ROLE OF C.T. PLEURAL LESIONS

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THE MASTER DEGREE RADIO DIAGNOSIS

BY

TAREK MAHMOUD ABD EL-HAMID EL-BIGURMY

M.B.B.CH

SUPERVISORS

Dr. HEBA MOHAMED KHALIL EL-DEEB

ASS.PROF. OF RADIODIAGNOSIS

AIN SHAMS UNIVERSITY

Dr. AHMED ABD-EL-TAWAB

LECTURER OF RADIODIAGNISIS

AIN SHAMS UNIVERSITY

Dr. KHALID TALAT KHAIRY

LECTURER OF RADIODIAGNISIS

AIN SHAMS UNIVERSITY

FACULTY OF MEDICINE

AIN SHAMS UNIVERSITY

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بسم الله الرحمن الرحيم

وما أوتيتم من العلم إلا قليلا

صدق الله العظيم

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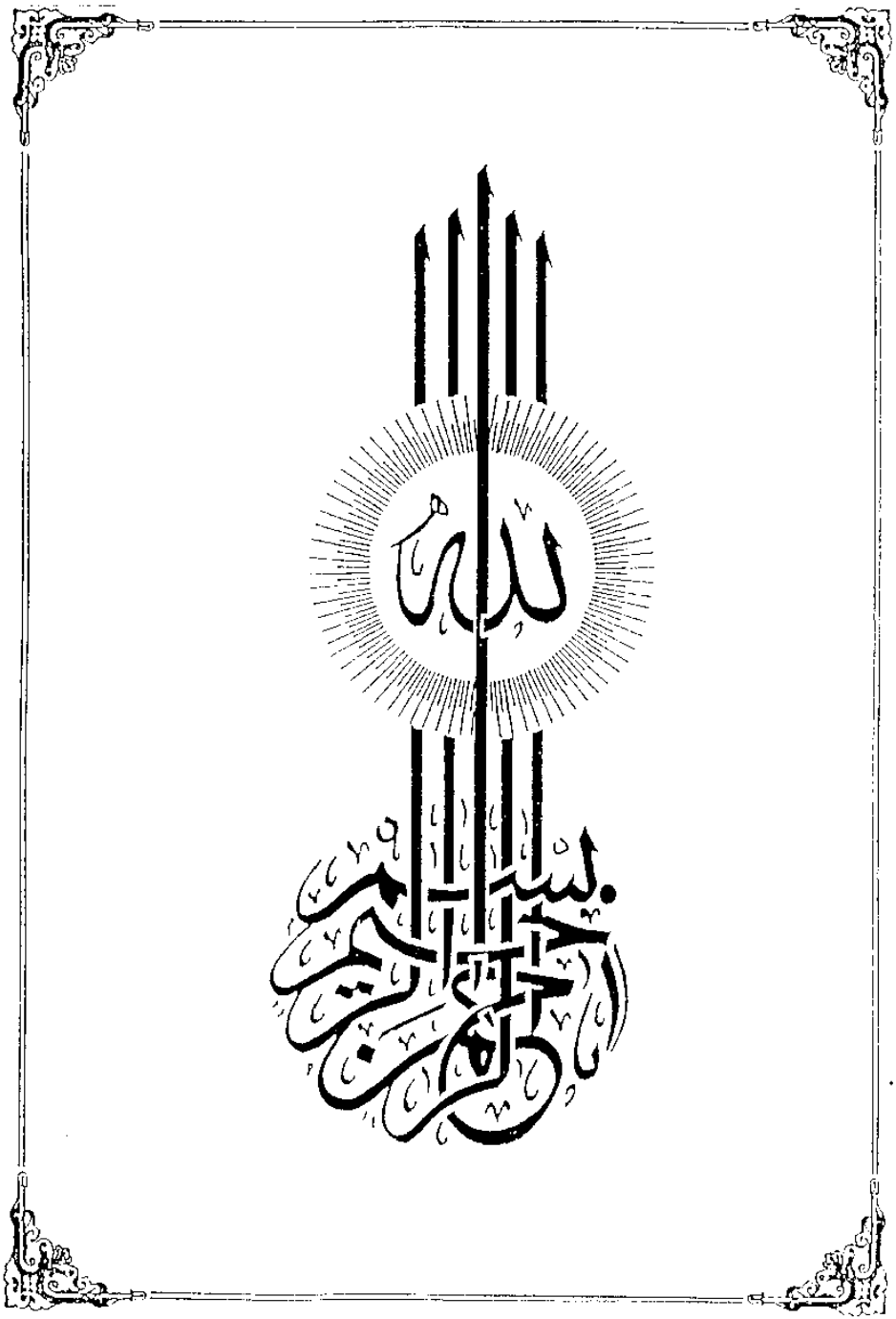

