ACUTE MESENTERIC ISCHEMIA

ESSAY
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Master Degree
in
General Surgery

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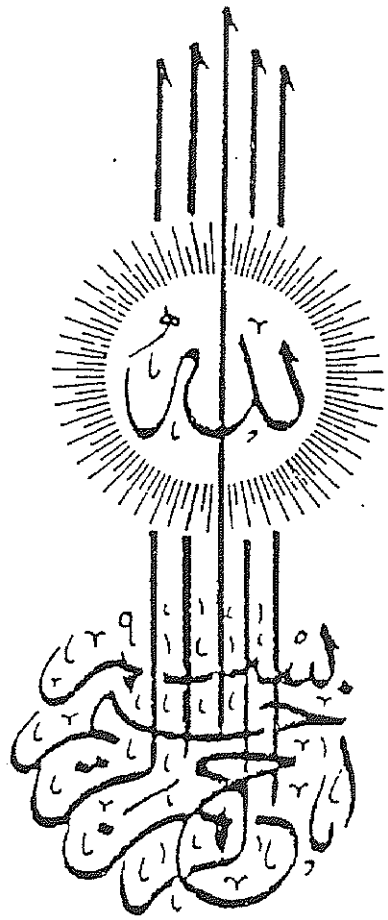

قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا
عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ.

صَدَقَ اللهُ الْعَظِيمُ
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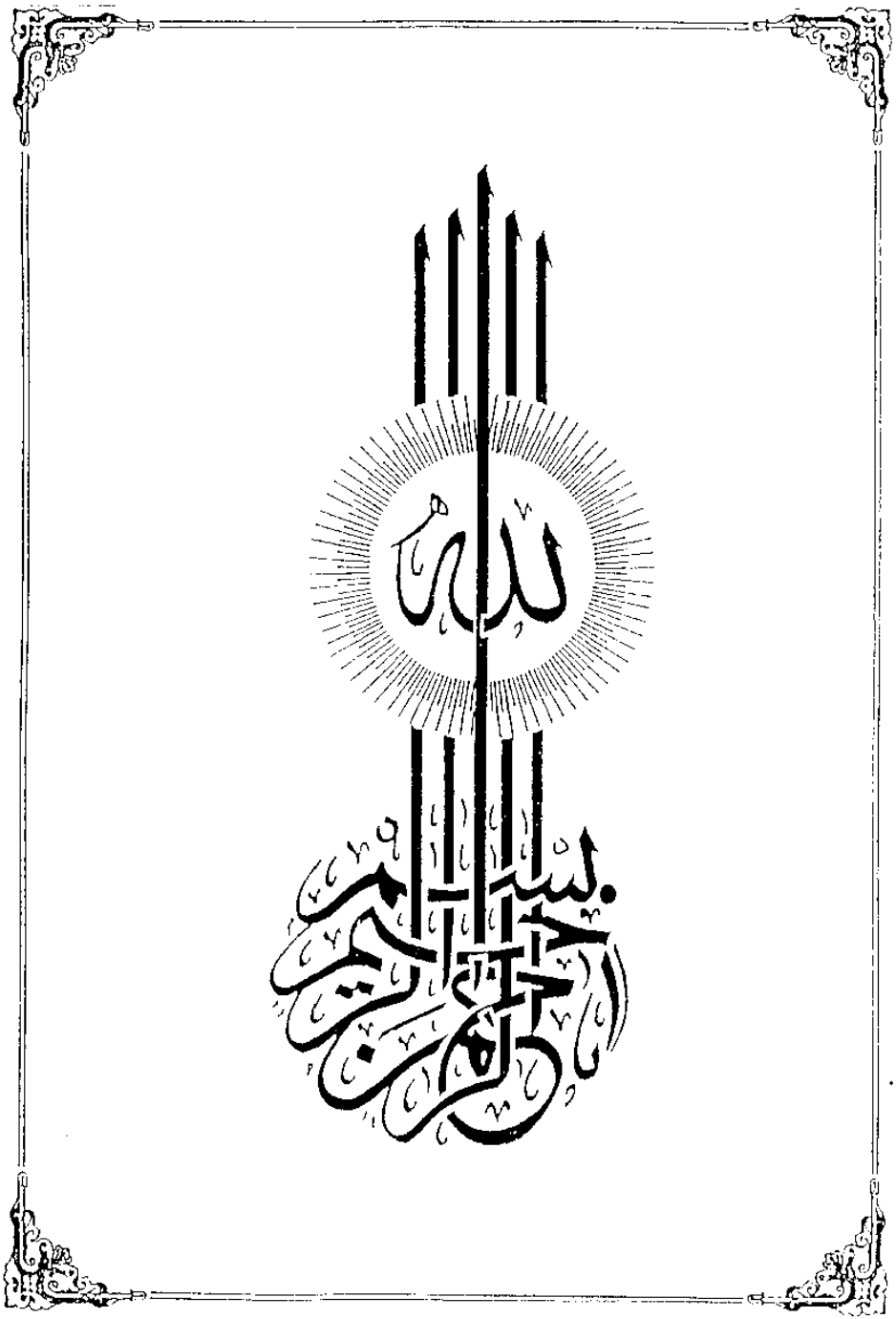

TO...

