BENIGN OESOPHAGEAL OBSTRUCTION

Essay

SUBMITTED IN PARTIAL FULFILMENT

OF MASTER DEGREE IN

(GENERAL SURGERY)

By

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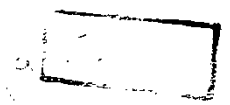

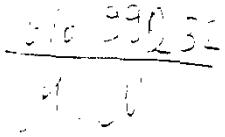

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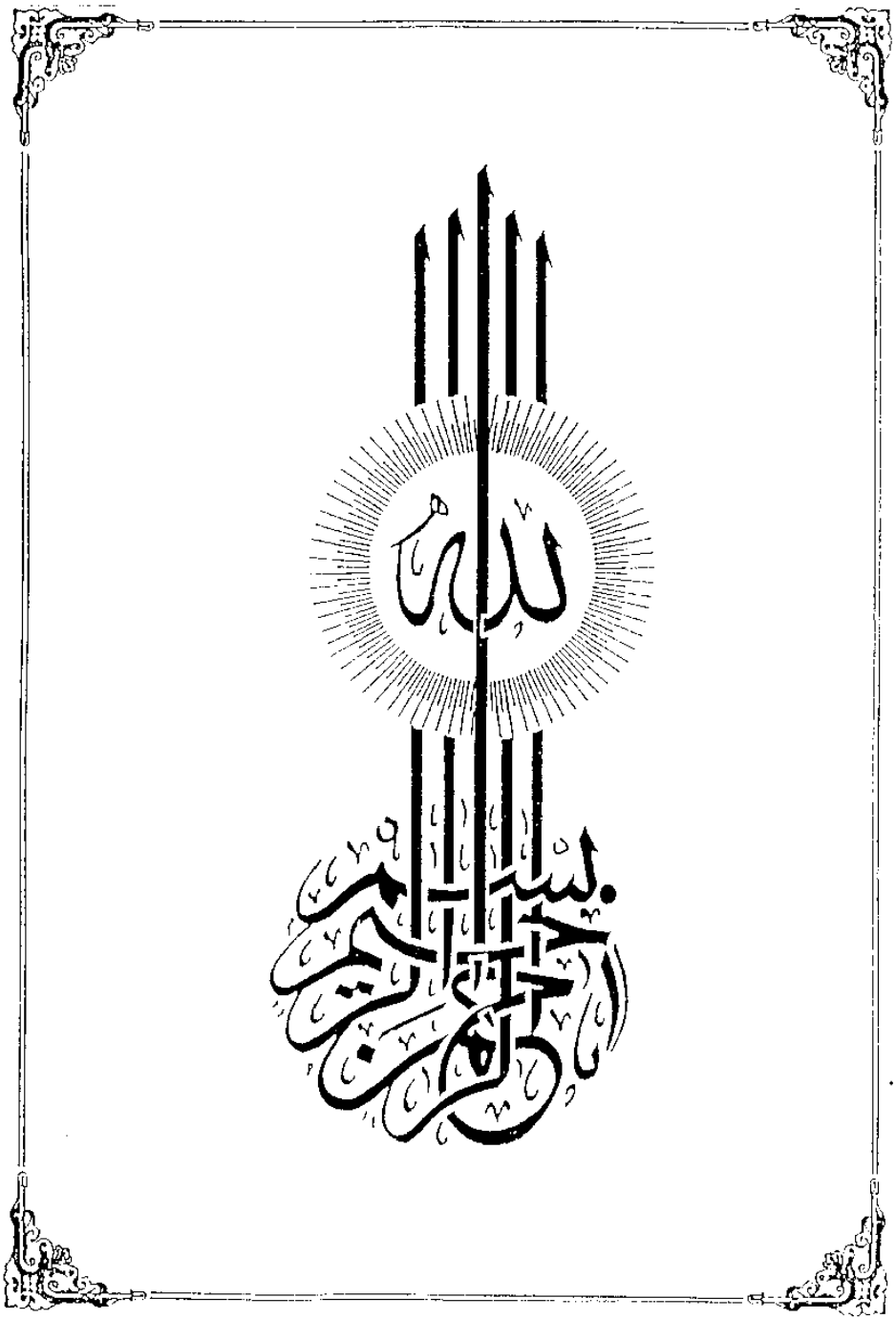
1985

ACKNOWLEDGMENT

I wish to express my sincere indebtedness and gratitude to Professor, Dr. Raoof Gendi Abo Sif, Professor of General Surgery, Faculty of Medicine, Ain Shams University, for his kindhelp and valuable suggestion to push this work in its best way.

I would also like to express my deepest thanks and most sincere gratitute to all those who through their help, cooperation, guidance and valuable advices made it possible for doing this essay.



C O N T E N T S

INTRODUCTION

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The oesophagus functions as a channel through which ingested material is conveyed from the pharynx to the stomach. Failure of the oesophagus to carry on its function in a smooth, senseless manner is a major health problem.

In this work, we try to collect the different entities in which transport of food through the oesophageal gullet may be a problem and constitute a symptom with which the patient may present. We will also review the litrature published in every entity so that a clear and recient picture is presented.

The malignant causes are excluded in this review.

The classification of benign causes of obstruction of the oesophagus, collected by Collis J.L. (1969) seems to be complete, Table (1).

TABLE (I)

CAUSES OF OESOPHAGEAL OBSTRUCTION

Congenital	Atresia Vascular abonrmalities Cysts
Acquired	Foreign bodies Pharyngeal pouch Paterson-Kelly syndrome Web Rings Idiopathic stricture Lye stricture Achalasia Corkscrew oesophagus Stricture with hiatus hernia Stricture with Barrett's ulcer Stricture with scleroderma Peptic stricture without hiatus hernia Specific inflammatory oesophagitis Post-operative stricture Extrinsic pressure Emotional dysphagia Paralytic dysphagia Simple and malignant tumours.

