P E R I T O N I T I S

THESIS

Submitted for Partial Fullfilment
of Master Degree in General Surgery .

BY

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UNDER SUPERVISION OF

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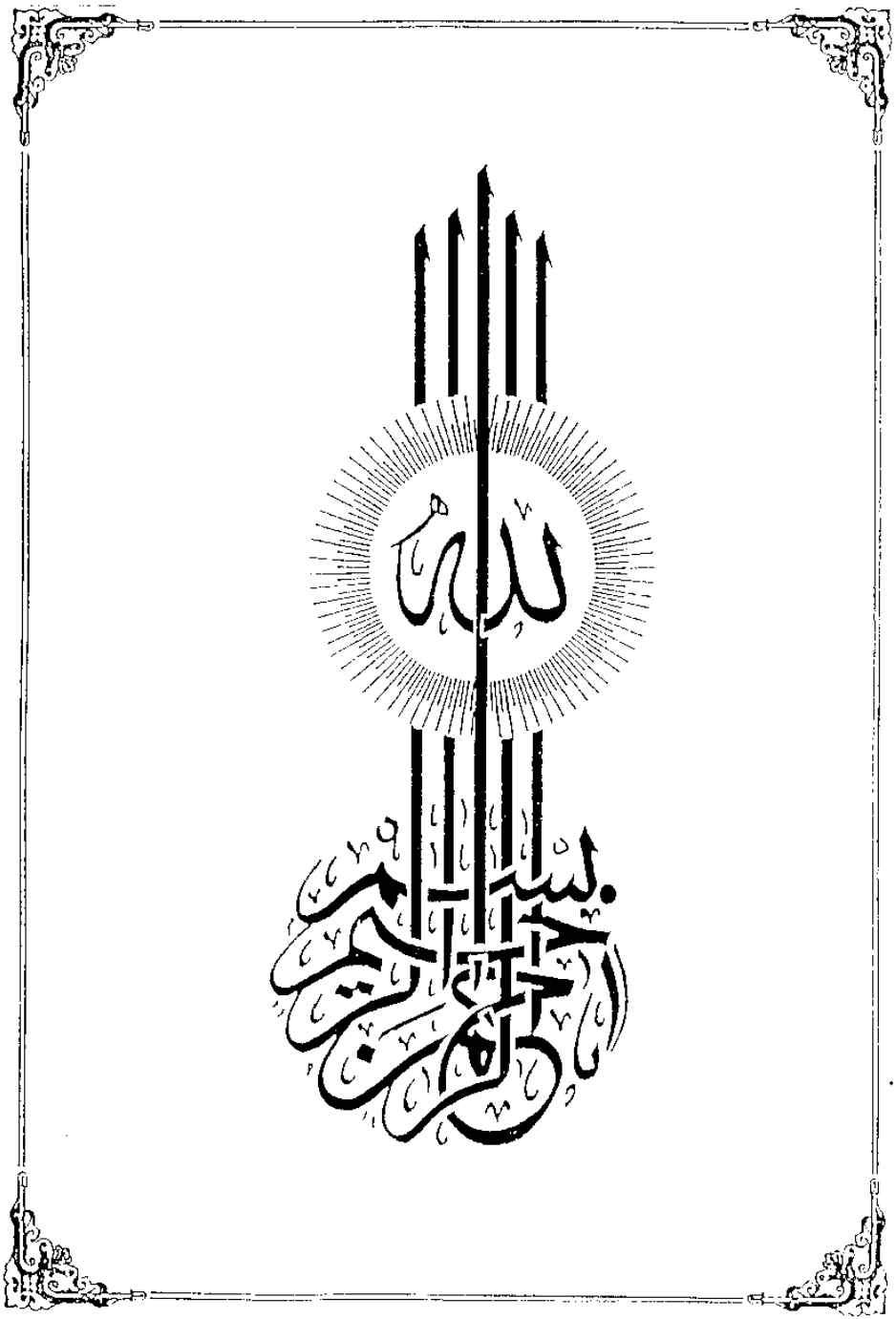
1982

ACKNOWLEDGEMENT

I WISH TO EXPRESS MY SINCERE GRATITUDE TO PROF. DR. MOHAMED EL-FIKY , PROF. OF CARDIO - THORACIC SURGERY , FOR HIS FATHERLY ADVICES AND HIS VALUABLE GUIDANCE THROUGHOUT THIS WORK.