MY FAMILY

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INTRODUCTION AND AIM OF THE WORK

INTRODUCTION

Acute mesenteric ischemia is a curable disease if diagnosis and therapy are instituted before irreversible changes have occured.

Temporrary or premanent reductions of mesenteric arterial or venous flow are the primary factors in the development of gut wall ischemia.

Inadequate collateral flow, arterial spasm and a reduction in perfusion pressure may initiate or aggravate the ischemic insult to the small intestine and/or colon.

The most serious consequence is tissue infarction, which can eventuate in gangrene, perforation and peritonitis.

Failure to diagnose ischemia accurately prior to development of gangrene. The progression of bowel infarction even after the aggravating factors are corrected, the high frequency of non occlusive mesenteric ischemia, and the fact that acute mesenteric ischemia primarily affects older persons already afflicted with cardiovascular disorders together account for the high mortality rates of 50% to 70%.

Half of the cases of acute mesenteric ischemia are caused by embolic or thrombotic occlusion of the superior mesenteric artery .

Of the remaining 50% half are due to non-occlusive infarction and half result from occlusion of the inferior mesenteric artery, mesenteric venous thrombosis or arteritis.

An aggresive techniques of diagnosis and therapy is the best way for decreasing the morbidity and mortality rates of acute mesenteric ischemia.

Aim of the work:

The aim of this work is to study the various predisposing causes, clinical presentations, methods of diagnosis and management of acute mesenteric ischemia.

CHAPTER I

ANATOMY OF THE MESENTERIC CIRCULATION

* **Main arteries:**

  I) Coeliac axis.

  II) Superior mesenteric artery.

  III) Inferior mesenteric artery.

* **Anastomotic Considerations,**

* **Venous drainage.**

* **Intramural Vascular anatomy.**

ANATOMY OF THE MESENTERIC CIRCULATION

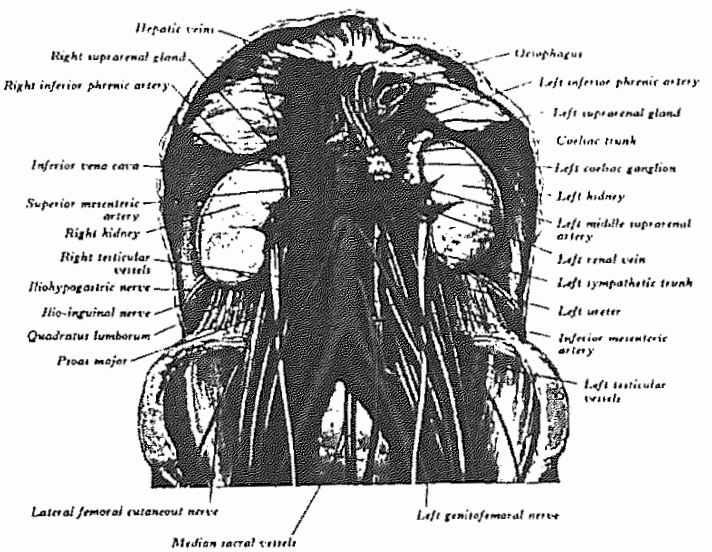
The integrity and function of alimentary tract, as an absorptive, excretory, propulsive and endocrine organ, depends on arterial supply mainly.

The basic out line of which were worked out by classical anatomical studies long time ago. To these basic studies the radiological and injection methods added a lot to our knowledge in living individuals *(Herlinger, 1972)*.

There are three components to the splanchnic arterial tree: First the main vessels arising from the aorta which are of great clinical importance, **Second** the intermediate vessels which are visible, surgically accessible vessels on which segmental Blood flow depends, **Lastly**, the micro circulation which is the final common pathway of arteries, Capillaries and venules *(Marston A., 1972)*.

I- Main Arteries: (Fig.1)

There are three main arteries which supply the alimentary tract, they are direct branches of abdominal aorta and represent the embryonic arteries of the foregut, midgut and hindgut. These arteries are of high pressure due to direct connection with descending aorta.



e abdominal aorta and its branches in the male

Fig.1: The abdominal aorta and its branches (in a male) showing blood supply of the alimentary tract.

The largest of these three arteries is the Superior Mesenteric Artery which is the artery of the midgut, its territory starts from middle of the duodenum down to the left colic flexure (splenic flexure).

The arteries of the foregut and hindgut give little Blood to the intestine and through collateral pathways, their distribution extends over into extracoelomic structures.

The arterial supply to the gut is very variable. The so called classical distribution is obeyed in only 50% of cases *(Marston A, et al., 1985).*

1- Coeliac axis: (Fig.2)

It arises from the descending abdominal aorta at the level of the upper border of the first lumbar vertebral body. It is a short axis that immediately branches into three arteries, it is surrounded from both sides by crura of the diaphragm, and median arcuate ligament arches above its upper part. The artery is crossed by sympathetic fibers and network of sympathetic plexus. The coeliac artery may be kinked at this point.

The first branch of this axis is the **Splenic artery** which is directed to the left side of the abdomen across the posterior wall, along the upper border of the body and tail of the pancreas. It enters the hilum of the spleen where it divides into 4-12 branches.