LOWER OESOPHAGEAL SPHINCTER CHARACTERISTICS FOLLOWING PARTIAL OR 360 DEGREE FUNDOPLICATION

ESSAY

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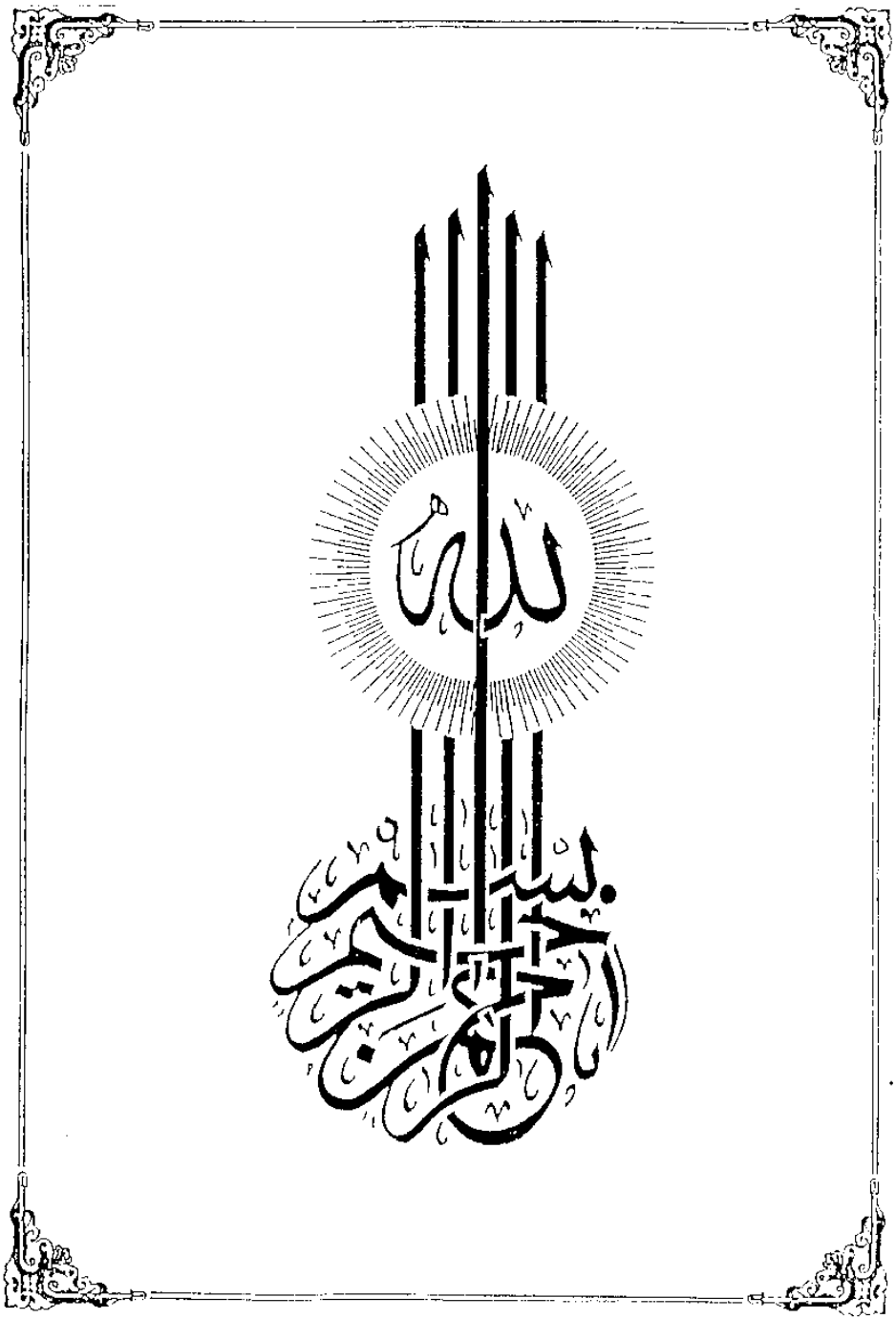

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INTRODUCTION

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Gastro-oesophageal sphincter is a functional sphincter at the gastro-oesophageal junction which represents a barrier to reflux, an acute angle of entry of the oesophagus into the stomach is said to act as a flap valve in preventing reflux. **(Lee Mc Gregor's, 1982).**

Gastro-oesophageal reflux is the main symptom and sign of deformity of gastro-oesophageal sphincter.