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TO MY PARENTS

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I N D E X

Introduction & aim of work.

INTRODUCTION AND AIM OF WORK

The early stages of pleural pathology are not easily detected at chest radiography. The mediastinal pleura is particularly difficult to evaluate. Pleural abnormalities may be evident on radiographs long before clinical signs are appreciated. Although pleural disease may be easily detected, determining the specific pathologic process may be very difficult.

Computed tomography (C.T) has proved to be the method of choice for revealing pleural lesions. It has assumed an increasing role in identifying and characterizing pleural diseases.

The aim of this work is to evaluate the role and value of C.T in pleural lesions.

Anatomy.

ANATOMY OF THE PLEURA

Each lung is invested by a serous membrane arranged in the form of closed invaginated sac termed the pleura. A part from this serous membrane covers the surface of the lung and lines the fissures between its lobes; it is called the visceral or pulmonary pleura.

The rest of the membrane lines the inner surface of the corresponding half of the chest wall, covers a large part of the diaphragm, and is reflected over the structures occupaying the middle part of the thorax; this portion is termed the parietal pleura. (*Warwick-Williams, 1973*).

In general the visceral and parietal layers can not be seen on C.T scans. However a knowledge of their anatomy and relationship often allows a reliable diagnosis of pleural diseases. (*Moss, et al., 1983*).

The pulmonary and parietal pleurae are continuous with each other arround and below the root of the lung. In health they are in contact in all phases of respiration, the potential space between them being known as the pleural cavity.

When the lung collapses or when air or fluid collects between the pulmonary and parietal pleurae the pleural cavity becomes apparant.

The right and left pleural sacs are distinct from each other and come into contact for just a short distance behind the upper half of the body of the sternum, where they are separated by a narrow interval behind the oesophagus in the mid thoracic region called the interpleural space or mediastinum.

The pulmonary pleura is inseparably connected with the lung and adherent to all surfaces including those which bound the fissures betwwen the lobes of the lung; but absent over an area where the lung root enters, and along a line extending downwards from this and marking the attachement of pulmonary ligament. (*Warwick-Williams, 1973*).

It is not a ligament, it provides dead space into which the lung root descends with descent of the diaphragm and into which the pulmonary veins can expand during increased venous return as in excercise. (*Last, R.J, 1986*).

The parietal pleura : The parietal pleura has distinctive names; the part lining the internal aspect of the ribs and transversus thoracis is the costal pleura; that clothing the thoracic surface of the diaphragm is the diaphragmatic pleura; that ascending into the neck over the summit of the lung is the cervical pleura or dome of the pleura, and that applied to the structures occupaying the interpulmonary region is the mediaiastinal pleura. (**Warwick-Williams, 1973**).

The costal pleura : (Figure 1-3). It lines the sternum, ribs, the constituent parts of the transversus thoracis, and the sides of the bodies of the vertebrae, and is easily separated from them. Outside the costal pleura there is a thin layer of loose areolar tissue called the endothoracic fascia. (**Warwick-Williams, 1973**).