(By Collis, 1965)

ANATOMY

ANATOMY OF THE OESOPHAGUS

Gross Anatomy:

The oesophagus is a 10 inches (25 cm) long muscular tube which extends from the criccid cartillage, at the level of the sixth cervical vertebra, to the cardiac orific of the stomach which lies at the level of the tenth thoracic vertebrae and left seventh costal cartillage (Crimes and Way,1981). However, the length of the oesophagus varies directly with the height of the individual. The distance from the incisor teeth to the upper oesophageal sphincter usually varies from 15 to 18 cm and to the lower oesophageal sphincher usually ranges from 36 to 50 cm in males with average 40 cm, and from 32 to 41 cm in females with average 37 cm.

The diameter of the oesophagus is usually 1.5 to 2.5 cm. The lumen of the oesophagus tedns to be larger in the lower half, with the most distal portion of the oesophagus immediately above the diaphragm usually being the largest. (Brooks F.,1963).

Three anatomic areas of narrowing occur in the oesophagus: at the level of the cricoid cartilage (pharyngoesophageal sphincter), in the mid thorax from compression by the aortic arch and the left main stem bronchus, and at the level of the oesophageal hiatus of the diaphragm (Gastroesophageal sphincter) (Grimes and Way, 1981).

The oesophagus is arbiterally divided into cervical, thoracic, and abdominal parts. The cervical portion lies in front of the prevertebral fascia with slight inclination to the left of the middle line. The thoracic segment extends downwards in front of the body of the first thoracic vertebra to enter the posterior mediastinum. It lies slightly to the left of the midline behind the left bronchus which may indent it slightly in a radiograph of a barium swallow. Also it is crossed by the arch of aota on its left side and the vena azygos on its right side. The mediastinal pleura reaches the oesophagus at several sites, particularly on the right side, where low down there is a pocket of pleura between the oesophagus and the

aorta, but nowhere is the pleura attached to the oesophagus. (Last,1973).

Throughout its course the thoracic oesophagus lies in contact with the vertebral bodies. Lowdown it inclines forwards with a concavity more marked than that of the vertebral column, to pass in front of the descending thoracic aorta in contact with the pericardium. It ends by piercing the right crus of the diaphragm, one inch to the left of the mid line. At the oesophageal hiatus,fibres from the right crus of the diaphragm sweep around the oesophagus in a sling like loop.

The abdominal part of the oesophagus is very short, being about half an inch in length. The right and left gastric nerves lie on its surface. It is invested by peritoneum which passes from its anterior surface to the diaphragm, in continuity with the upper part of the lesser omentum on the right side and the upper part of greater omentum on the left. The oesophagus enters the stomach at the cardiac orifice, which

is protected by a functional more than an obvious anatomical sphincteric ring of muscle. (Ellis, 1977).

Oesophageal Sphincters:

Oesophageal sphincters exist at the pharyngoesophageal and the oesophagogastric junctions. These sphencteric areas of the tubular organ normally occlude the lumen of the oesophagus over a distance of 3 to 4 cm owing to their tonic contraction. With deglutition, the sphincters relax reflexly and they contract in sequence with the primary deglulition peristaltic wave as it passes over the sphencteric area. The function of the oesophageal sphincters is to provide a pressure barrier at each end of the oesophagus. These pressure barriers prevent the aspiration of air from the pharynx and gastric contents from the stomach into the oesophagus.

The upper oesophageal sphincter consists of the cricopharyngeus muscle, which is the lower most part of the inferior pharyngeal constrictor. The pressure profile of the upper oesophageal sphincter is 2 to 3 cm in length, with a normal resting pressure of 15 to 30 cm

water. The proximal edge of the upper oesophageal sphincter is located approximately 15 to 18 cm from the incisor teeth.

At the lower end of the oesophagus the circular and longitudinal muscle layers gradually become thicker. The slight increase in thickness of the muscular coats begins 1 to 2 cm above the diaphragmatic hiatus and extends to the cardiac end. It is this portion of the terminal oesophagus that forms the lower oesophageal sphincter. This is the portion of the terminal oesophagus that remains tonically contracted during the resting state and forms the high pressure zone separating the lumen of the oesophagus from that of the stomach. The normal position of the lower oesophageal sphincter is with in the diaphragmatic hiatus, with approximately the lower two thirds of the sphincter being situated below the diaphragm. The high pressure zone of the lower oesophageal sphincter is usually 15 to 20 cm water. Its length is about 4 cm. Its proximal end is normally located approximately 40 cm from the incisor teeth. (Hightower N.C., 1974).

Microscopic Anatomy:

The oesophageal wall is composed of an inner circular layer of muscle and an outer longitudinal layer without a surrounding serosal covering. Striated muscle fibers make a considerable contribution to the outer longitudinal coat in the upper portion of the oesophagus, whereas smooth muscle predominates in the lower portion of the oesophagus.

There is a prominent submucosa containing mucous glands, blood vessels, Meissner's plexus of nerves, and a rich network of lymphatic vessels.

The mucosal lining is characteristically made up of squamous epithelium, although ectopic islands of gastric mucosa have been identified, particularly in the proximal portions of the oesophagus. The distal 1 to 2 cm of oesophageal lumen is lined by columnar epithelium. The columnar-squamous junction lying not at the true oesophago-gastric junction but with in the lower oesophagus. (Payne and Ellis,1982).