COLORECTAL CANCER

Essay

SUBMITTED IN PARTIAL FULFILLMENT

FOR MASTER DEGREE IN

(GENERAL SURGERY)

By

THARWAT NAGUIB CHARKAWI

M.B., B.Ch.

SUPERVISED BY :

Dr. MADBOULY EMAM

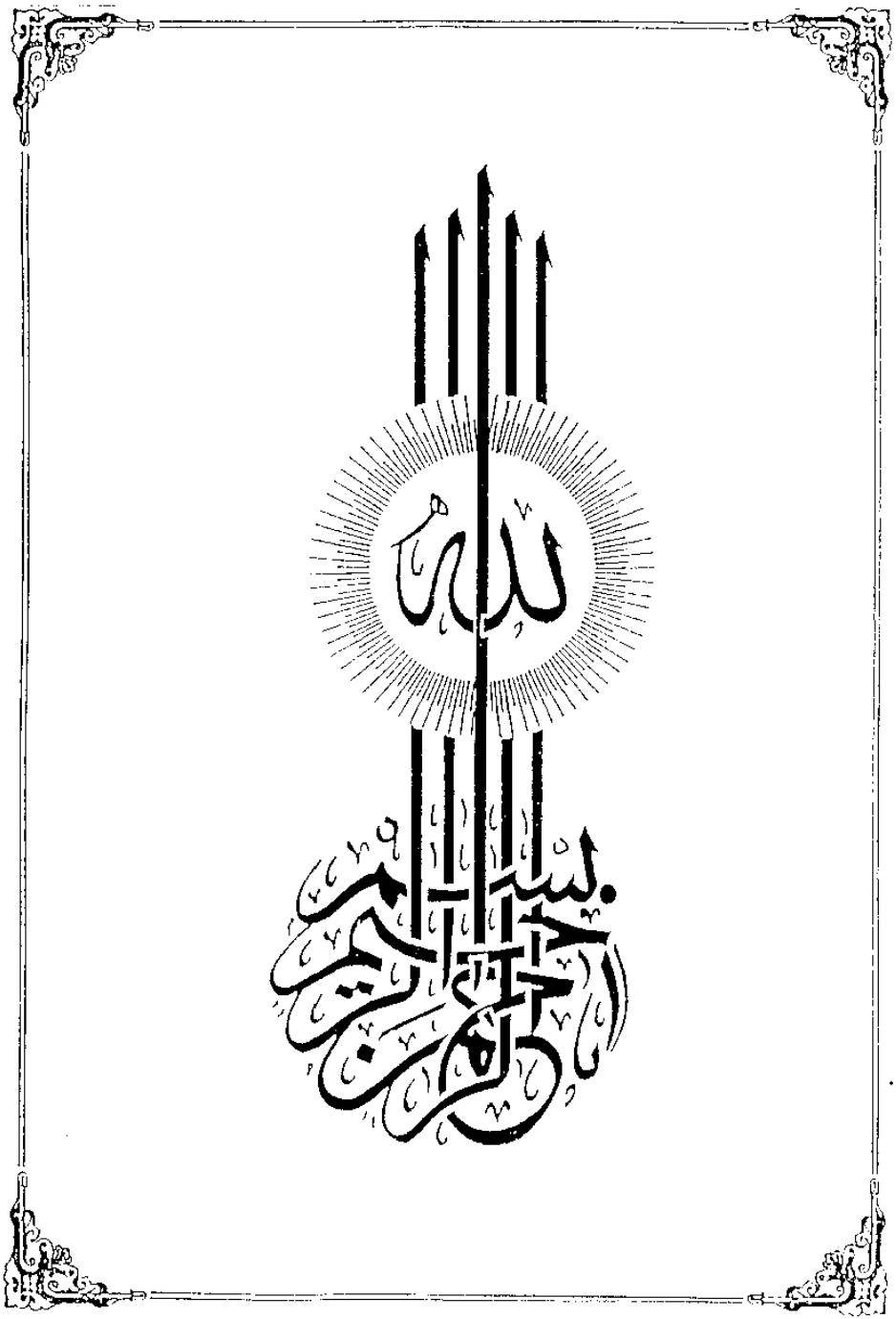
Assist. Prof. of General Surgery

AIN SHAMS UNIVERSITY

1985

TO THE MEMORY OF MY

BROTHER.



A C K N O W L E D G E M E N T

I am indebted to Prof. Dr. MADBOULY EMAM assistant Professor of Surgery, Ain Shams University who had supervised this work.

I should like to thank him for his continuous willing help and encouragement.

Beside, Dr. EMAM taught me how to research for and discover all new in medecine.

C O N T E N T S

Page

Introduction 1

Anatomy 2

Physiology 17

Pathology. 28

- Epidemiology and Precancerous Lesions 28

- Macroscopic Features 37

- Microscopic Features 40

- Mode of Spread 43

Diagnosis 48

- Clinical Picture (Without complication). 48

- Clinical Picture (With Complications). 56

- Investigations 61

- Early detection 71

Treatment 75

- Surgical Treatment 75

- Radiation Therapy 93

- Chemotherapy 96

- Chemoimmunotherapy ; 100

- Treatment of Complications 102

Prognosis 105

Summary 113

References 115

ARabic Summary . . . . . .

INTRODUCTION

Colorectal cancer is a common disease. Statistics demonstrate its increasing incidence allover the world especially in western countries. It is the second common cause of death from cancer after that of the lung.

