

TACTICS OF TREATMENT OF ACUTE LEFT COLON CANCER OBSTRUCTION

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ABSTRACT

Background: Advanced colorectal cancer is commonly associated with colon obstruction/between 15-20% of patients with colonic cancer/ or/and tumor infiltration to adjacent organs. We set out to study in-hospital morbidity and mortality after operations of acute left colon cancer obstruction. Methods: From 2000 to 2010 the medical records of 204 cases /15.1%/ of acute left colon cancer obstruction were reviewed from total of 1351 patients who were operated from colo- rectal cancer. Results: The types of operations were a Hartmann procedure in 78 patients /38.2%/, colostomy in 58 patients /29.4%%, a type of colectomy with ileo-colo anastomosis in 54 patiets /26.5%/ and a standard resection in 14 patients /6.8%/. The following early complications were occurred: anastomotic leakage in 4 patients, wound infections in 5 patients, dehiscence of operative wound in 2 patients The in-hospital mortality rate was 11.3%. Conclusions:The emergency management of acute left-sided colonic obstruction remains controversial.The one-stage resection anastomosis which could be subtotal colectomy or segmental resection is useful and the preferred choise for low risk patients.Simple colostomy or Hartmann procedure should be reserved for high risk patients.Colonic stenting is the best option either for palliation or as a bridge to surgery.

Key words: acute left colon cancer obstruction , intestinal obstruction , colorectal cancer

INTRODUCTION

Worldwide incidence of colorectal cancer / CRC / noted trend of constant increase for the period 1970 - 2006, mainly due to the increasing relative part of elderly population. CRC ranks second in frequency among the population of North America and Western Europe, after the lung cancer in men and breast cancer in women. Since 2000 this is the most commonly diagnosed cancer in Europe,with 280,000 new cases per year – 123,000 men and 135,000 women [1]. These data differ significantly from published for the USA, which recorded a decrease in the frequency of CRC of 1.8% per year for the period 1985-1995, with subsequent stabilization until 2000. USA data show a decrease in the mortality of CRC from 1980 to 2000, with 5 years survival of about 60% . However, CRC continues to be the third most common cause of death among men and women in the USA and the second for North America.

The majority of cases of acute colonic obstruction are due to CRC. Between 15-20% of patients with CRC present with symptoms of acute obstruction[22].

Obstructive left-sided colonic cancers /OLCC/ are associated with high morbidity and mortality. A large numbers of patients will have a colostomy which is either temporary or permanent. Up to 50% of cancers located in flexura lienalis lead to obstruction and the perforation as a complication of the obstruction gains 1 to 11%.

The emergency management of acute left-sided colonic obstruction remains controversial.

MATERIAL AND METHODS

We operated 1351 patients with CRC in the Surgery Clinic of University Hospital "St. Anna" Sofia for the period 2000-2010. Of these 204 patients /15.1%/ were urgent addmited. Urgently were operated 73 women and 131 men of mean age 69.3 years.

We set out to study in-hospital morbidity and mortality after operations of acute left colon cancer obstruction.

In patients with subtotal or total colectomy the gastro-intestinal tract was recovered by termino-lateral or latero-lateral ileo-colo anastomosis. In patients with segmental resection of the colon the GIT was recovered via termino-terminal colo-colo anastomosis with or without a protective stoma.

Thromboembolic prophylaxis with subcutaneous low molecular weight heparin was administered on the first postoperative day for one month. The antibyotics we have used were second-generation cephalosporins and metronidazole. We lined them at the induction of anesthesia for average of 5 days postoperatively.

RESULTS

In five patients of the 204 patients operated on we have found intraoperatively a second synchronous tumor proximal to the obstruction.

We performed one-step resection with primary anastomosis in 68 patients /33.3%/. Subtotal or total colectomy was

done in 54 /26.5%/ of them and a segmental resection of the colon in 14 /6.8%/ patients. Only manual decompression of the colon without intraoperative irrigation was done in patients with segmental resection. We made temporary protective colostomy in 9patients.

In 78 patients /38.2%/ we performed Hartmann`s procedure. In 58 patients /29.4%/ we made just colostomy - 15 temporary and 43 definitive.

Tabl. 1Type of surgery and patients

Types of Interventions	Number of Patiens
Primary resection anastomosis	68 / 32.4% /
Hartmann`s procedure	78 / 38.2% /
Colostomy	58 / 29.4 % /

Intraoperatively 6 patients obtained a partial rupture of the colon and a faecal contamination. There was anastomotic leakage in 4 patients /7%/. Two of them gained intestinal fistula, which consequently closed spontaneously.

There was suppuration of the surgical wound in 5 cases, and in 2- a dehiscence of the laparotomy.

Twenty three patients died during the hospital stay/11.3%/. From patients with Hartmann`s procedure died 9 ; from patients with resection and primary anastomosis died 6 and from those with colostomy 7 died patients.

On the sixth month after the operation in patients with subtotal colectomy the average number of defecations were 2.7 per day and in these with total colectomy 3.5 per day.

Tabl. 2 Type of surgery, complications and in-hospital mortality

Type of surgery	Morbidity	In-hospital mortality
PRA/primary resection anast/	2 / 68	6 / 68
Hartmann`s procedure	4 / 78	9 / 78
Colostomy	1 / 58	8 / 58

DISCUSSION

Emergency surgery for acute colonic obstruction is associated with a significant risk of severe morbidity and high mortality rate. There is a high rate of stoma creation also - either temporary or permanent. Whereas right sided colonic obstruction are usually treated via one-stage resection with primary anasthomosis for all patients but the frailest[9], controversy continues to revolve around emergency operative management of obstructed left colon cancer / OLCC/ [22].