It consists merely of fibrous tissue that attaches the pleura to the chest wall.

A similar layer binds the pleura to the diaphragm. (**Last, R.J, 1986**). In front, the costal pleura begins

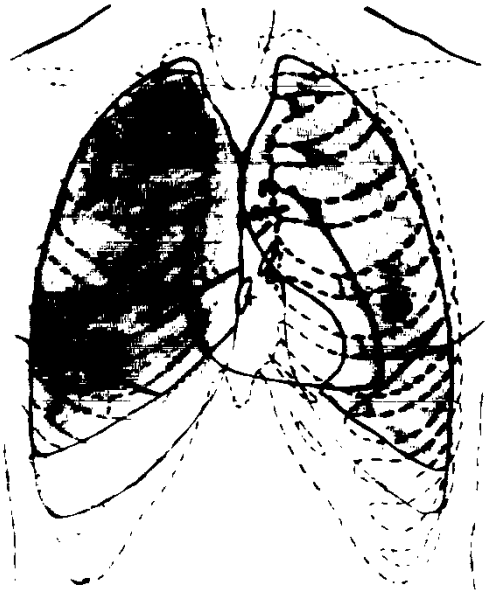

Fig. (1)

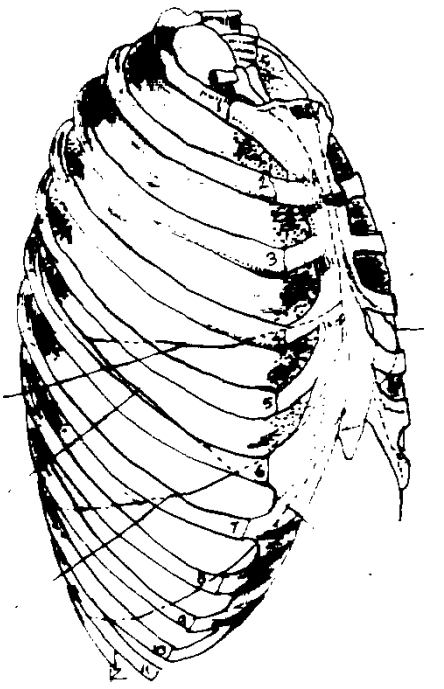

Fig. (2)

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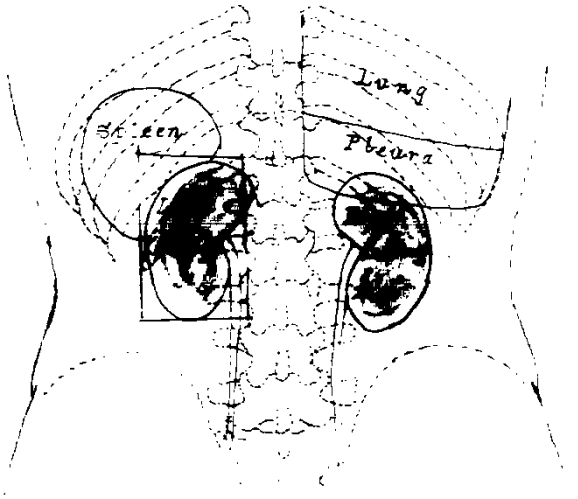

Fig. (3)

behind the sternum where it is continuous with the mediastinal pleura.

The line Junction of the mediastional pleura with the costal pleura extend from behind the sternoclavicular Joint downwards and medially to a point in the median plane behind the sternal angle.

From this point the rigth and left costal pleurae descend in contact with each other as far as the level of the fourth costal cartilages. below which the line differs on the two sides.

On the right side it is continued down to the posterior surface of the xiphisternal Joint .

On the left side it diverges laterally and descends close to the margins of the sternum, to the level of the sixth costal cartilage.

On each side the costal pleura sweeps laterally lining the inner surfaces of the costal cartilages, ribs and the constituent parts of the transversus thoracis, at the back of the thorax it passes over the