Unfortunately, the symptomatology of this disease is not specefic; and it should be put in mind in cases of unexplained, prolonged gastrointestinal symptoms especially in elderly and risky people.

In this work the surgical anatomy and physiology, the etiological factors, the precancerous lesions and the pathological features are described.

Special attention has been made for the diagnosis and early detection of the disease.

The different lines of treatment are clarified and the prognosis is discussed.

A N A T O M Y

I. THE COLON:

For descriptive purposes the colon is divided into the followings: the caecum, Ascending colon, Right colic (Hepatic) flexure, transverse colon, left colic (splenic) flexure, descending colon and the pelvic colon.

A. The Caecum:

It is a blind pouch continuous above with the ascending colon. It lies in the right iliac fossa. The ileum opens into the large intestine at the junction between the caecum and ascending colon. The vermiform appendix opens into the postero medial aspect of the caecum, about one inch or less below the ileo-caecal valve. The caecum is usually covered by peritoneum completely, except for sometimes, the upper part of its posterior wall, as a result, it enjoys a considerable amount of movement.

The retrocaecal recess lies behind the caecum. The extent of this recess is variable, and occasionally it may extend upwards behind the lower part of the ascending colon. This recess is bounded on each side

by a caecal fold which is a peritoneal fold that connects the caecum with the posterior abdominal wall.

The caecum is related anteriorly and laterally to the anterior abdominal wall, separated from it by coils of small intestine and the greater omentum. Medially it is related to coils of small intestine. Posteriorly, it rests on the iliacus and psoas major; separated from them by the fascia iliaca, psoas fascia and the retrocaecal recess where the appendix may lie. The caecum also rest on the external iliac artery, genito femoral nerve, femoral nerve and lateral cutaneous nerve of the thigh.

As in the rest of the colon, the longitudinal muscles of caecum form three bands, between which the circular muscle layer constitutes the sacculated wall of the gut. This flat bands of the longitudinal muscle (Tenia) lie one anterior, one posteromedial and one posterolateral. All three converge on the base of the appendix.

b. Ascending Colon:

This begins at the upper end of the caecum to the inferior surface of the liver, where it forms the right colic flexure. It is about 15 cm in length. It is covered by peritoneum on the front and sides, where it is related to the anterior abdominal wall separated by coils of small intestine and the greater omentum.

Posteriorly, it has no peritoneal covering and rest on the following structures from below upwards: iliac crest, iliolumbar ligament, quadratus lumborum, the origin of the transversus abdominis from the lumbar fascia (being connected and fixed by fibrous tissue of the extra peritoneal fascial envelope); and lastly the fat in front of the right kidney. The colon is separated from these structures by lateral cutaneous nerve of the thigh and, sometimes, the ilioinguinal and iliohypogastric nerves. The ascending colon acquires a mesocolon in 26 % of people. The sacculation in the ascending colon is due to the three teniae coli being too short for the bowel. The appendices epiploice are bulbous pouches of peritioneum, distented with fat project in places from the serous coat.

C. Right Colic Flexure:

This part forms the region of junction between the ascending and transverse colon. It is covered by peritoneum except posteriorly. Anteriorly, superiorly and laterally it is related to the colic impression of the right lobe of the liver. Posteromedially, it is directly related to the front of the lower and lateral part of the right kidney.

D. The Transverse Colon:

It is about 45 cm long, extends from the right flexure in the right hypochondrium to the left flexure in the left hypochondrium. As it passes across the abdomen the transverse colon forms an arch which is convex forwards and downwards. The convexity of the greater curvature of the stomach lies in its concavity, the two being connected by the gastrocolic omentum. The greater omentum hangs down from its lower convexity, in front of the coils of small intestine. At its begening, the transverse colon lies in front of the second part of the duodenum and the head of pancreas, where it

has no posterior peritoneal coverings. The rest of the colon is almost completely covered by peritoneum and is attached to the anterior border of the pancreas by the transverse mesocolon. Which is attached from the inferior pole of the right kidney across the second part of the dudenum and the pancreas to the inferior pole of the left kidney.

The appendices epiploicoe are larger and more numerous than on the ascending colon.

Some rotaion of the gut wall occurs at the flexures so that the anterior tenia of ascending and descending colons lies posteriorly while the other two anteriorly.

E. Left Colic Flexures:

This flexure lies directly on the diaphragm just lateral to the left kidney. It is more acute and lies at higher level, farther from the median plane, than the right flexure. It is covered by peritoneum anteriorly, superiorly and laterally. It is connected to the diaphragm by a fold of peritoneum called the phrenico-colic ligament. Superiorly, it is related to

the lateral end of the spleen and the tail of pancreas Medially, it is related to the left kidney.

F. The Descending Colon :

It is about 30 cm long extends from the splenic flexure to the pelvic brim where it joins the sigmoid colon. It is covered by the front and sides. Where it is related to the anterior abdominal wall. Posteriorly, it has no peritoneal coverings and rests on the lower and lateral part of the left kidney, the quadratus lumborum, the iliac crest, the iliolumbar ligaments, the iliacus and psoas major from above downwards separated from these structures by the subcostal vessels, nerve, iliohypogastric nerve, ilioinguinal-nerve, lateral cutaneous nerve of the thigh, femoral nerve, genito-femoral nerve, testicular or ovarian vessels and the externaliliac artery. It acquires a mesocolon in 56 % of people. The three tenia coli lie one anterior and two posterior appendices epiploice are numerous.