INTRODUCTION

Peritonitis is an important emergency that meet doctors.

Early diagnosis and rapid prompt management of the case is life saving. Grave & even lethal results may occur if diagnosis is delayed or mistaken.

This thesis aims at reviewing the subject of peritonitis as a whole according to the up - to - date advances in diagnosis and management of this important emergent condition.

A practical study of ten cases of peritonitis is included in this study to elucidate the prevalent types of peritonitis.

CONTENTS

HISTORY

It is scarecely credible that , about a century ago the attitude of surgery to the peritoneal cavity was epitomized in the following sentence written in 1853 by one of Lister's teacher : " These operations are all defective in one most important respect , for, as the peritoneum must, in all of them, be wounded an intensive and frequently fatal peritonitis is inevitable consequence".

The first result of Listers introduction of antiseptic surgery, which made the abdominal cavity a relatively safe field for exploration, was that surgeons rushed to exploit the opportionities that it affered and a great new branch of surgery was born (Walker, 1949).

Until the middle of the 19 th century, surgery was seriously limited in two ways. Most important was the almost inevitable occurance of wound infection which frequently ended in fatal sepsis. Inadequete means for the control of pain was the other limiting factor, this restricted the scope of surgical intervention, since speed was essential to reduce shock.

The introduction of ether anaesthisia in 1846 rendered surgery painless, but the terrible scourge of sepis remained. This was the state of affairs when Joseph Lister, (1827 - 1912), introduced antiseptic surgery (quoted after Rosen et.al., 1967).

Still before Lister's introduction of antiseptic surgery there was a long history as regards peritonitis.

This history started when Antony van Leeuwenhook, 1632 - 1723, (quoted after Burrows 1973) observed bacteria using his lens and drew them.

The direct demonstration of living organisms of such small dimentions was a notable achievement, but any relation of such forms to natural phenomena, such as fermentation or infectious diseases either escaped Leeuwenhook or was of no interrest to him.

Systemic study was delayed for many years, and it was a century later, in 1786 that the Danish zoologist, Muller O.F. (quoted after Burrows 1973) studdied the bacteria and succeeded in discovery of many details of their structures .

Later in the second half of the 19 th centrury, their relation of infectious diseases was established when Louis Pasteur, 1822 - 1892;(quoted after Burrows 1973) discovered that putrefaction as well as many human and animal diseases were due to minute living organisms which could be transmitted by air.

The implication of pasteur's studies on putrefaction for infections disease was immeditately appreciated notably by Joseph Liter the British surgeon.

Intensive search started for agents which kill these microbes, one such, carbolic acid prepared by Calvert in Manchester (quoted after Barber and Garrod, 1963) was the bases of famous antiseptic spray used by Lister as early as 1867 to prevent post - operative sepsis.

The liberal use of phenol to control infection in the operating room, started an era of antiseptic surgery with a remarkable reduction of intercurrent infection and mortalities (Wangensteen, 1965).

The anstiseptic method of treating wounds produced astonshing results and despite some opposition was soon adopted (Rosen et al., 1976).

Lister's methods has been relatively crude, and in 1880 were gradually replaced by techniques based on the principle of asepsis (Fogelman et al. 1968).

Later the introduction of antibiotics produced a dramatic diminution of mortalities due to preitonitis , and still a further diminution of incidence of post - operative peritonitis.

History of introduction of antibiotics started when William Robert of Manchester (quoted after Barber and Garrod; 1963) in communication on " Biogenesis " , delivered to the Royal Society in 1874, mentioned in a footnote that the growth of fungi was often antagonistic to that of bacteria and vice versa.

Antagonism between penicillium and bacteria was also noted by the physicist Tyndall in 1876 (Barber and Garrod 1963).

