AIN SHAMS UNIVERSITY
FACULTY OF MEDICINE
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RECENT TRENDS IN MANAGEMENT OF ACUTE VARICEAL BLEEDING

ESSAY

Submitted In Partial Fulfilment For
MASTER DEGREE OF

[GENERAL SURGERY]

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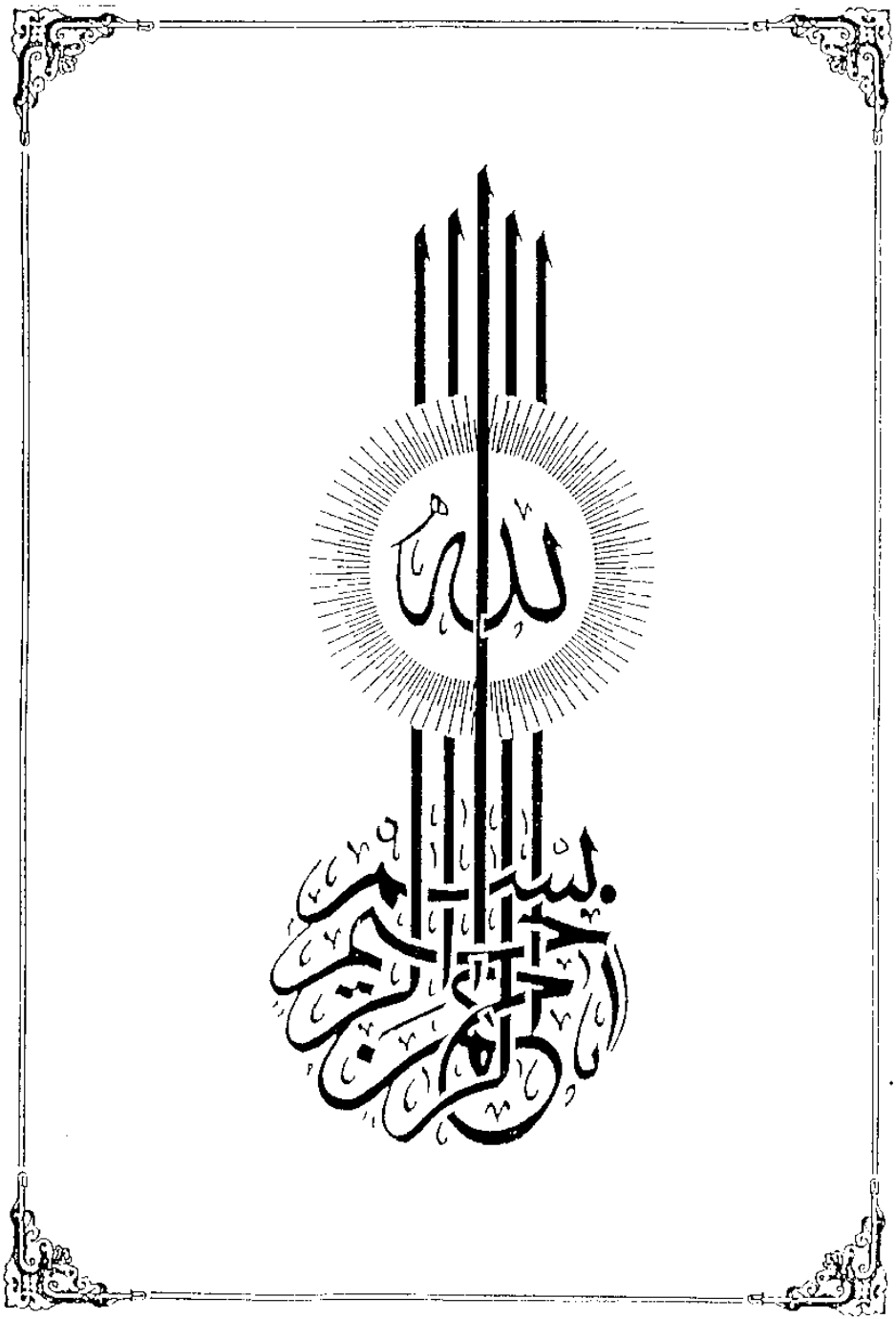
1989

ACKNOWLEDGEMENTS

I wish to express my most respectful appreciation to Professor Dr. **MOHAMED SAMEH ZAKI**, professor of General Surgery, for his keen supervision, kindness and valuable criticism during this work till it was accomplished.

