THE MANAGEMENT OF GASTROINTESTINAL HAEMORRHAGE

AN ESSAY

SUBMITTED FOR PARTIAL FULFILMENT OF THE MASTER DEGREE OF GENERAL SURGERY

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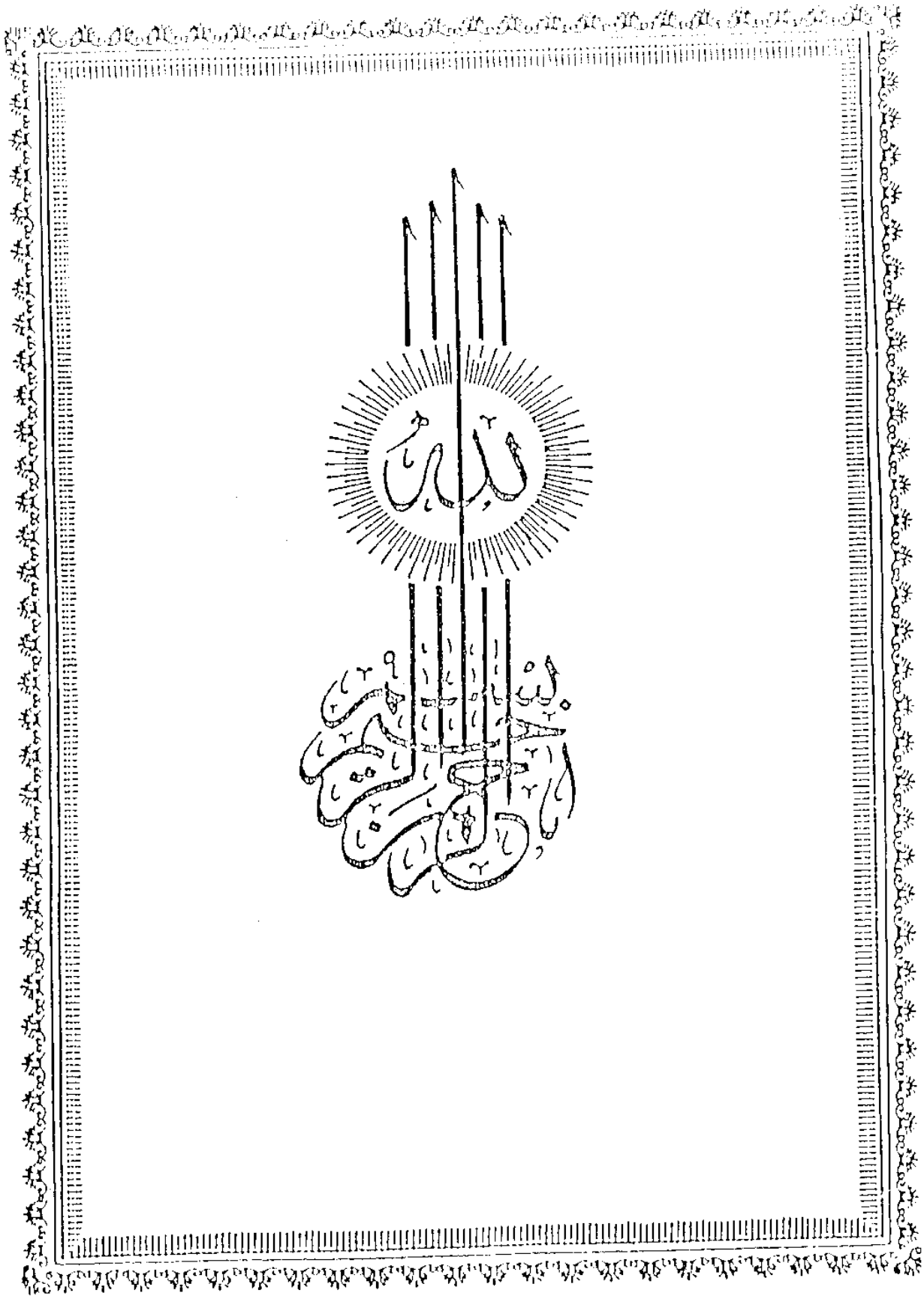