About the same time Louis Pasteur working with Joubert J.F., 1877 (quoted after Barber and Garrod 1963), noted that if cultures of anthrax bacilli become contaminated with bacteria from the air, the anthrax bacilli failed to grow.

The story of discovery of penicillin began in 1928 with the accidental contamination of a plate culture of staph. With spores of the mould " penicillium notatum " ; Fleming (quoted after Garrod and O'Grady, 1972) was studying staph. Colonies under a dissecting microscope at intervals, for many days, and after a large colony of penicillium had developed it was observed that the staph. Colonies in its neighbourhood were showing signs of dissolution.

It was several years before penicillin was fully purified, its structure ascertained and its largescale commerical production achieved.

The present antibiotic era may be said to date from 1940. After discovery of penicillin (1929), Garrod and O'Grady (1972) mentions that other antibiotics followed respectively, Griseofulvin (1939 - 1945), Tyrothricin (1939), Streptomycin (1944), Bacitracin (1945), Chloramphenicol (1947), polymyxin (1947), Choretetracycline (1948), Neomycin (1949), Oxytetracycline (1950), Nystatin (1950), Erythromycin

(1952), Novobiocin (1955), Vancomycin (1956), Kanamycin (1957), paromomycin (1959), Lincomycin (1960), Gentamycin (1963), ... etc.

Now out of thousands antibiotics are available for use. Sulphonamides was first synthesised by klarer and Mietzsch in 1932 (quoted after Garrod and O'Grady, 1972). It is used since 1936 in treatment of haemolytic streptococcal infection (puerperal sepsis), before penicillin became gradually available (1940 - 1945), till the present time.

To summurise, history of peritonitis can be divided into 3 periods :

- First period started by observation of bacteria (Antony van Leeuwenhook), and ended by discovering that these minute living organisms are the cause of infectious diseases (Louis Pasteur), peritonitis being one of these diseases caused by such organisms.
- Second period started after Lister's introduction of antiseptic surgery (1867), which rendered abdominal operations relatively safe and made it possible to

open the peritoneal cavity without the great danger of peritonitis and fatal wound sepsis.

- Third period started with introduction of antibiotics where peritonitis lost its fatality and became a treatable disease.

