Recent Trends in Management of Colo-rectal Cancer

Essay
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The aim of this work

The aim of this work is to discus recent trends in diagnosis and treatment of patients with colo-rectal cancer to evaluate their efficacy in the prognosis of this heterogeneous type of tumours.

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Introduction

Colorectal cancer is the second most prevalent cancer in the developed world and the third most prevalent in developing nations.

(Pisani P et al., 2002)

Colon cancer is becoming common in Egypt. Its also has unique characteristics that differ from those reported in the western countries.

(Abeer A. Bahnassy et al., 2002)

Effective management of colorectal cancer depends on early detection. Progress in this aspect would be by improving diagnostic tools and also in encouraging patients to present early. At present, fibreoptic endoscopy is the investigation of choice because of accuracy and capacity to biopsy/remove lesions found. Improvements in endoscopy include improved optics, magnifying features, localizing techniques, endoscopic resection and endoscopic assisted surgery.

(Togashi K et al., 2003)

However, colonoscopy carries the risk of perforation in 0.2%2 and virtual colonoscopy [computed tomography (CT) colonography] is being developed to avoid these risks.

Once the diagnosis has been made, accurate staging can optimize treatment. Modalities like ultrasound, CT scan, magnetic resonance imaging (MRI), positron emission tomography (PET) and radioimmunoscintigraphy are being developed for staging, as well as detection of recurrences.

(Tan A G S et al., 2003)

In the surgical management of colorectal cancer, the development of colonic stents offers a valuable option in treating malignant large bowel obstruction. This technique is potentially very useful in dealing with elderly patients with comorbidity and those with unresectable disease. In the former, it allows time for the patient's overall medical condition to improve and often enables them to proceed to an elective single stage procedure (avoiding a temporary stoma).

(Lumley J et al., 2002)

Minimally invasive (laparoscopic) techniques are being refined for colorectal cancer surgery with well documented advantages of less postoperative pain, reduced ileus, shorter hospital stay, better cosmesis and earlier return to work. In the hands of experienced laparoscopic and colorectal surgeons, the initial concerns over port site recurrences are probably unfounded and the long-term survival at least comparable with open surgery.

(Lumley J et al., 2002)

Systemic 5-fluorouracil (5-FU) forms the cornerstone of postoperative adjuvant therapy. The pathologic stage of disease is critical in determining which colon cancer patients receive adjuvant treatment. The excellent survival rate for stage I patients treated with surgery alone has excluded this group. Until recently, recommendations included treatment with 5-FU and levamisole for all patients with stage III colon cancer**.**

(O'Connell MJ et al., 1998)

ANATOMY OF THE COLON AND RECTUM

Introduction

The large intestine extends from the distal end of the ileum to the anus, and is 1.5m long, although there is considerable variation in its length. Its caliber is greatest near the cecum, and gradually diminishes to the level of mid rectum. It enlarges in the lower third of the rectum to form the rectal ampulla above the anal canal.

(Jeremiah et al., 2005)

The large intestine is divided into five segments. From proximal to distal, these segments are: right colon, transverse colon, left colon, sigmoid colon, and rectum .

(Rolandelli and Roslyn, 2001)

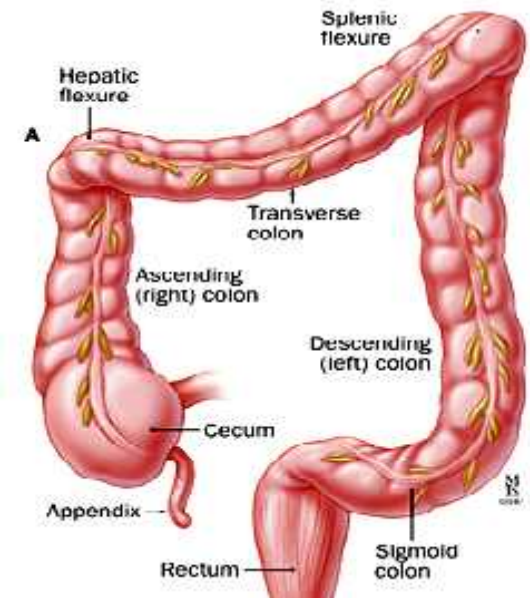

Figure 1 : Anatomy of the colon

(Yeatman and Bland, 1989)

Throughout its length there is an alternating pattern of fixed and mobile components:

- The cecum and the transverse and sigmoid colons possess considerable mobility.
- The ascending and descending colons are fixed to the posterior wall.

(Richard, 2001)

The large intestine differs from the small intestine in:

- It has a greater caliber.
- It is for the most part more fixed in position.
- Its longitudinal muscle, though a complete 1ayer, is concentrated into three longitudinal bands, teniae coli.

- In all but the distal sigmoid colon and rectum; small adipose projections (appendices epiploicae) are scattered over the free surface of the whole colon (they tend to be absent from the cecum, vermiform appendix and rectum).
- Moreover, the colonic wall is puckered into sacculations (haustrations), which may, in part, be due to the presence of the teniae coli, and which may be demonstrated on plain radiographs as incomplete septations arising from the bowel wall.
- The function of the large intestine is chiefly absorption of fluid and solutes.

(Jeremiah et al., 2005)

- The locations of the teniae are useful landmarks and specific in relation to the position of the colon itself. The posterior teniae (teniae omental) is found on the posterolateral border of the ascending and descending colon and the anterior border of the transverse colon; the anterior teniae (teniae libera) is visible on the exposed, or antimesenteric border of the cecum and the ascending, descending, and sigmoid colons, but is located on the inferior surface of the transverse colon and covered by the attachment of the greater omentum; the lateral.
- teniae (teniae mesocolica) is located on the posteromedial side of the cecum and the ascending, descending, and sigmoid colons, and on the posterior

border of the transverse colon at the attachment of the transverse mesocolon. Between the teniae coli the colon is sacculated, forming the haustra coli.

(Richard, 2001)

The cecum and appendix:

The cecum represents the beginning of the large bowel. The ileocecal valve is located in the posteromedial surface of the cecum, and is sustained in place by the superior and inferior ileocecal ligaments, which help maintain the angulation between the ileum and cecum, preventing cecal reflux. The appendix arises also from the posteromedial surface of the cecum approximately 3cm below the ileocecal valve. It ranges from 2 to 20 cm in length and, due to its mobility, can be in different positions: retrocecal (65%), pelvic (31%), subcecal (2.3%), preileal (1.0%), and postileal (0.4%).

(Moreira and Steven, 2005)

The ascending colon:

This is the first part of the colon, about 15 cm in length, extends upwards from the ileocecal junction to the right colic (hepatic) flexure. The latter lies on the inferolateral part of the anterior surface of the right kidney,

in contact with the inferior surface of the liver. The ascending colon lies on the iliac fascia and the anterior layer of the lumber fascia. Its front and both sides possess a serous coat, which runs laterally into the paracolic gutter and medially into the right infracolic compartment. The original embryonic mesentery is retained in about 10 % of adults.

(Chummy, 2006)

The hepatic flexure:

As the colon ascends, it reaches the under surface of the right lobe of the liver, lateral to the gallbladder, where it angulates acutely medially, downward, and anteriorly to the hepatic flexure. This angle is supported by the nephrocolic ligament anterior to the right kidney, and covering the second part of the duodenum. The second portion of the duodenum and right kidney are exposed during mobilization of this flexure.

(Moreira and Steven, 2005)

The transverse colon:

The transverse colon is about 45 cm in length. Hanging between fixed positions at the hepatic and splenic flexures, it is completely invested in visceral peritoneum. The nephrocolic ligament secures the hepatic flexure and