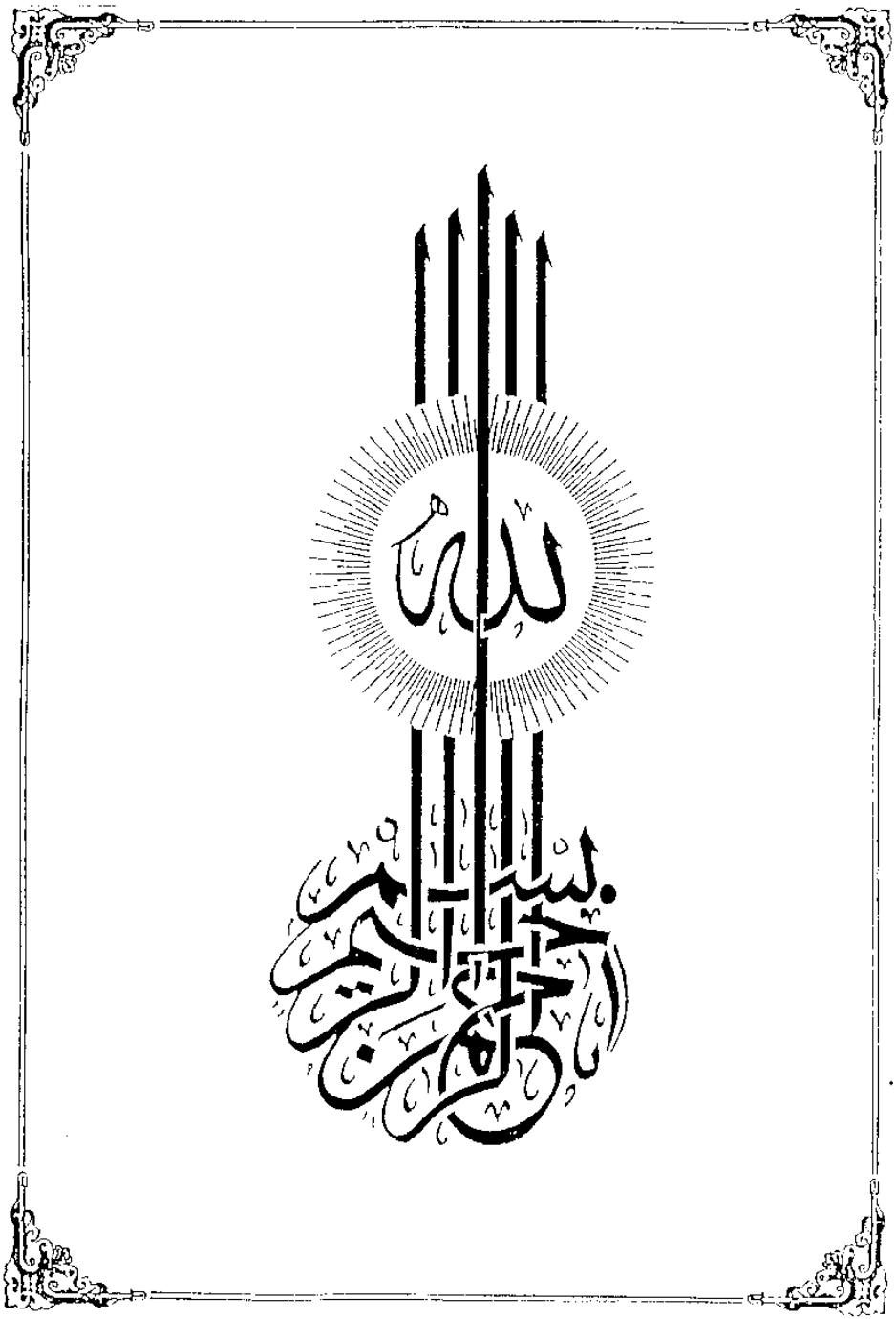

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CONTENTS

INTRODUCTION

1 - INTRODUCTION

Bleeding may be a manifestation of a variety of diseases along the entire length of the gastrointestinal tract from the oropharynx to the anus. Bleeding represents the initial symptom of gastrointestinal disease in more than one third of these patients and in 70 percent there is no history of a previous bleeding episode.(Schwartz,1989).

Bleeding from the oesophagus, stomach and first and second parts of the duodenum accounts for the majority of cases of upper gastrointestinal haemorrhage and can be diagnosed by use of a flexible endoscope. Haemorrhage beyond the range of the gastroscope has been called lower gastrointestinal haemorrhage. Clinically this definition has merit in that it is often impossible to distinguish between colonic haemorrhage and bleeding from the ileum or jejunium. (Farrands 1987). Assessment of the literature is also confused by the varying volumes of blood transfused to patients before the bleeding term "massive". Authors refer to 2 units,4 units and even 5 units tranfusions before termed massive haemarrrhage.

Haematemesis means vomiting of blood that is either fresh and unaltered or digested by gastric secretion . It is a manifestation of a bleeding site located between the oropharynx and the ligment of Treitz and may be accompanied

by simultaneous melaena. The character of the specimen depends on the site of bleeding,the rate of haemorrhage and the rate of gastric emptying. The presence of blood clots reflects massive bleeding , while caffee - ground vomitus usually indicates a slower bleeding rate with retention in the stomach and alteration of the blood to form acid hematin. Melaena is usually defined as the passage of a black , tarry stool , only 50 ml of blood is neccessary to produce this sign and following the cessation of a bleeding 1000 ml , the finding may persist for as long as 5 days.

A guaiac-positive test indicative of occult blood may persist for 3 weeks following haematemsis or melaena . In general, blood from the distal colon is red and not thoroughly mixed with the stool, where as blood from the upper gastroistestinal tract may be associated with red or currant jelly clots if the bleeding is rapid and gastrointestinal motility is increased Red or black stools may also result from the ingestion of food dye substances and iron. Melaena without haematemesis generally indicates a lesion distal to the pylorus but has been associated with bleeding varices and gastritis.

ANATOMY OF THE VASCULAR BLOOD SUPPLY OF THE GIT.