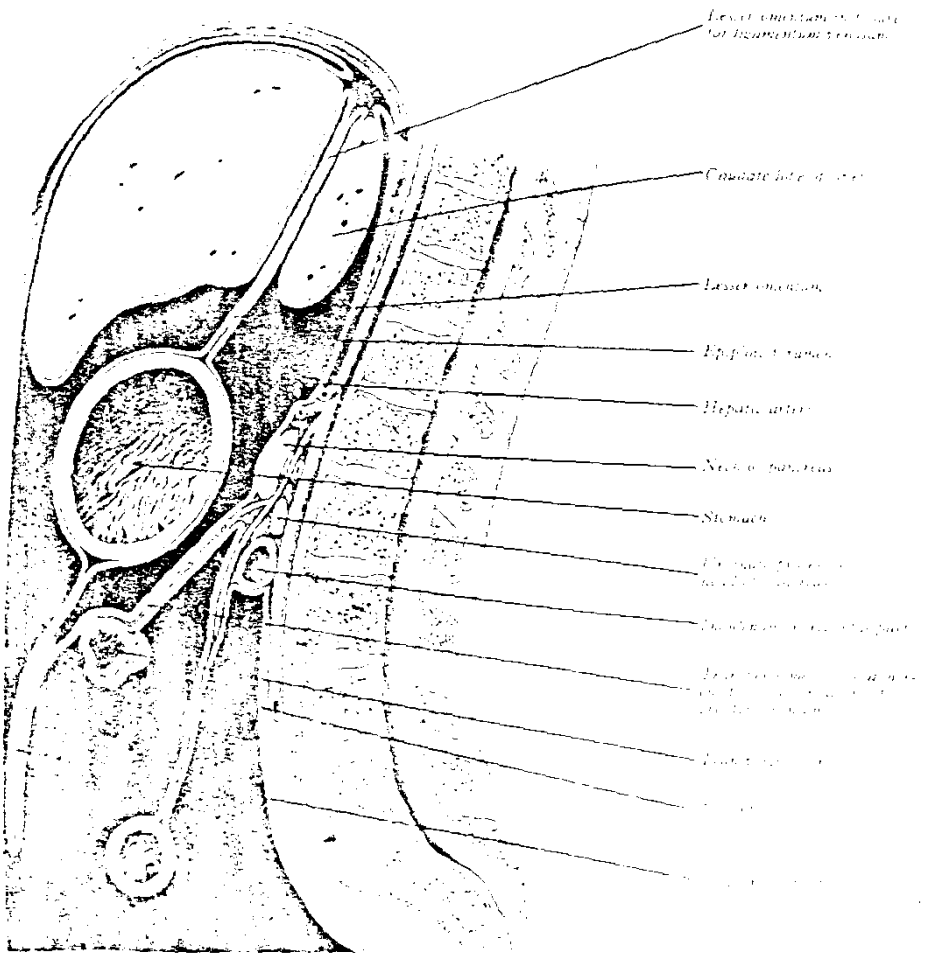


Fig. (1) A sagittal section through the abdomen approximately in the median plane.

(After Gray, 1976, Longmans).

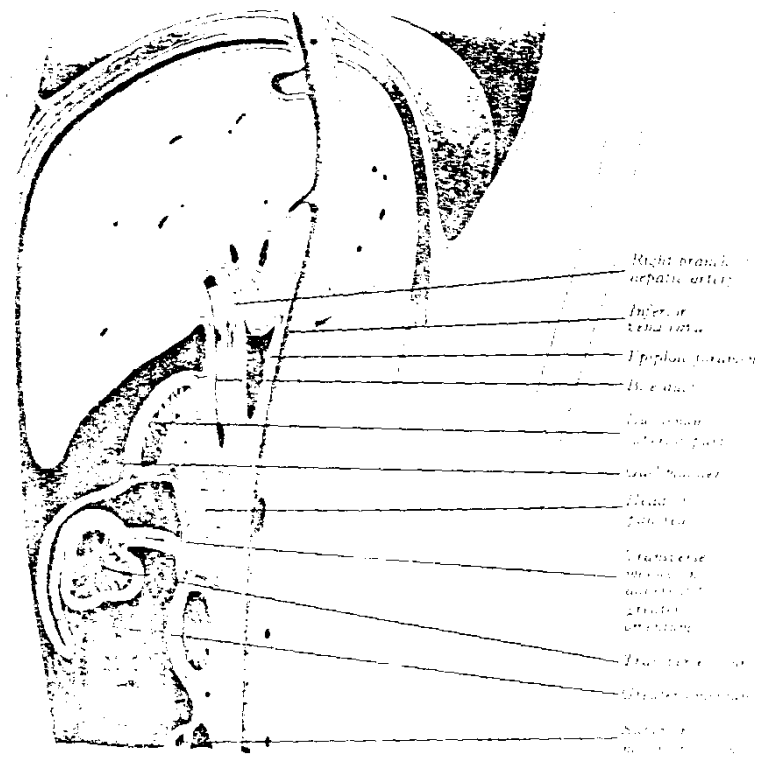


Fig. (2) A section through the upper part of the abdominal Cavity in a plane to the right of the median plane.

(After Gray, 1976 , Longmans).

ANATOMY OF THE PERITONEAL CAVITY

Peritoneum is the largest and complexly arranged serous membrane in the body . It is a serous sac containing a very thin film of serous fluid. It is closed sac in male while in female the free ends of the uterine tubes open into the peritoreal cavity (Gray, 1976).

peritoneum is a fibrous membrane whose surface is smoothed by a single layer of flat cells, a pavement epithelium.

The portion which lines the abdominal wall (parietes) is named the parietal peritoneum ; it clothes the anterior and postenior abdominal wall, the under surface of the diaphragm and the cavity of pelvis.

The portion which is reflected over the contained viscera constitute the visceral peritoneum.

The parietal peritoneum is attached to the parietes of the abdomen by extra-peritoneal areolar tissue which varies both in thickness and density in different places: