DIVERTICULAE OF GASTRO-INTESTINAL TRACT

ESSAY

Submitted in Partial Fulfilment for the Master Degree in General Surgery

By

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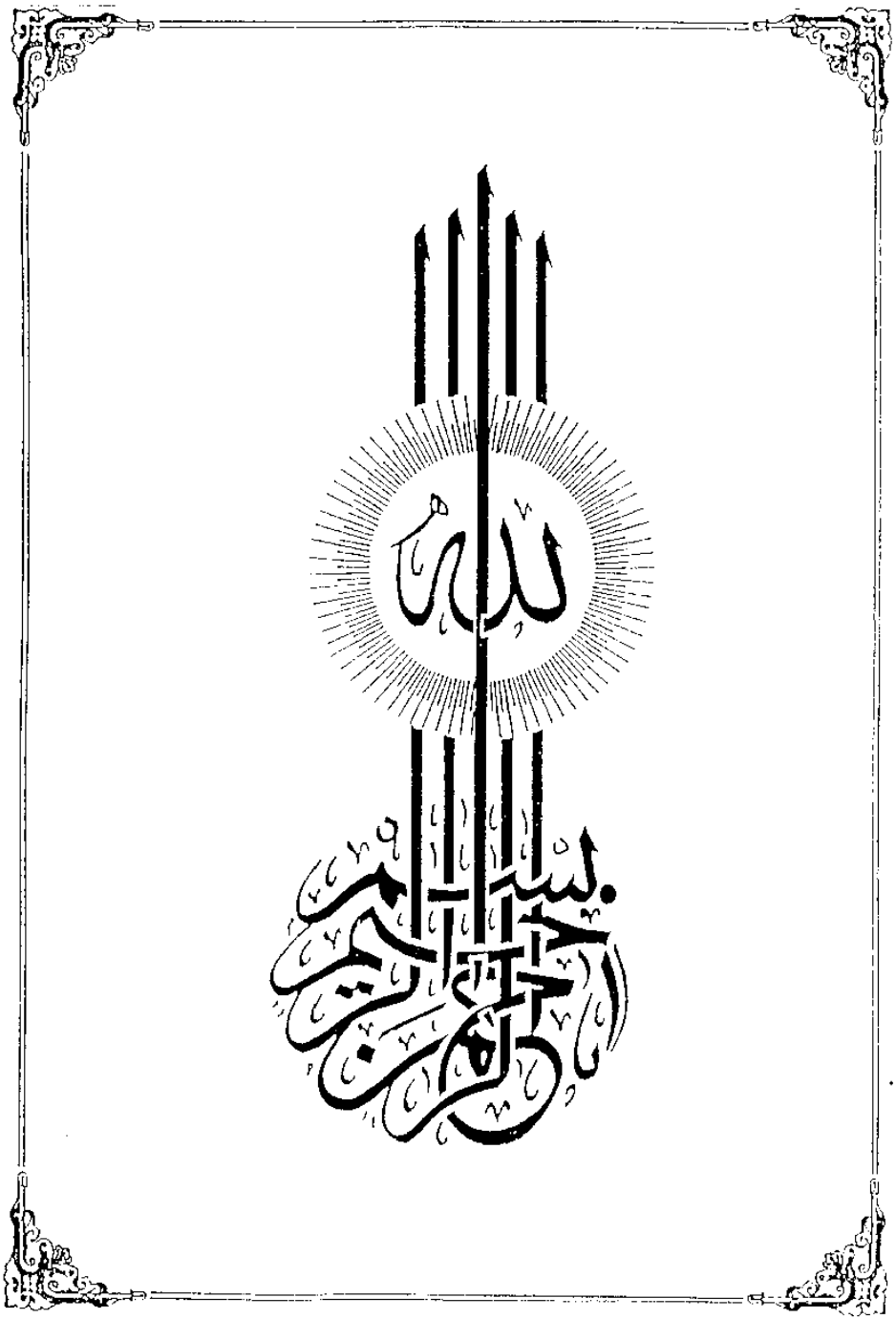
1985

A C K N O W L E D G M E N T

First and foremost, thanks to the Mighty GOD, the most beneficial and merciful.

