RADIOLOGICAL IMAGING OF ESOPHAGEAL CARCINOMA

ESSAY

Submitted in partial fulfilment for
Master Degree of **Radiodiagnosis**

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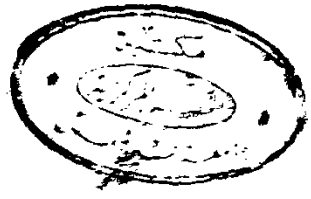

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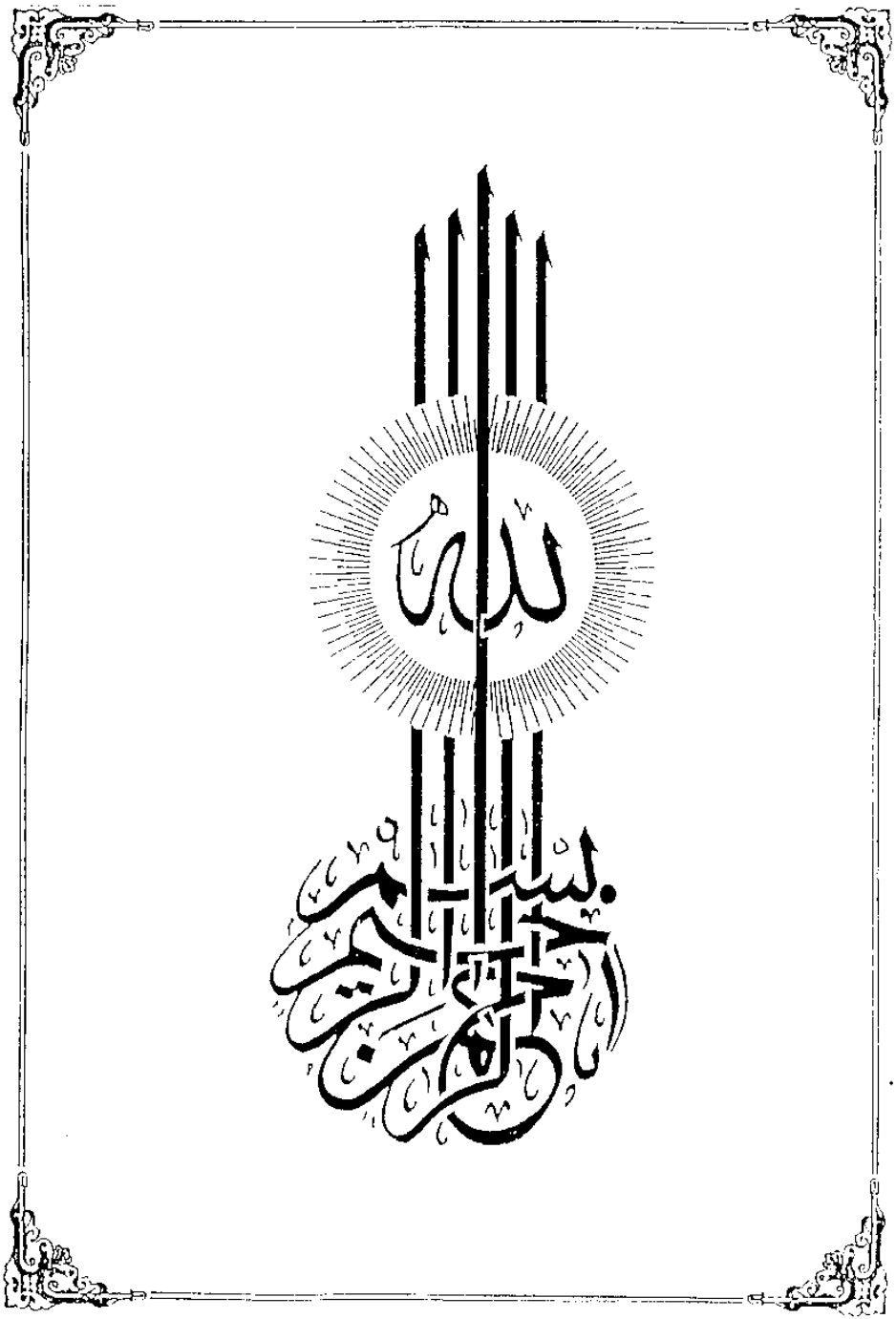
بسم الله الرحمن الرحيم

قَالَ رَبِّ اشْرَحْ لِي صَدْرِي وَيَسِّرْ لِي أَمْرِي
وَاحْلُلْ عُقْدَةً مِنْ لِسَانِي يَفْقَهُوا قَوْلِي

صدق الله العظيم

سورة طه : الايات ٢٥-٢٨



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Esophageal carcinoma is the most common tumor of the esophagus.

