PREVALENCE OF PERITONEAL TUBERCULOSIS AMONG HEPATIC ASCITIC PATIENTS

THESIS
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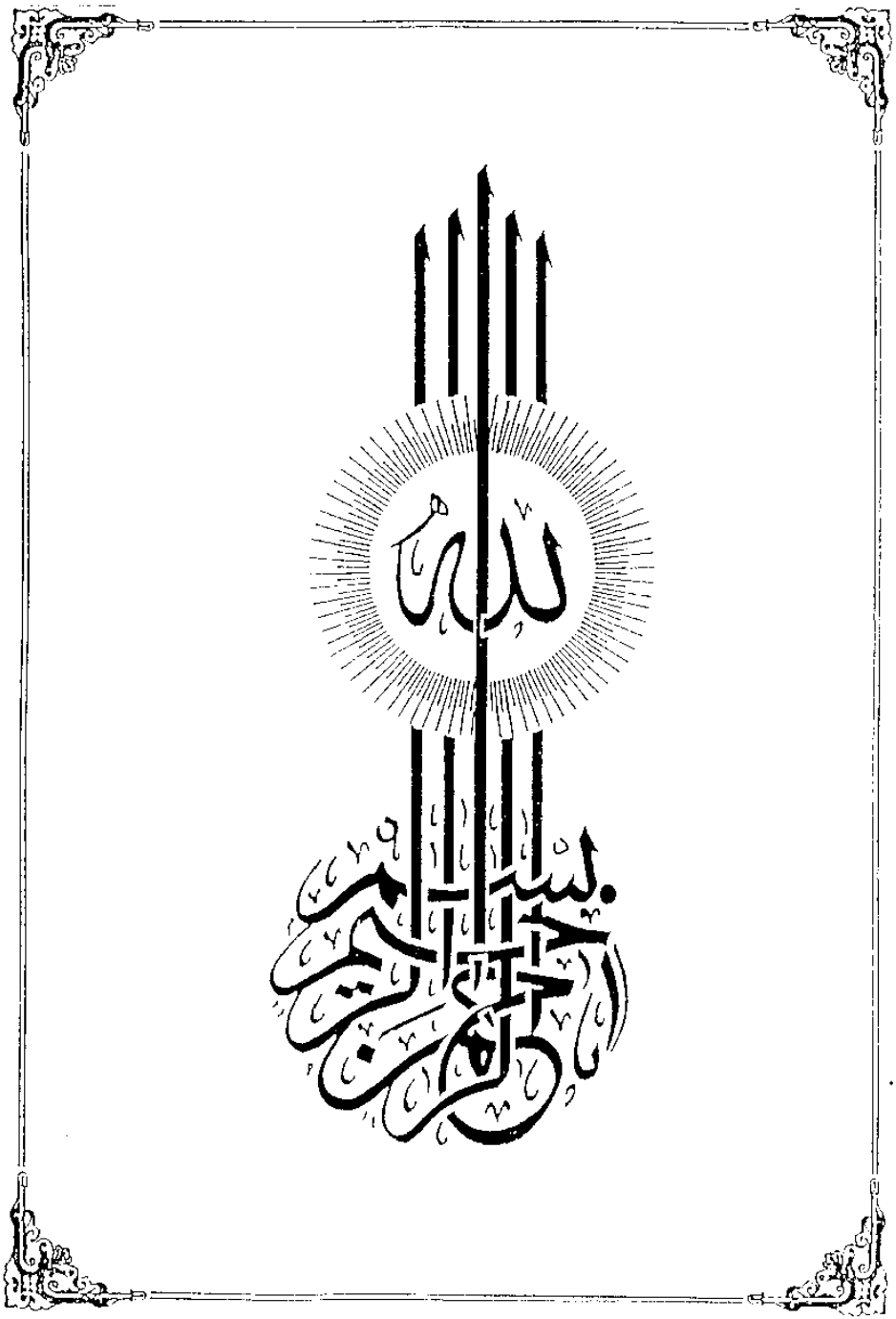
وَقُل رَّبِّ زِدْنِي عِلْمًا