The credit of bringing this essay to light goes to Prof. Dr. MAHMOUD NAGIB, Professor of General Surgery, Faculty of Medicine, Ain-Shams University. I wish to express my profound gratitude to him for his kind help and stimulating criticism.

Also I would like to express my gratefullness to Dr. IMAM FAKHR, Lecturer of General Surgery, Faculty of Medicine, Ain-Shams University, for his kind guidance and supervision in setting up and organising the plan of this work.



C O N T E N T S

INTRODUCTION

I N T R O D U C T I O N

With lengthening of the life span, diverticulosis has come to occupy a more important role in the sphere of clinical gastroenterology. In addition to the alimentary canal, diverticula can also occur in the trachea, the urinary bladder and the urethera.

The colon is the most common site of affection in the alimentary tract, followed in order of frequency by the duodenum,jejunum,ileum and stomach. When Meckel's diverticulum is taken in consideration,the ileum will follow the colon in frequency.

Diverticula may be true (congenital) or false (tration). They give rise, in majority of instances to few symptoms of importance although occasionally complications arise from them which are of the gravest significance.

As a possible cause of acute or chronic gastrointestinal symptoms, the condition is often overlooked by clinicians and missed by radiologists. Symptoms associated with diverticula are determined by their site, size content and secondary phenomena such as inflammation, haemorrhage or perforation.

Diverticulosis of the small bowel is much less

frequent and give rise to much less trouble than those of the colon. No typical chain of symptoms can be ascribed to this type of diverticulosis. In unexplained abdominal complaints diverticulosis must be thought of, however, and ruled out. A careful medical management seems to be the best procedure usually, although occasionally surgical intervention seems warranted. If a large section of the bowel is involved, or complications arise, surgery must be considered.

REVIEW OF LITERATURE

SURGICAL ANATOMY OF THE ESOPHAGUS

The esophagus is a fibromuscular tube 25 cm long, thin wall, and extending from the cricopharyngeal sphincter to the cardia of stomach, there are three situation of anatomical narrowing (1) at the upper ends (2) at the crossing of left main bronchus (3) as it passes through the diaphragmatic hiatus, these situation are the commonest site of diverticula (Rains and Ritche, 1981).

Muscles : the arrangement of the muscle fibers at the inlet of the esophagus has been of interest surgically because of occurrence of pharyngoesophageal diverticulum, the inferior constrictor muscles divided into 2 parts:- "Birmingham 1898" thyropharyngeus part arises from the oblique line of the thyroid cartilage, the fibers run posteriorly and ascend obliquely to the midline to be insested with the muscle of the opposite side into fibrous median raphè. This part act as propulsive part in deglutition.

Cricopharyngeus Muscle : pale in color and horizontal in direction, run continuously from side to side in annular bundles of the cricoid cartilage,and act as sphincteric part of the muscle (Posteltwhait, 1979).

There is triangular weak area is the posterior

pharyngeal wall in between the 2 parts of the inferior constrictor known as triangle of Killian or "Killian dehiscence", another one below the cricopharyngeus muscle known as "Laimer space". 2 parts of the muscle supplied from the pharyngeal branch of the vagus, the cricopharyngeus part recieves branches from the recurrent laryngeal nerve.

The esophageal musculature is composed of inner circular and outer longitudinal fibers.

The longitudinal fibers originate from the cricoesophageal tendon the two bands pass beneath the lower margin of the cricopharyngeus muscle, posterolaterally on either side is a small slit for passage of a branch of the recurrent laryngeal nerve, a branch of the inferior thyroid artery and vein "Maynihan" 1927 noted this to be weakest spast on the musculature.

Blood vessels penetrate both circular and longitudinal muscle layers at a right angle.

Arterial supply from inferior thyroid artery,esophageal branch of the aorta, branches from left gastric.

Nerve Supply : The esophagus receive sympathetic and parasympathetic from the vagus nerve. (Last, 1978).