There are wide geographical variations in its incidence, the most common predisposing factors are alcohol and tobaco, which may account for as many 90% of cases.

Most patients present over the age of sixty years with dysphagia and weight loss.

Esophageal carcinoma, in spite of therapeutic progress, is still one of the form of cancer with the lowest survival rate at five years after treatment. The prognosis is slightly better if the diagnosis is made when the tumor is localized to the esophageal wall and without metastasis.

This condition is generally present when the neoplasm is limited to the mucosa and submucosa.

The impossibility of using either palpation or graduated compression demands a unique technical approach to radiologic examination.

To investigate the margins and walls of the esophagus one must either "turn around it" or make it turn along its longitudinal axis and see it from all useful angles.

ANATOMICAL CONSIDERATIONS

THE NORMAL ANATOMY OF THE ESOPHAGUS

The esophagus is a muscular tube, about 25 cm. (10 inch) long, connecting the pharynx to the stomach.

It begins at the neck at the caudal border of the cricoid cartilage, opposite the sixth cervical vertebra where it is continuous with the pharynx.

It descends anterior to the vertebral column through the superior and posterior parts of the mediastinum, pierces the diaphragm at the level of the tenth thoracic vertebra and ends at the cardiac orifice of the stomach at the level of the eleventh thoracic vertebra, Fig. (1), *(Gray's et al., 1989)*.

It is formed from three parts:

a. Cervical esophagus:

It extends from the cricopharyngeus muscle to the thoracic inlet.

It has the following relations:

Anteriorly, the trachea, the recurrent laryngeal nerves.

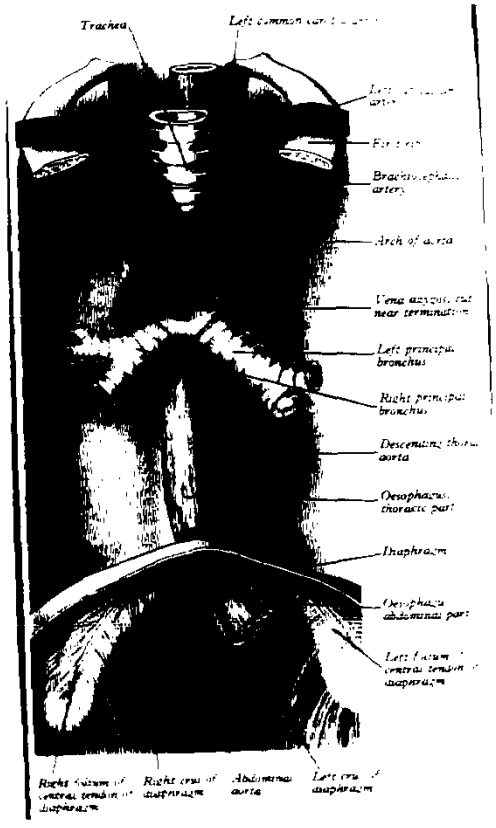

Fig 1: A dissection to expose the esophagus in the posterior mediastinum and abdomen.
(Quoted from Gray's, 1989).

Posteriorly, the vertebral column, the paravertebral layer of the deep cervical fascia.

Laterally, the corresponding common carotid artery, the posterior part of the thyroid gland, the carotid sheath and the thoracic duct.

B. The thoracic part:

It extends from the thoracic inlet to the diaphragmatic hiatus at the level of the tenth thoracic vertebra.

It has the following relations

Anteriorly, from above downwards: the trachea, the right pulmonary artery, the main bronchus, the pericardium and the diaphragm.

Posteriorly, the vertebral column, the aorta and the thoracic duct

On the left side, the terminal part of the aortic arch, the left subclavian artery, the thoracic duct, the left pleurae the left recurrent laryngeal nerve and the descending thoracic aorta.

On the right side, the right pleurae, the azygos vein and the vagus nerve.

C. The abdominal part of the esophagus

It extends from the diaphragmatic hiatus to the stomach.

It lies in the esophageal groove on the posterior surface of the left lobe of the liver. It is about 1.25 cm in length, *(Gray's et al., 1989).*

THE RADIOLOGICAL ANATOMY OF THE ESOPHAGUS

The relationship between the esophagus and the surrounding organs allows the following divisions into individual segments, Fig. (2, 3).

1. Pharynx.
2. Para-tracheal part.
3. Aortic part.
4. Bronchial part.
5. Inter-aortico-bronchial triangle.
6. Inter-bronchial part.
7. Retero-cardiac part.
8. Epiphrenic part.
9. Inter-hiatal part.
10. Abdominal part.

The tracheal part, extends from the mouth of the esophagus to the upper limit of the aortic arch.

The aortic part, is impressed by the aortic arch and this segment shows characteristic deformities.

The bronchial part of the esophagus, is impressed by the left main bronchus.