There are several treatment options which include: (i) simple colostomy /C/ ; (ii) Hartmann`s operation /HP/; (iii) one-stage resection anastomosis which could be subtotal/total colectomy /TC/ or segmental colectomy /SC/ with intra-operative colonic irrigation /ICI/ or manual decompression /MD/; (iv) endoscopic colonic stenting (SEMS).

Colostomy /C/

In theory, several benefits might be associated with creation of a loop colostomy: it provides colonic decompression; minimizes surgical trauma; reduces the risk of contamination from unprepared bowel; allows staging and multidisciplinary evaluation prior to defensive treatment.

The literature review reveals that C does not provide any short or long-term benefit over HP or PRA. The multiple operations are associated with longer overall hospital stay and a higher cumulative morbidity as a results of multiple operations [2,21].

Loop colostomy should be adopted in case of dramatic scenario, when neoadjuvant therapy could be expected [21].

Hartmann procedure /HP/

There are no RCTs comparing HP and PRA; thus neither grade A and grade B are available[21].

A Cochrane systematic review by De Salvo et al. compared staged procedure versus primary resection, and found similar mortality with either strategy [2].

In 2004 Meyer et al. in a prospective non randomized multicenter study compared 213 patients undergoing HP to 340 patients undergoing PRA for OLCC in emergency scenario. The mortality rate in the case of palliation for HP and PRA respectively was 33% vs. 39% and in case of curative intent 7.5% vs. 9.2%., however both of them without statistical difference and the morbidity rate was not significantly different among groups also [1].

Among prospective non randomized and retrospective studies the rates of anasthomotic leak in patients with OLCC treated with PRA range from 2.2% to 12% [1,3,4], which are similar to those reported for elective surgery ranging from 1.9% to 8% [5,6,7].

The main disadvantages of HP is cleary the need for second major operation to reverse the colostomy, which will be associated with a risk of anastomotic dehiscens similar to PRA. Furthermore the stoma reversal rate is only 20% in those patients with colonic cancer [3,8].

Hartmann`s procedure should be preferred to colostomy and should be considered in patients with high surgical risk. / Grade 2B /[21]

Primary resection and anastomosis /PRA/

Absolute indicatons for subtotal/total colectomy in OLCC are right colon ischemia, cecal serosa tears or perforation, and synchronous proximal malignant tumors which occur in 3% to10% of cases[10]. It is a one stage radical oncological resection with advantages to treat synchronous proximal tumors, to prevent metachronous cancer, to avoid stoma creation and to remove the colon as a septic content. The major disadvantages are resection of healthy colon resulting in poor consequences with many patients complaining of diarrhoea afterwards[10].

Lim et al. in 2005 report the only RCT comparing intraoperative colonic irrigation /ICI/ with manual decompressin /MD/ in OLCC. They concluded that PRA with MD is a shorter and simple procedure than PRA with ICI, and offers similar results in term of mortality, morbidity or anastomotic leak rates [11].

In 2009 Kam et al. published a systematic review on ICI vs. MD in OLCC: they included 1 RCT, 1 PCT and 5 prospective comparative case series and concluded: no statistical significance could be shown between the two procedures [12,23].

PRA with MD is a safe option and appears to be associated with best outcomes / Grade 1A /[21].

Endoscopic colonic stents /SEMS/

SEMS have been used for palliation or as a bridge to surgery.

There are three RCTs comparing colostomy vs. SEMS for palliation of malignant colon obstruction. These studies were limited by the small simple size, by the lack of follow up [21].

The feasibility, safety, and efficacy of SEMS have been analyzed by retrospective studies [24,25]. There are four systematic reviews analyzing the outcome of SEMS for OLCC with the Sebastian study being the most completed and focused one [13]. He retrieved 54 studies with a total of 1198 patients and the median rates were: technical success 94% ; the clinical success 91% ; the colonic perforation 3.76% ; the stent migration 10% ; the re-obstruction 10%, stent related mortality 1% [13].

Little is known on oncology outcomes of using SEMS as a bridge to elective surgery. A recent paper recommended that surgery should be scheduled shortly after stent inserting because the risk of tumor seeding from perforation and dislocation of stent [16,17,18].

Two decision analysis studies from the USA and Canada calculated the cost-effectiveness of two competing strategies – colonic stent vs. PRA for OLCC. Both concluded that colonic stent followed by elective surgery is more effective and cost efficient than emergency surgery [19,20].

Stents as a bridge to surgery seems associated with lower mortality rate, shorter hospital stay, and a lower colostomy formation rate. / Grade 1B /[21]

Although PRA is considered to be a better option in OLCC, this is not real for all patients and several parameters /patients and surgeon related / should by taken in consideration prior to choose the surgical procedure [4,8,15].

The Association of Coloproctology of Great Britain and Ireland identified four important predictors of outcome – age, ASA grade, operative urgency, and Dukes` stage.

The experience and subspecialty of surgeon seems to be the primary factor in the choice of anasthomosis or end colostomy [8,14].

Several comparative, retrospective studies did not show any significant difference in term of overall survival after 3 and 5 years of follow up between primary tumor resection with palliative intend and stent placement in patients with stage IV colorectal cancer[21].

In this study most of patients with stage IV colorectal cancer underwent a colostomy. We performed PRA in patients with low risk. We found that patients undergoing simple colostomy had fewer complications. In-hospital mortality rates were comparable in the three procedures.

CONCLUSIONS

The management of acute left-sided colonic obstruction still remains a challenge despite significant surgery progress.

There is still enough evidence to suggest that majority of cases can be treated safely with one-stage resection and anastomosis.

Hartmanns' procedure should be reserved for high risk patients.

Simple colostomy should be adopted in very ill patients or in unresectable disease.

There are remaining grey areas but clinical decisions will often depend on the surgeons' experience.

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