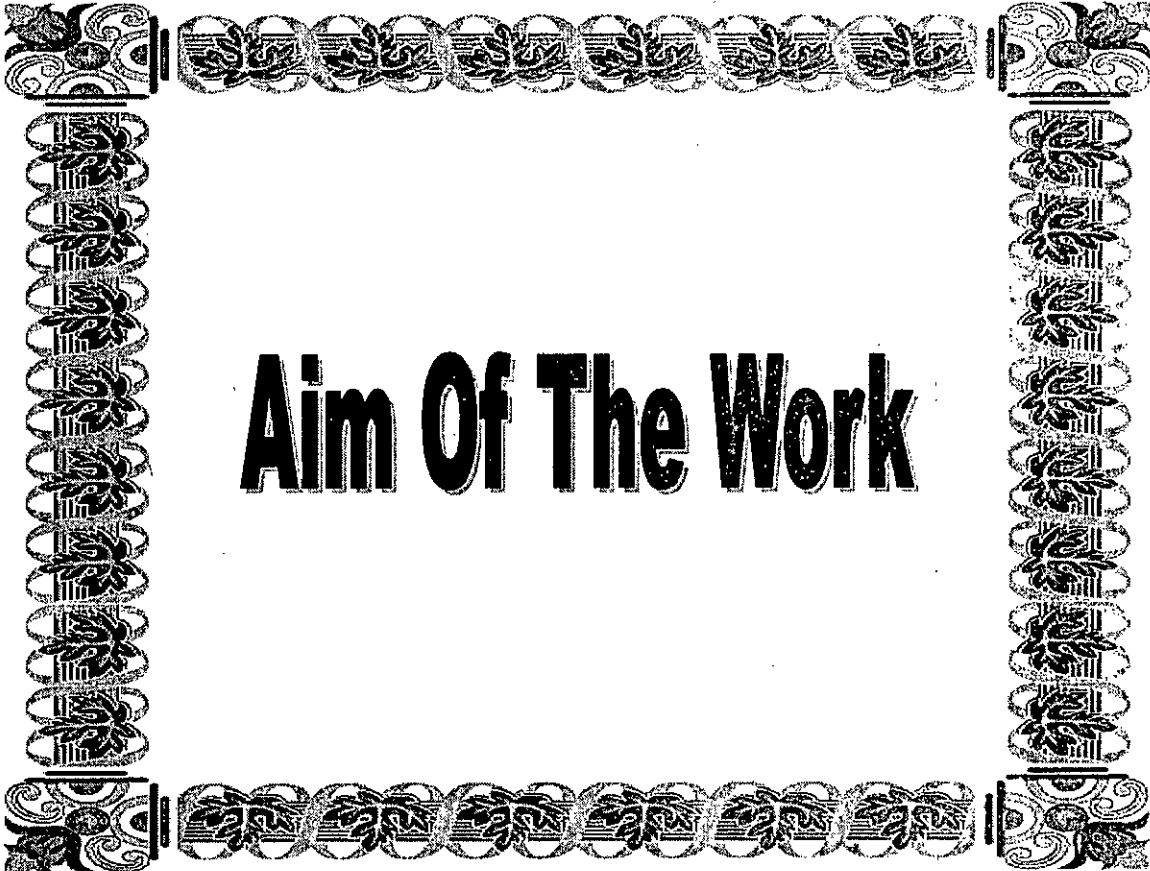
Introduction

Many different imaging modalities are used to evaluate the chest. The most commonly ordered and least expensive is radiography chest X-RAY (CXR). This test has high clinical utility for infectious diseases and screening patients at high risk for lung cancer. Its cost is low, especially for screening PA (postero-anterior) studies and radiation is also low (under 0.16 rad for PA studies). Also its accessibility is high, even in an out patient or nursing home setting, as portable X-RAY units are readily available. ⁽¹⁾

However, plain radiograph alone is not enough for the diagnosis of a complex lung disease, for example, a tumour hidden in massive pleural effusion. Moreover, it does not sometimes give enough data to know the nature of the opacification ⁽²⁾ Digital chest radiography will be more common in the future as image quality and acceptance improve. ⁽¹⁾

During the past 20 years, new techniques have emerged in thoracic imaging, such as spiral Computed tomography CT scanning, high-resolution CT scanning (HRCT), and Magnetic Resonance imaging (MRI). The ability to transform images into electronic data that may be manipulated and shared with other consultants has revolutionized health care. ⁽³⁾ CT scan has the capability of demonstrating well the topographic-relationship between different anatomical structures in a complex lung disease and can declare the nature of the lesion ⁽⁴⁾. CT has the advantages of superior reproducibility, high spatial precision, a wide field of view, and applications to air-filled and bone regions ^{(5) (6)}.

Unfortunately, CT has the disadvantages of high cost and exposure to



Aim Of The Work

Aim of The Work

The aim of this work is to evaluate the potential role of ultrasonography as a diagnostic modality in a variety of basal chest opacities