SURGICAL MANAGEMENT OF ASCITES

ESSAY

Submitted for Partial Fulfilment of
M.S. Degree in General Surgery

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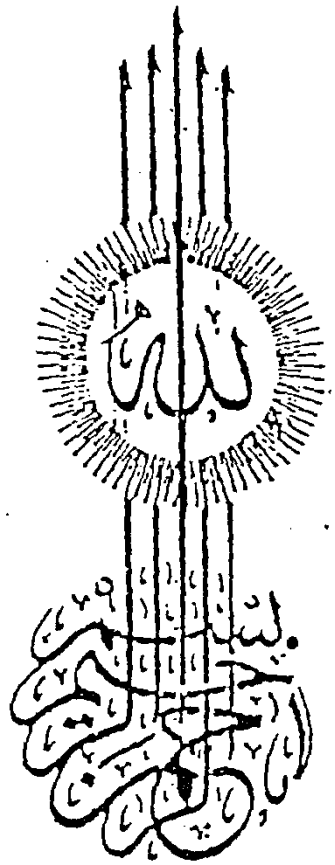
1986



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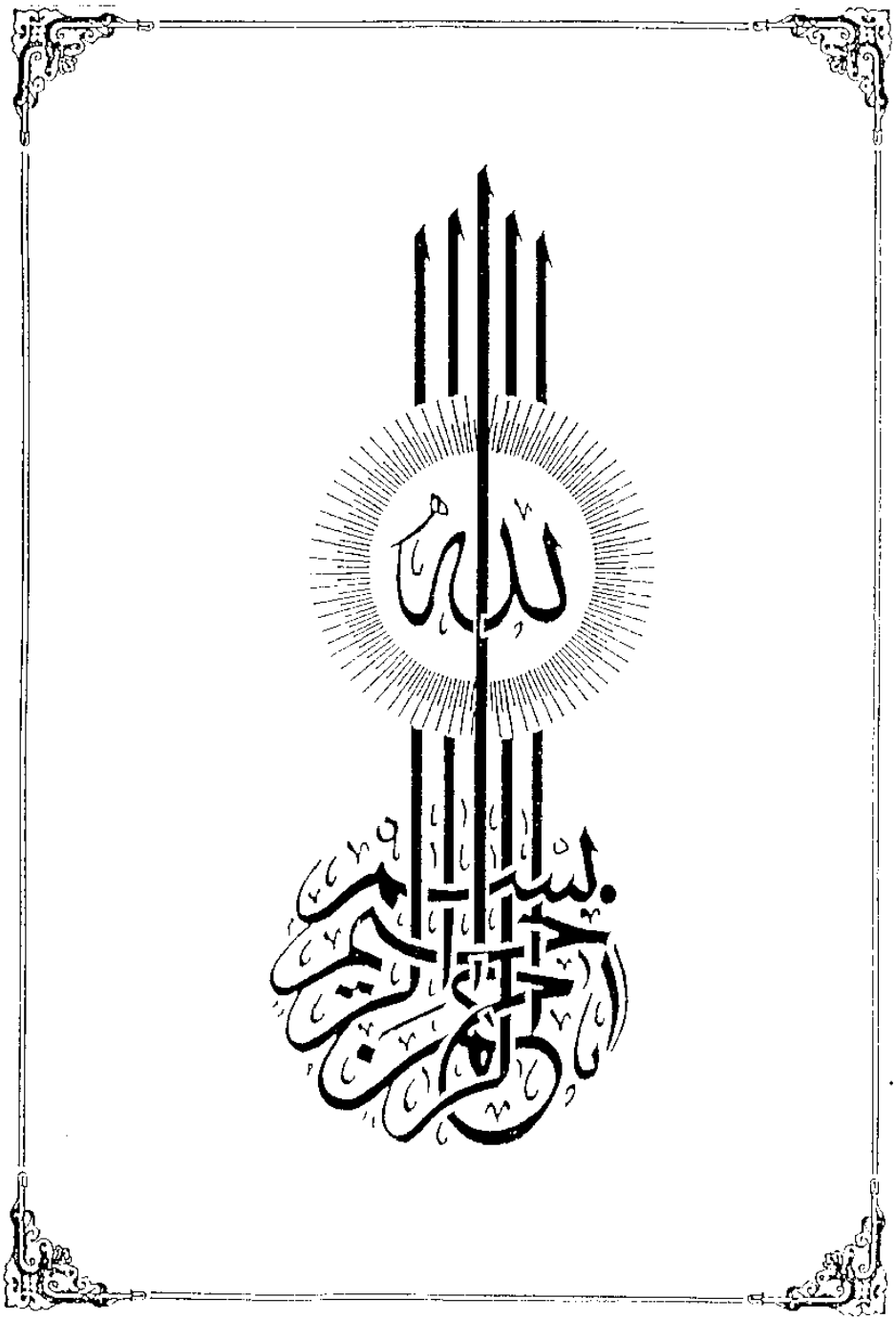

ACKNOWLEDGEMENT

I am greatly indepted to ***Professor ALI LASHINE,*** *Professor of General Surgery, Ain Shams University, for his kind guidance, great help and continuous support throught the whole work.*

I would like to express my deep gratitude to ***Dr. IBRAHEM ABD EL NABI,*** *Lecturer of General Surgery, Ain Shams University, for his supervision and useful criticism which pushed this work to its final status.*

I would like to record my sincere gratitude to my senior staff and colleagues.

