

SURGICAL TREATMENT OF CRC IN THE SURGERY CLINIC AT THE UNIVERSITY HOSPITAL "ST. ANNA" SOFIA IN THE FIRST DECADE OF THE TWENTY-FIRST CENTURY

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Key words: colorectal cancer, colon, rectum, neoplasm

INTRODUCTION

The colorectal cancer (CRC) ranks third in incidence of malignant neoplasms after lung and breast cancer. Colorectal cancer in Bulgaria for the last forty years increased from 10.5 in 1970 up to 59.4 per 100 000 men (35.4 for colon and 24.0 for rectum) and 43.5 per 100 000 women (28.4 and 15.1) in 2004[1,2]. This trend is observed not only in Bulgaria but worldwide, which confirms that colorectal cancer is a disease of the Present Day[2,6]. Leading countries by number of new patients are North America, Australia, New Zealand and Western Europe, i.e. industrialized countries. In 2002 are registered more than 1 million new cases - 9.4% of all cancer patients in the world. At the same time higher rates of increase in incidence is reported in countries with rapid industrialization, such as Japan, South Korea and others in Asian-Pacific region where 30-40 years ago colorectal cancer wasn't so frequent[5,6].

PURPOSE AND TASKS

The aim of our retrospective study is to analyze the surgical treatment of CRC in our clinic for the period 2001 - 2010. We have set tasks to analyze: age and gender of patients; the incidence of different locations; tumor stage and time of diagnosis; possibility for surgery and the ratio between radical and palliative operations; the relative shares of different types of surgery; postoperative and total mortality.

MATERIAL

For the period 2001 – 2010 a total of 1304 people with CRC underwent surgery in the clinic or 109 patients average per year. Distribution men / women is 707:613, and the age of the patients ranged from 38 to 76 years (average age is 68.4). Over 60 years of age were 63% of the operated and over 70 - 16%. Elective operations were 1024 and the urgent were 280 or 27.34% (*Table 1*).

Table 1. DISTRIBUTION OF ELECTIVE AND EMERGENCY PATIENTS DURING THE PERIOD

	2001ã.	2002ã.	2003ã.	2004ã.	2005ã.	2006ã.	2007ã.	2008ã.	2009ã.	2010ã.	TOTAL
Elective	87	85	85	81	82	103	121	127	125	128	1024
Emergency	26	23	28	34	25	36	36	24	28	20	280
TOTAL	113	108	113	115	107	139	157	151	153	148	1304

Table 2. LOCATIONS OF CRC

Locations	Count	Relative shares in %
Coecum	111	8,5%
Colon ascendens	98	7,5%
Flexura coli hepatica	42	3,2%
Colon transversum	81	6,2%
Flexura coli lienalis	48	3,7%
Colon descendens	47	3,6%
Colon sygmoideum	382	29,2%
Rectum	495	38,0%

Table 2 presents the relative shares between the different locations of CRC in patients operated during the period. Tumors in the rectum and sygmoid colon occupy a total of 67.2 percent, third place ranks the coecum - 8.5%, while in the rest of the colon were generally located 24.3%.

Of all 1304 patients operated for CRC, in 142 (10.9%) occurred advanced process (infiltration of adjacent organs, distant metastases, ileus, perforation of the tumor with peritonitis, inoperabillity, etc.).

Table 3 presents different types of surgery procedures performed during the period.

The overall mortality for the period 2001 - 2010 and those of elective and emergency patients are presented in *Table 4.*

Table 3. TYPES OF INTERVENTION

Hemicolectomia dex.	285
Resectio col. transversi	8
Hemicolectomia sin.	67
Resectio sygmae	211
Colectomia totalis, subtotalis	50
Операция по Hartmann	185
RRA	193
Amputatio recti	155
Palliative operations	135
Explorations	7
TOTAL	1304

Table 4. MORTALITY

	operated	deaths	relative share
Total mortality	1304	63	4,8%
Mortality by elective operated	1024	15	1,46%
Mortality by urgent operated	280	48	17,14%

DISCUSSION

1. Tactics: The diagnostic, staging and pre-operative preparing of elective patients during the period was done ambulatory and the patients were admitted in the clinic 24 to 48 hours before the intervention. Neo-adjuvant radio- or seldom chemo- therapy was performed in selected cases with advanced tumours or low rectal localisation. Per oral antibacterial preparation was not done, but just osmotic per oral gut lavage and enemas. Perioperative i.v. antibiotics prophylaxis was done routinely for 48-72 hours and just in selected cases such therapy. Anti-thrombosis prophylaxis was done routinely with LMWH in doses according to the individual score of the risk during the in hospital stay and with recommendation to be continued up to the 30th postoperative day. Anti-ulcer prophylaxis was performed routinely with H^+ inhibitor for 15-20 days post operatively. Early (up to the 48h) verticalization was performed with elastic belt support of the abdominal wall. Predominantly atraumatic and absorbable sutures and mechanical staplers were used. All the operated patients were presented to an oncological committee and a decision for the necessity of adjuvant radio- and chemo- therapy was individualized(6).
2. Total of operated patients for CRC and correlation of elective and urgent patients. (Fig.1): There is marked increasing amount of patients with CRC for the last 5 years of the period. Our opinion is that this due to the following causes: the generally increasing incidence of CRC; the improving diagnostic and the increasing operative activity towards the disease. We render considerable amount of operated patients in age over 70. We consider that to be due to the increasing average age of the country population, but to the improving diagnostic and the improving prophylaxis by minimal invasive removing of polyps after the routinely introducing of the endoscopic methods. There is marked a high operative activity in groups of patients, who were use to be considered as not perspective in the past: these in the 8th and 9th decade of life and the group urgent patients in advanced age. We interpret that with the improving potentialities of anesthesia, reanimation and the modern operative techniques.