Gastrointestinal manifestations of collagen diseases are frequent. In progressive systemic sclerosis, oesophageal involvement is found in 60% of cases and is thus the main gastrointestinal complication. Atrophy of smooth muscle and fibrotic degeneration of the distal oesophagus results in progressive motility disorder which may cause severe reflux oesophagitis with typical consequences such as stenosis and stricture. **(Feussner H. et al., 1988).**

Gastro-oesophageal reflux is frequently associated with oesophageal atresia and tracheosophageal fistula. **(Curci MR. et al., 1988).**

Collis gastroplasty, partial and complete fundoplication are the best selecting operations for the surgical treatment of gastro-oesophageal reflux disease and its complications. **(Martin CJ. et al., 1992).**

Both fundoplication and Anglechik prosthesis provided lasting control of gastro-oesophageal reflux. **(Hill AD. et al., 1994).**

Intrathoracic Nissen total fundoplication significantly improved oesophagitis, by increased lower oesophageal sphincter pressure and increased the amplitude of oesophageal peristalsis. **(Collard JM. et al., 1991).**

Transabdominal oesophagomyotomy and partial fundoplication are the most common surgical treatment for achalasia, our treatment is an oesophagomyotomy carried into the cardia combined with a partial gastric fundoplication. **(Rosato EF. et al., 1991).**

AIM OF WORK

This essay aims to review the literature regarding the efficacy of both partial and complete fundoplication in controlling gastro-oesophageal reflux with references to other operations.

REVIEW

OF

LITERATURE

CHAPTER I

ANATOMY OF GASTRO-OESOPHAGEAL JUNCTION

The Distal Oesophagus and the proximal stomach

The oesophagus joins the stomach in the abdomen just below the diaphragm. It is defined by **Gohagan (1962)** as "The termination of a tube, the oesophagus, and the beginning of a pouch, the stomach."

The length of the abdominal oesophagus is given as being from 0.5 to 2.5 cm **(Harrington, 1955; Terracol and Sweet, 1958). Allison (1948)** has pointed out that by taking the level of the lowest connective tissue fibers attaching the oesophagus to the diaphragm as the inferior limit of the mediastinum, there is technically no abdominal oesophagus.

The abdominal oesophagus lies at the level of the 11th or 12th thoracic vertebra, perhaps lower in tall asthenic subjects and higher in short subjects **(Terracol and Sweet, 1958)**. Its relation with surrounding structures are:

Anterior: The posterior surface of the left lobe of the liver.

Posterior: The right crus of the diaphragm and aorta.

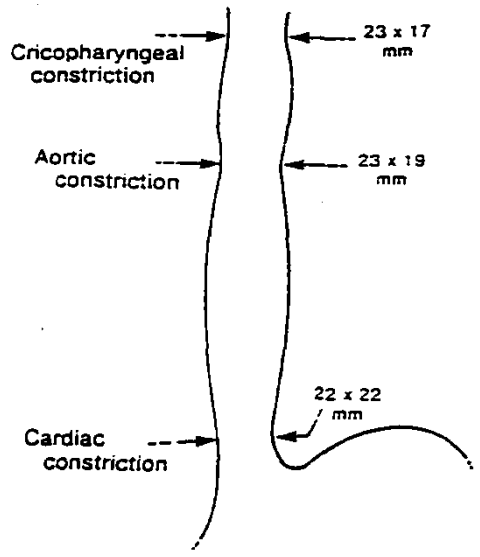
Right: The caudate (spigelian) lobe of the liver.

Left: The fundus of the stomach.

The histologic junction between oesophagus and stomach is marked by an irregular boundary between stratified squamous epithelial and simple columnar epithelium **(Oglesby, 1975)**. It is not coincident with the external junction. In the cadaver, this epithelial junction lies about 1 cm above the external gross junction **(Bombeck et al., 1966)**, above the boundary islands of columnar gastric epithelium may be present at all levels of the oesophagus **(Rector and Connerley, 1941)**.

In the living patient, the situation is even less simple. The submucosal connective tissue is so loose that the mucosa moves freely over the underlying muscularis, bulging in folds into the stomach at each swallow **(Botha, 1958)**. Even at rest, the junctional level may change. **Palmer (1953)**, using silver markers on the epithelial boundary, found that the junction was lower in the full stomach than in the empty one.

The columnar epithelium forms a mucosa unlike that of the body of the stomach. Its glands are mucus secreting without chief or parietal cells. These are the cardiac glands of the histologist. **Hayward, 1961**, who opposes the use of the ward cardia and terms derived from it as insufferably vagus, suggest junctional epithelium for this area between the typical oesophageal and typical gastric mucosae. (Fig. 1 & 2)



The three normal constriction of the esophagus. The cardiac constriction is not the narrowest of these constriction.

(Fig. 1)

The Cardiac Sphincter (Fig. 2)

As one may stand on one's head with a full stomach and not lose the contents, it follows that there is a closure of the cardiac orifice of the stomach that normally permits swallowing but not reflux. No true anatomical sphincter guards orifice, although a slight thickening of the circular musculature of the distal oesophagus has been described **(Lerche et al., 1950)**. In most cadavers, as in most living subjects, the lower oesophageal opening is normally constricted.

A variety of other structures have been held responsible for closing the cardia; the angle of His at which the oesophagus enters the stomach, the pinchcock action of the diaphragm, a plug of loose oesophageal mucosa (mucosal rosette), the phreno-oesophageal membrane, and the sling of oblique fibres of the gastric musculature. These have been evaluated by **Mann and Colleagues, 1964**, some or all may play a part in cardiac closure. The sling of oblique gastric muscle has received the greatest support.

Regardless of the mechanisms, there is normally an area, the lower of oesophageal sphincter, with a resting pressure of more than 15 cm of water. This pressure resists oesophageal reflux.