2- ANATOMY OF VASCULAR BLOOD SUPPLY OF GIT

Arteries supplying the oesophagus :-

The oesophagus is supplied with blood in its upper part by the inferior thyroid artery, by oesophageal branches of the aorta in its main extent and by branches of the gastric and inferior phrenic arteries in its lower part.

Venous drainage of the oesophagus :-

The veins of the cervical oesophagus drain into the inferior thyroid veins and then the brachiocephalic veins.

The veins of the left side of the thoracic oesophagus drain into the brachiocephalic via the left hemiazygos system. On the right side drainage is through the azygos system into the superior vena cava.

At the cardio-oesophageal junction venous drainage of the oesophagus may be into the coronary, splenic, retroperitoneal and inferior phrenic veins which connect with the portal and caval system. In portal hypertension the cardio-oesophageal junction is the site of oesophageal varices.

Arteries supplying the stomach :-

1-The left gastric artery :-

This arises from the coeliac axis and divides into an ascending branch and descending branch. The descending branch

lying between the layers of the lesser omentum is closely opposed to the Lesser curvature and send branches to the stomach.

2-The right gastric artery :-

It arises from the commen hepatic artery Also divides into a number of branches to the stomach and duodenum along the lesser curvature and anastomoses with left gastric.

3-The right gastro-epiploic artery :-

It arises from the gastero-duodenal artery which arises from the hepatic artery and passes down behind the duodenum. It is often this artery that eroded and is the source of bleeding in duodenal ulceration .(**Lawson 1986**).

4-The left gastro-epiploic artery :-

It arises from the splenic artery and anastomoses with right gastroepiploic artery along the greater curvature

5- Short gastric arteries :-

Five to seven small arteries arise from the splenic artery to the fundus.

Venous drainage of the stomach

The veins of the stomach mainly accompany the arteries of particular importance is the left gastric or coronary

which receives branches from the oesophagus . This vein must be divided specifically in operation of oesophageal varices.(Lawson 1986).

Duodenum :

Arterial blood supply :-

1- Right gastric artery .

2- Supraduodenal artery: Which arises from hepatic artery. It is small branch which is not constant.

3- Right gastro-epiploic artery .

4- Superior pancreatico-duodenal artery : which is a branch of gastro-duodenal artery.

5- Inferior pancreatico-duodenal artery : which is a branch of superior mesentric artery.

Jejunium and ileum

They are supplied by jejunal and ileal branches of the superior mesentric artery which arise from the convex left side of the artery . They are 12-15 in number . They run between the two layers of the mesentry . Each artery divided into 2 branch wkich anastomose with the neighbouring one to from a series of arterial arcades and the process may be repeated. In upper quarter of mesentry one series of arc-ades is found .In the second quarter two series of arcades are found Tn the third quarter three series are found. In the lower quarter four series of arcades are present the terminal branches gives striaght end arteries.

Arterial blood supply of the large bowel :-

Arterial blood is supplied by the superior and inferior mesentric arteries. The internal iliac supplies the important middle and inferior rectal arteries to the rectum.

1-The superior mesentric artery :-

Which supplies the right and transverse colon .It is usually described as giving of three colic branches middle, right and ileocolic arteries 23.8 %. In about the same percentage of cases the ileocolic artery is constant but the right colic arise from it 22.7 % or from middle colic 21.5 % .(Cooke 1986).

2-The inferior mesentric artery :-

It arise from the aorta 3.8 cm proximal to its bifuration and supplies the colon from splenic flexure to the rectum. It is almost never absent but rarely its origin may be higher behind the duodenum or pancrease. It soon gives off the large left colic artery which passes up and to the left at acute angle (not transversely) being crossed by inferior mesentric vein and the left ureter being deep to this transit. The vessel bifurcates near the splenic flexure where one of the branches passes to the right in the transverse mesocolon to anastomose with a similar branch of middle colic artery to form the arch of Riolan.(Cooke 1986). The inferior mesentric artery supplies several arteries

to the pelvic colon and end as the superior rectal artery.

Marginal artery :- is the paracolic vessel of anastomosis between colic arteries from which arise the terminal arteries to the colon.

3- The middle rectal vessels :-

(there may be more than one on each side) are important contributions to blood supply of the rectum and pelvic colon. They run in the lateral ligments of the rectum.

4-Inferior rectal vessel :-

It is a branch of internal pudendal artery which is a branch of internal iliac.

Portal Venous System :-

The portal system begins as the venous capillaries of the GIT and ends as the venous sinusoids in the liver. This system delivers nutrient-rich blood to the liver. The portal vien is formed in front of the inferior vena cava and behind the neck of pancreas by the union of the superior mesentric vein and splenic vien this union occurs at the level of the 2 nd lumbar vertebra. The vessel is 5-8 cm long and pass up and to the right in the lesser omentum to enter the hilum of the liver where it immediately divides into its right and left branches. The main tributaries are the coronary(left gastric), pyloric, cystic and pancreaticoduodenal veins. The portal vein may lie anterior to the pancrease and duodenum.

CAUSES OF GIT HAEMORRHAGE