I am deeply indebted to Dr. **AHMED MOHAMED LOTFY**, Lecturer of General Surgery, for his great assistance, valuable advice, and continuous encouragement at all times.



CONTENTS

INTRODUCTION

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Finding a solution for the big problem of acute variceal haemorrhage due to portal hypertension remains a difficult unrelenting question.

Different factors play a role in determining the method of treatment of such patients, the most important factor is the hepatic reserve of the patient.

In trying to solve this problem many treatment modalities had been widely evaluated all over the world ranging from mere conservation to most aggressive surgical procedures. Conservative methods had been associated with high incidence of rebleeding and accordingly high mortality rate. Surigcal procedures entail either a direct attack by interruption of the portal flow to the varices in the lower oesophagus or portal flow diversion towards the systemic circulation lowering the portal pressure and thus controlling variceal bleeding. Sclerotherapy is a simple and relatively safe method that can be used in all patients with variceal bleeding either as an emergency method to stop the attack, till a more definitive treatment can be done after proper preparation of the patient, or as a definitive line of treatment. It has recently occupied

the center of interest in the treatment of acute variceal bleeding.

The aim of this essay is to study the different lines of treatment of acute variceal bleeding and by reviewing the literature attempting to answer the question of what to do for such patients?.

ANATOMY OF THE PORTAL VENOUS SYSTEM AND OF OESOPHAGEAL VARICES

ANATOMY OF THE PORTAL VENOUS SYSTEM

The portal venous system includes all veins collecting blood from the abdominal part of the digestive tube (with the exception of the lower part of the anal canal) and from the spleen, pancreas, and gall bladder. From these viscera blood is conveyed into the liver by the portal vein. In the liver this vein ramifies like an artery and ends in capillary like vessels termed sinusoids, from which blood is conveyed to the inferior vena cava by the hepatic veins. The blood of the portal system therefore passes through two sets of "exchange" vessels:

a) The capillaries of the digestive tube, spleen, pancreas, and gall bladder.
b) The sinusoids of the liver (Gray's, 1981).

In the adult the portal vein and its tributaries have no valves, in the foetus and for a short time after birth valves can be demonstrated in its tributaries; as a rule they atrophy and disappear, but some may presist in a degenerated form (Gray's, 1981).

The portal vein:

It is about 8 cm long, and starts at the level of the

second lumbar vertebra from the junction of the superior mesentric and sptenic veins, in front of the inferior vena cava and behind the neck of the pancreas. The vein inclines slightly to the right as it passes upwards behind the superior part of the duodenum, the bile duct, and the gastroduodenal artery, and infront of the inferior vena cava; it then ascends in the right border of the lesser omentum infront of the epiploic foramen to reach the right end of the porta hepatis, where it divides into right and left stems, which accompany the corresponding branches of the hepatic artery into the substance of the liver. In the lesser omentum it is behind the bile duct and the hepatic artery the former to the right of the latter; it is surrounded by the hepatic plexus of nerves, and is accompanied by numerous lymph vessels and some lymph nodes (Gray's, 1981).

The right branch of the portal vein enters the right lobe of the liver, but before doing so generally it receives the cystic vein. The left branch of the portal vein is longer but of smaller calibre than the right branch, it gives branches to the quadrate and caudate lobes and then enters the left lobe of the liver. As it does so, it is joined infront by the para-umbilical veins and by a fibrous cord, the ligamentum teres, the remnant of the obliterated

left umbilical vein. It is connected to the inferior vena cava by a second fibrous cord, the ligamentum venosum, a vestigue of the obliterated ductus venosus, and ascends in a fissure in the posterior aspect of the liver, the small extrahepatic portion of the left branch, from which the vessels to the quadrate and left lobes arise, is a persistant part of the left umbilical vein (Gray's, 1981).