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DEDICATED

TO THE MEMORY

OF MY AUNT

LATE

Mrs. FATTHYA EL BAATHY

CONTENTS

INTRODUCTION AND AIM OF WORK

Ascites is one of the late sequalae of chronic liver diseases. In most of the cases, the clinical examination is sufficient to diagnose its aetiology and usually laboratory investigations confirm this diagnosis. However, in some cases the serum albumin is not critically lowered to explain the pathogenesis of ascites and in other cases the ascitic fluid is an exudate and not a transudate as is expected. An explanation for the cause of ascites in these cases is needed.

It is well known that tuberculous ascites may present in a variety of ways; ranging from an acute abdomen to an insidiously developing unexplained ascites resembling that due to cirrhosis. Accordingly, its presence should be suspected in all patients with ascites even in cirrhotic patients. Also, these cases may respond in an early phase of treatment to the conventional dietetic and diuretic regimen for hepatic ascites, but a residual fluid remains resistant to treatment; which might be due to another superimposed etiology e.g. Tuberculosis. We call it refractory ascites.

How much the prevalence of such tuberculous peritoneal infection in patients suffering from hepatic ascites is the aim of our work; when laparoscopy will be performed as it is the surest mean for obtaining a correct diagnosis;both by the naked eye appearance and by being confirmed by histopathological examination of the obtained biopsies.

REVIEW OF LITERATURE

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Anatomical and Physiological considerations of the Peritoneum :

The peritoneum is the largest serous membrane in the body and consists, in the male, of a closed sac; a part of which lines the abdominal wall, while the remainder is reflected over the contained viscera. In the female, the free ends of the uterine tubes open into the peritoneal cavity (Mahran et al.,1976).Histologically, it consists of a single layer of flattened mesothelial cells which covers a layer of loose connective tissue (Last,1972). It has been claimed that the mesothlial cells have a phagocytic capacity and that they may leave the surface to form free macrophages. They may also transform into fibroblasts; fusion between layers of fibroblasts of mesothelial origin may lead to macroscopic adhesions between the peritoneal surface of adjacent structures.(Warwick and Williams, 1973).

Last (1972) described the parietal peritoneum as the part which lines the walls of the abdominal cavity. It clothes the anterior and posterior abdominal walls, the undersurface of the diaphragm and the cavity of the pelvis. It is attached to these walls by extraperitoneal areolar tissue. The visceral peritoneum is the continuation of the parietal peritoneum which leaves the posterior wall of the abdominal cavity to invest certain viscera.

The peritoneal cavity is divided into two main parts; the greater sac; which is the part of the cavity seen as we incise the parietal peritoneum of the anterior abdominal wall, and the lesser sac; which is a large peritoneal recess behind the stomack. The opening through which the two sacs communicate is called the epiploic foramen, which lies between the first part of the duodenum and the under surface of the liver (Mahran et al., 1976).

Woodburne (1978) defined the mesentry as the peritoneal reflection from body wall to the small intestine, and the mesocolon as a similar attachment of the large intestine. Many peritoneal folds or sheets are designated as ligaments of the peritoneum e.g. the falciform ligament which is a peritoneal fold connecting the anterior abdominal wall with the liver slightly to the right side of the median plane . From the under surface of the diaphragm, the peritoneum is reflected on the upper surface of the liver. This reflection is known as the upper layer of the coronary ligament. The lower layer of coronary ligament is the peritoneal reflection from the undersurface of the liver to the front of the right kidney and right suprarenal gland (Mahran et al.,1976).

The omentum is a double layer connecting the stomach to the other structures nearby. The lesser

omentum runs from the lesser curvature of the stomach and the first inch of the duodenum to the under surface of the liver. The greater omentum connects the greater curvature of the stomach with the anterior border of the pancreas (Grant, 1958).