PHYSIOLOGY OF THE ESOPHAGUS

The function of the esophagus is to transport the swallowed material from the pharynx to the stomach (Grimesorvill, 1979). The act of deglutition occurring in three stage :- The first is oral and second is pharyngeal which is voluntary the third is esophageal and is in voluntary. The upper esophageal sphincter:- it is a physiologic sphincter, in the region of cricopharyngeal muscle and characterized by a zone of high intraluminal pressure about 20-30 cm/H_{20}. Above Atmospheric, "Fyke and Code,1955", produced by tonic contraction of the muscle. Immediately after degluition a brief increase in high pressure occurs, followed by a marked decrease in pressure below the resting one as result of relevation of the muscle,after passage of the bolus of food the muscle contract and the pressure return to previous basal level. In coordination of this muscle has important role in development of diverticulum.

Motility of the Esophagus : Primary peristaltic contractions originating in the pharynx and continues into the esophagus, sweeping the bolus of food onward.

Secondary peristaltic contraction :- arises locally by distension of the esophagus by fluid or solid and

complete the transport of the substance.

Tertiary contraction :- observed frequently in the lower third in elderly individual and occur locally not peristaltic and their function is not known (Brobeck John, 1981).

Roentgenologically they may produce picture resembling multiple diverticular-like pockets, the picture referred as "Curling and the Carksrew " (Lerche, 1950).

DIVERTICULA OF THE ESOPHAGUS

Definition : is defined as a saccular outward of all or a portion of the esophageal wall from the lumen of the esophagus classification has developed an anatomic or pressured etiologic basis anatomically,diverticula of the esophagus typically occur in three.locations : (1) The pharyo-esophageal diverticula are located at the junction of the pharynx and the esophagus. (2) Midesophageal (parabronchial)diverticula are found near the bifurcation of the trachea.
(3) The epiphrenic diverticula are in the lower third, above the diaphragm (supradiaphragmitic).

Further Subdivisions include classification with reference to the number of layers of esophageal wall within diverticulum . A true diverticulum,containing all layers of the normal esophageal wall or false,consisting essentially of the mucosa lacks of muscular layer (Tucker, 1976).

A Better classification is that originally suggested by Zenker and van Ziemssen (1878), they divided these lesion into pulsion and traction types. The pulsion diverticulum is one that arises from pressure within the canal pressing outward, traction diverticulum is one in which the wall is pulled out by external traction.

Pulsion-traction variety has been added. (McGroger and others, 1932) have preferred to classify diverticula as congenital or acquired.

History : A pharyngoesophageal diverticulum was first described in "1764 by Ludlow", who observed a "preternatural" pocket" in the esophagus at autopsy. "In 1816 sir Charles Bell" published his description,entitled". A preternatural Bag, formed by the membrane of pharynx. In 1878 Zenker and vonZiemssen" collected 22 cases from the literature and added 5 of their own, Zenker's name became associated with this condition. They were the first to describe the nature of these diverticula in detail, made of formation.

According to "Granet (1933)", the first reference to an epiphrenic diverticulum was the report of a case of a case by "De Guise in 1933".

"Rokitansky,1800" first described a traction diverticulum of the esophagus and recognize the nature and mode of formation of this lesion.

Incidence : the pharyngo esophageal would account for 63.1%, parabronchial 16.5 % and epiphrenic 20.4% these incidence in 2183 collected cases "Postletwhait,1979".

Age Incidence : Pharynge esophageal diverticular are more common type and also more common in men above the 60 years, in children is extremely uncommon and in most of cases is considered congenital "Meadaw,1970" .

The epiphrenic is also rare frequent in men, the ratio being approximately 2:1 "Vinsan, 1945". Pharyngo-esophageal (Zenker) diverticulum: it is an acquired condition occurring throughout adult life,most often found in patient above 65 years. This diverticulum seems to develop as a consequence of an increase in intra luminal pressure caused by function obstruction of the level of the cricopharyngeal it is the most common recorded type. (Payne and King, 1983).

Etiology : There is no single cause for its development three factors are through to be involved in their pathogenesis: (1) anatomical weak area between the cricopharyngeus and thyropharyngeus muscles known as Killian triangl . Since the average age of the patient is about 70 years, age inducing weakening of the wall may have a role (Hellemans and others, 1981). (2) Premature contractions of the cricopharyngeus muscle "in 1979 Ellis and his associates "support this mechanism (Ardm and Kemp,1961). (3) Gastroesophageal refluxes causing sphincteric spasm but support for this concept is lacking "Ellis Heney, 1979).