The Tributaries of The Portal vein:

The portal vein receives the following tributaries:

1. **The splenic vein:**

It is of large size but not tortuous like the artery, commences from five or six tributaries issuing from the spleen. These unite into a single vessel, which traverses the lienorenal ligament with the splenic artery and the tail of the pancreas. It then ascends to the right across the posterior abdominal wall, lying at a lower level than the splenic artery and immediately posterior to the body of the pancreas, (which it grooves), receiving numeous short tributaries from the gland. In its course it crosses anterior to the left kidney and its hilar structures (or the lower pole of the left supra renal gland , and it is

separated from the left sympathetic trunk and crus of diaphragm by the left renal vessels, and from the abdominal aorta by the superior mesenteric artery and the left renal vein. It ends behind the neck of pancreas where it unites at a right angle with superior mesenteric vein to form the portal vein (Gray's, 1981).

Tributaries of the splenic vein:

The splenic vein drains the short gastric, left gastro-epiploic, the pancreatic, and the inferior mesenteric veins.

2. Superior mesenteric vein:

It collects blood from the small intestine, caecum, and the ascending and transverse portions of the colon. It begins in the right iliac fossa by the union of tributaries from the terminal ileum, caecum and vermiform appendix. It ascends in the mesentery on the right of the superior mesenteric artery; in its upward course it passes in front of the right ureter, inferior vena cava, horizontal part of the duodenum, and the uncinate process of the pancreas. Behind the neck of the pancreas it joins the splenic vein to form the portal vein.

Tributaries:

The superior mesenteric vein's tributaries correspond to the branches of the superior mesenteric artery, viz. jejunal, ileal, ileocolic, right colic, and middle colic veins, it is also joined by the right gastroepiploic and the pancreaticoduodenal veins.

3. **The left gastric vein:**

The left gastric vein derives tributaries from both surfaces of the stomach; it runs upwards along the lesser curvature of the stomach in the lesser omentum, to the oesophageal opening, where it receives some oesophageal veins. It then runs backwards and passes downwards and to the right behind the omental bursa (lesser sac), and ends in the portal vein at the upper border of the superior part of the duodenum.

4. **The right gastric vein:**

It is of small size, runs from left to right along the pyloric portion of the lesser curvature of the stomach in the lesser omentum, and ends in the portal vein. It is joined by the prepyloric vein which ascends in front

of the pylorus and usually marks the site of the pyloric opening.

5. The para-umbilical veins:

These are veins which establish an anastomosis between the veins of the anterior abdominal wall and the portal vein, extend along the ligamentum teres of the liver and the median umbilical ligament. The best marked of these small veins is one which begins at the umbilicus and runs backwards and upwards in, or on the surface of, the ligamentum teres in the falciform ligament, to end in the left branch of the portal vein.

6. The cystic vein:

Usually the gall bladder venous blood is drained by the hepatic veins, but only rarely a single or double cystic veins drain directly into the right branch of the portal vein (Gray's, 1981).

ANASTOMOSES BETWEEN THE PORTAL AND SYSTEMIC CIRCULATIONS

In cases of obstruction of the portal vein, the anastomoses between the portal and systemic circulations, which

may collectively offer an effective collateral circulation, are as follows:

1. In the abdominal part of the oesophagus tributaries of the left gastric vein (portal drainage) anastomose with the oesophageal tributaries of the azygos and accessory hemiazygos (systemic) veins. Enlargement of these anastomoses results in the appearance of oesophageal varices with the risk of haematemesis.

2. In the wall of the anal canal the opening up of communications between the inferior and middle rectal (systemic) and superior rectal (portal) veins may result in varicosities of these venous connections.

3. At the umbilicus the veins running with the ligamentum teres of the liver to the left branch of the portal vein anastomose with the epigastric veins (systemic); enlargement of these connections may produce a varicose condition of veins radiating from the umbilicus, known clinically as the Caput Medusae.

4. Retroperitoneal veins of the abdominal wall communicate with the venous radicals of the colon and bare area of the liver.