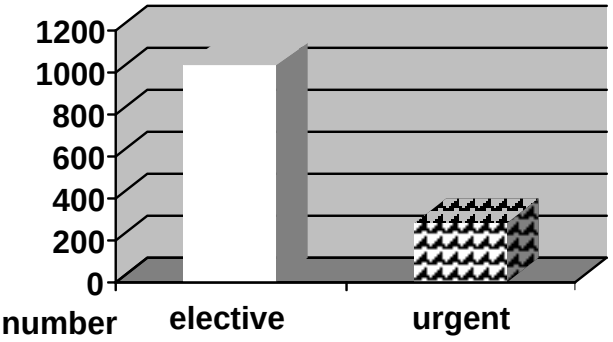

Fig. 1 Elective and urgent

3. Localisation of the tumor: There is marked high contingent of patients with tumour localisation in the distal colon and the rectum (67,2%), which corresponds to the literature data. The localisation of CRC in the rest parts of the large bowel does not impress to rise(6,10).
4. Stages of CRC (Fig. 2): The relative part of operated patients with advanced CRC in 4th stage of the disease was 29,2%. The highest ralative part (43,4%) is occupied by the operated patients in 3rd clinical stage.

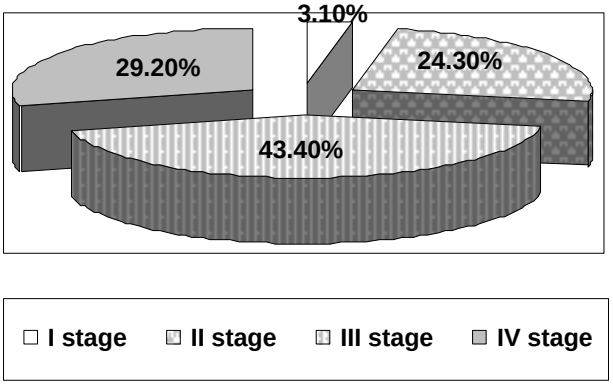

Fig. 2 Stages of tumours

5. The analysis of the performed operative procedures for CRC shows interesting information regarding to the surgical tactics. We have marked high number of radical inter-

ventions by advanced CRC – block resections when infiltration of adjacent organs is presented, as well as procto-colectomies, total and subtotal colectomies. The part of simultaneous liver resections when solitary metastases are presented is significant also[3,7]. That is due to the improving potentialities of anesthesiology, reanimation and surgical techniques taking the advantages of modern apparatuses, devices and consummative.

The Hartmann procedures performed and of the palliative operations outnumbered the urgent operations. The explanation of this is based on the following facts: Significantly increase of the average age of patients and increase of the elderly patients over 70 years of age, who are suffering as a rule of different concomitant diseases. In these cases the aim was maximal decrease of the operative time and decrease of the operative trauma volume[4,8,9].

6. Mortality: The analysis shows corresponding to the literature data relative values of mortality in the groups of elective and urgent operated patients. Mortality rate in the group of urgent operated patients corresponds to the lower levels of the literature data, but at the same time is 12 times higher than this in the group of elective operated patients.

CONCLUSIONS

1. The annual average of operated for CRC patients in the clinic marks stabile trend to increase. The same time a progressive increase of the operated patients in the group of age over 70 is marked also.
2. The diagnosis continues to be put late up in advanced stages of the disease and by complicated forms of CRC, despite the introducing of new modern methods of investigation in the medical practice as ultrasonography, endoscopic investigations, CT and MRI. The prevailing part of patients who are operated for CRC are in stage 3 and 4. For the early diagnosis is necessary active search of CRC by endoscopic investigations of risk groups of the population like these with data for familial burdensome and people over 50 years of age. [1,2,5]
3. We mark high operative activity in complicated CRC and operable cases in 4th clinical stage which results in increased relative part of "block resections"and liver metastases resections. In our opinion this is due to the following next circumstances:
   - Good potentialities of modern anesthesia and reanimation.
   - Good preoperative osmotic preparation of the large bowel and obligatory perioperative antibiotics prophylaxis and post-operative antithrombotic and antiulcerative prophylaxis.
   - Well appreciated operative technique utilizing modern surgical mono-, bi- and macro-bi-polar and ultrasound devices for surgical cut and hemostasis, atraumatic sutures and mechanical staplers.
4. The total mortality rate by the operated patients with this gravely surgical pathology is reduced, especially by the elective operated patients, but by the operated under emergency also.

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