The primary function of the peritoneum is to provide a slippery surface over which the abdominal viscera can freely slide. A small amount of fluid is normally present in the peritoneal cavity. Much of the peritoneal surface acts as a passive, semipermeable barrier to the bi-directional diffusion of water and most solutes. The peritoneum can be made to act as a cappillary kidney; though somewhat ineffeciently. Solutions introduced into peritoneal cavity gradually approach equilibrium with plasma. The peritoneal clearance of solutes is decreased in shock and can be significantly altered by vasoactive drugs, temperature, inflammation, oxygen tension and other factors (Nance, 1980).

As regards absorption of fluid effusions from the peritoneal cavity, substances in complete solution (solutes) are probably absorbed directly into blood capillaries, whereas particulate matter in suspension probably passes into the lymph vessels, with the aid of phagocytes. Normally small volume of fluid are transferred across the peritoneal surfaces . However

therapeutically, considerable volumes of fluid may be administered via the intraperitoneal route. Whilst conversely, certain blood born substances such as urea can be dialysed from the blood stream into fluid artificially circulated through the peritoneal cavity (Warwick and Williams, 1973).

Ascites

The ancient Egyptians 3000 B.C. were aware of abnormal collections of abdominal fluid associated with disease of the liver (Hyatt and Smith, 1954).

Ascites is the term applied to accumulation of abnormal volume of free fluid within the peritoneal cavity. It may be produced by a large variety of conditions.

Ascites is classically divided into two categories (Boyer et al.,1978):

1. Transudates: Where the accumulated fluid is due to a hydrostatic (elevated portal or systemic venous pressure) or osmotic etiology or both, despite normal permeability.

2. Exudates: Where the accumulated fluid is due to increased vascular permeability of the peritoneum.

Ascites Dynamics:

The ascitic fluid constituents are in dynamic equilibrium with those in plasma, through the capillary bed under the visceral peritoneum. In presence of portal hypertension, the maximum rate of reabsorption of ascitic fluid is limited and is much less than the maximum rate of reabsorption of oedema. This rate can not be exceeded despite vigorous diuresis, rather, such diuresis only

serves to remove fluid from other body compartments and may cause hypovolaemia (Losowsky and Scott,1973).

Causes of ascites:

The etiology of ascites was discussed by Ockner (1979), reporting the following classification:

(A) Causes not involving the peritoneum:

I- Portal hypertention:

1. Cirrhosis and fibrosis.
2. Hepatic congestion:
   - a- Congestive heart failure.
   - b- Constrictive pericarditis.
   - c- Inferior vena cava obstruction.
   - d- Hepatic vein obstruction (Budd-Chiari Syndrome).
3. Portal vein occlusion.

II - Hypoalbuminaemia:

1. Nephrotic syndrome.
2. Protein losing enteropathy.
3. Malnutrition.
4. Liver cell failure.

III - Miscellaneous:

1. Myxedema.
2. Chylous ascites.
3. Ovarian diseases :
   - a- Meig's syndrome.
   - b- Strauma ovarii.

(B) Causes involving the peritoneum:

I- Infectious causes:

1. Acute peritonitis.
2. Tuberculous peritonitis.
3. Fungal diseases.
4. Parasitic diseases:
   - a - Schistosomiasis.
   - b - Amoebiasis.
   - c - Ascariasis.

II- Neoplasms:

1. Secondary malignancy.
2. Primary mesothelioma.
3. Pseudomyxoma peritonei.

III- Miscellaneous:

1. Granulomatous peritonitis:
   - a - Sarcoidosis.
   - b - Crohn's disease.
   - c - Starch peritonitis.
2. Gynaecological diseases:
   - a - Endometriosis.
   - b - Deciduosis.
   - c - Dermoid cyst.
3. Vasculitis.
4. Familial paroxysmal peritonitis.
5. Whipple's disease.