Samy El Dorghamy

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This work aims at study of the aetiological factors that participate in the occurrance of ascites, together with the different methods of diagnosis and the various lines of treatment.

INTRODUCTION

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Ascites at least in its advanced stage, is such a conspicuous pathologic phenomenon that it could not escape the notice even of the untrained eye,.

So, we learn without surprise that most of the early medical writers had something to record on this subject.

One of the aphorisms attributed to Hippocrates (born about 460 B.C.) states, "when the liver is full of fluid and this overflows into the peritoneal cavity so that the belly becomes full of water, death follows". In suggesting that ascites arises by leakage of fluid from the liver he was taking sides in a dispute which still continues Erasistratos of Alexandria, who lived in the third century before Christ (Dawson, 1960) postulated that ascites was due to the stone-like hardness of the liver, commenting that "the blood is prevented from going forward into the liver owing to the narrowness of the passages (Summerskill,1975). Celsus (born about 20 B.C.) (Dawson,1960) detailed

the methods of paracentesis most likely to succeed (Sunmerskill, 1975). The term "ascites" indicates an accumulation of fluid in the peritoneal cavity, but it is usually applied to accumulation of serous fluid (Nelson, 1975).

The term ascites, which from its Greek derivation refers to a bag of fluid, is used in medical terminology to refer to any collection of fluid whithin the Peritoneal cavity (Mc Dermott, 1974). Most patients with ascites respond favourably when treated with appropriate diet, salt restriction, and diuretics.

Some, however, require ever-increasing doses of diuretics and eventually become totally unresponsive to medical management (Bernhoft, 1982). Approximately 95% of cirrhotic patients with ascites will respond to diuretic therapy (Botero, 1982). There is a long history throughout this century of surgical efforts to divert the ascitic fluid from the peritoneal cavity back into the general circulation bya number of ingenious devices and approaches and historical review of these efforts was presented by Radvin (1957).

Occasional operations achieved transitory improvement but in general, these efforts met with lack of success and were associated with a high mortality. Recognition of the association of portal hypertension with intrahepatic portal bed block from cirrhosis and the introduction of shunt surgery for the reduction of portal hypertension raised the hope that surgical alleviation of the elevated portal pressure would also lead to an improvement in the distressing and inexorable accumulation of peritoneal fluid. In fact, the first successful experimental portocaval shunt in animals by Ech in 1877 was undertaken with the expectation that it might be applicable to the treatment of ascites in man (McDermott, 1977).

Early attempts at reinfusion of ascitic fluid into the systemic circulation using Holter Valve shunts were unsuccessful. In 1974, LeVeen et al. described a shunt with a pressure sensitive one-way valve that returned ascitic fluid into the vena cava (LeVeen, 1974).

The present study tries to revise the evolution and the present status of the surgical management of ascites with the potential hazards, limitations and indications of the different techniques.

ANATOMY OF THE PERITONEUM

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The peritoneum is a fibrous membrane (i.e. a skin), whose surface is smoothed by a single layer of flat cells, a pavement (Last, 1984). The totl surface area of peritoneum approximates to that of the skin, i.e. about 1.7 square meter in the adult (McMinn, 1974).

Peritoneum lines the walls of the abdominal cavity. This is the parietal peritoneum, it clothes the anterior and posterior abdominal walls, the under surface of the diaphragm and the cavity of the pelvis. The visceral peritoneum is the continuation of the parietal peritoneum, which leaves the posterior wall of the abdominal cavity to invest certain viscera therein. The intraperitoneal space between them is only potential, not actual, and it contains in all merely a few millilitres of tissue fluid which moistens and lubricates the serous surfaces (Last, 1984). This is the general peritoneal cavity (Coelom-greater sac).

The peritoneal cavity is usually described as a close one, but this is not strictly true in the female, as the uterine tubes open into the pelvic part of the cavity (Hollinshead, 1974).

The lesser sac (omental bursa) is a smaller cavity which lies behind the stomach, it opens as a diverticulum from the greater sac, through a narrow window called the opening of the lesser sac, epiploic foramen or foramen of Winslow (Last, 1984).

The main peritoneal cavity is divided into compartements by some of the lines of peritoneal reflexion.

The principle compartements are designated: supracolic, infracolic and pelvic, and the first two are subdivided as follows:

Supracolic: right subdiaphragmatic (subphrenic)
left subdiaphragmatic (subphrenic)
right subhepatic (hepatorenal or Morison's pouch)
left subhepatic (lesser sac).

Infracolic: right infracolic
left infracolic

The supracolic compartement is all that part of the peritoneal or abdominal cavity above the level of attachement of the transverse mesocolon. The right subhepatic

area is of great importance, for when the body is recumbent, this area is the lowest level of the abdominal cavity (with the exception only of the pelvic part). Fluid will thus tend to gravitate into it, and this is especially likely to occur after operations near that area, e.g. on the kidney, gall bladder or biliary tract (McMinn, 1974).

The infracolic compartement is all that part of the peritoneal cavity below the level of attachement of the transverse mesocolon.

The mesentry of the small intestine is 20 feet long (6 m) at its intestinal border, it is but 6 inches (15 cm) long at its attachement to the posterior abdominal wall.

The infracolic compartement is divided into right and left parts by the oblique attachement to the posterior abdominal wall of the mesentry of the small intestine (Last, 1984). The falciform ligament is sickle-shaped peritoneal fold, connects the liver with the anterior abdominal wall slightly to the right of the median plane. It has 3 borders, one border is attached to the anterior abdominal wall and the under surface of the diaphragm,