

# TACTICAL DECISIONS IN THE OPERATIVE TREATMENT OF ADVANCED AND URGENT CASES OF COLORECTAL CANCER

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## ABSTRACT

The authors reviewed retrospectively the patients treated in the Clinic of Surgery for colorectal cancer (CRC) during a five-year period (2008-2012). The main purpose was to consider the different tactical decisions for operative treatment in complicated, advanced and urgent cases. There were a total of 706 operated patients who were analyzed according to their age, gender, stage of disease, planned and urgent operative interventions, presence of concomitant diseases, performed operative procedures and mortality rate. The principles of assessment of every different case and those for making decisions for operative tactics and kind of intervention were described. The performed different operations in complicated, advanced and urgent patients were analyzed, too. Conclusions concerning the obtained results and their comparison with literature data available as well as concerning the benefits of differentiated tactical approach to every individual case with CRC were drawn.

**Key words:** *colon, rectum, cancer, emergency, colorectal cancer*

## INTRODUCTION

The increasing incidence rate of colorectal cancer (CRC) during the last 50 years situates this malignant neoplasm on the third place among the most common tumours (9,16). The improving potentialities of anesthesia, reanimation and modern operative techniques lead to increased operative activity in advanced, complicated and emergency cases (20). At the same time, the increasing average age of the population and the frequently delayed diagnosis in the group of elderly patients create a serious challenge for the tactical decisions about treatment and surgical procedure (1,9,20).

The aim of this study was to analyze the surgical tactics in the operative treatment of

advanced, complicated and emergency cases of CRC in the Clinic of Surgery, St. Anna University Hospital of Sofia, during the period from 2008 till 2012. The following parameters were analyzed: age and gender of patients, therapeutic tactical decisions in urgent cases, operative tactical decisions in advanced and complicated cases, ratio between one-stage and two-stage operations, ratio between radical and definitive palliative operations, and postoperative mortality rate.

## MATERIAL AND METHODS

The total number of patients operated for CRC in the Clinic of Surgery, St. Anna University Hospital of Sofia, during the last 5 years (2008-2012) was 706. The relative part of operated patients with advanced CRC at 4<sup>th</sup> stage of the disease was 27,1% and of those in 3<sup>rd</sup> stage was 44,7%. There were 557 primary planned operations, 52 second-stage planned ones while emergency operations were 149 or 21,1% of all the primary interventions (Table 1).

Male:female ratio was 374:332. Patients' age ranged from 38 to 94 years (average age of 71,6 years).

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Some 61% of the operated patients were aged over 60 years but 23% of such patients were aged even over 70 years.

*Table 1. Annual distribution of planned and emergency operations*

Operation	Years/patients					
	2008	2009	2010	2011	2012	total
planned	127	125	128	132	97	609
emergency	24	28	20	47	30	149
total	151	153	148	179	127	758

In the group of urgent patients, age varied from 59 to 94 years the average age being 79,8 years. As a rule, most of these patients presented with different combinations of concomitant heart, pulmonary, brain, endocrine, nephrological or other diseases.

The performed different operative procedures are presented in Table 2.

## RESULTS

Of a total of 557 patients primary operated for CRC, 59 (10,6% of the cases) presented with an advanced pathological process such as infiltration of adjacent organs, covered perforation or penetration of the tumour into another organ, inoperable stage of disease, liver metastases, etc.

In 31 out of a total of 706 operated patients (in 4,4% of the cases), a multiple (double and in four cases even triple) CRC localizations were established.

The overall mortality rates of planned and emergency patients for the period of investigation are shown in Table 3.

*Table 3. Postoperative mortality rates*

Operation/patients	total	deaths	relative share
planned	609	13	2,13%
emergency	149	21	14,09%
total	758	34	4,48%

## DISCUSSION

CRC incidence rate significantly increases during the last decades, especially in patients aged over 60 years (9,16). At the same time, the operative activity towards the disease enhances, particularly in advanced and urgent cases (1,8,20). Commonly, these patients are in poor general status and very often present with decompensated concomitant chronic diseases (1,2,4,8). Under these conditions, a careful appraisal by the surgeons and a strict specification of the tactical attitude to the operative treatment of CRC should be implemented (1,2).

In our Clinic of Surgery, we adhere to an algorithm for CRC patients. The pre-operative assessment of the elective patient is done after obligatory total colonoscopy up to the coecum, contrast-enhanced CT and consultations with different specialists according to the concomitant diseases (1,15,16). The following indices are assessed: general patient's status, stage of the disease, presence of data of subileus conditions, presence of data of synchronous colon tumours, presence of data about infiltration of adjacent organs, and presence of data about the metastatic dissemination of the malignant process. The operative tactics and volume of the intervention are determined after this complex evaluation. Different possibilities are taken in consideration in the advanced cases:

- The validity of extended interventions is assessed in the presence of data about synchronous colon tumours and/or subileus conditions: right extended hemicolectomy and subtotal or total colectomy (1,14,16,18). We performed 88 such interventions during the abovementioned period. Sixty-seven of them underwent elective operations (11% of 609 cases) for advanced tumours of the left colon with subileus conditions and synchronous colon tumours.
- The possibilities of block resection and/or synchronous liver resection are evaluated in the presence of data about infiltration of adjacent organs and/or liver metastases (3,5,9,16). We performed 39 synchronous metastasectomies and liver resections in elective patients. During the same period we performed 16 planned block-resections with parts of infiltrated

*Table 2. Performed operative procedures*

No	Operations	n
1.	Right hemicolectomy	138
2.	Extended right hemicolectomy	51
3.	Colon transversum resection	5
4.	Left hemicolectomy	28
5.	Total or subtotal colectomy	37
6.	Sigmoid resection	101
7.	Primary definitive Hartmann's operation	54
8.	ARR - total	114
	with virtual ileostomy protection	34
	with transversostomy protection	19
	with coecostomy protection	6
9.	Rectum amputation	84
10.	Two-stage operations - first-stage total	52
	with first-stage Hartmann's operation	35
	with first-stage urgent coecostomy	9
	with first-stage urgent transversostomy	5
	with first-stage urgent sigmoidostomy	3
11.	Definitive palliative operations - total	37
	external derivation after laparotomy/laparoscopy	23
	external derivation without laparotomy/laparoscopy	11
	internal derivation (bypass)	3
12.	Explorations with biopsy - total	5
	via laparotomy	2
	via laparoscopy	3
13.	Second-stage elective operations	52
	Total	758

adjacent organs such as stomach, duodenum,

large bowel, gallbladder, liver, urether, urinary

bladder, etc. which amounted to 2,7% of the cases with planned interventions.

- We estimated the alternative of a two-stage operation, i.e. radical resection with external derivation of the passage at first stage and restitution after CT, endoscopic and laboratory follow-up for 12 months, when data of infiltration/penetration in adjacent organs and/or subileus in elderly patients with a poor general status were available (1,8,9,12,21). We performed 54 Hartmann's operations in such patients or in 8,8% of all 609 planned interventions for this period. Passage restitution was accomplished one year later on in 16 (30%) of them.
- The necessity of protective proximal stoma for large bowel and anastomosis decompression was assessed in low tumours of the rectum (9,13,16). We performed 59 protective proximal ileostomies and large bowel stomas in planned patients or in 52% of all 114 anterior rectum resections (ARR).
- The assessment of patient's general status is a leading factor in emergency cases. It includes heart and respiratory function, renal function, homeostasis, intoxication, presence of data about perforation or bacterial dislocation and peritonitis, presence of abdominal compartment syndrome or threat of its development (1,2,10-12,17,19). The following possibilities were taken in consideration when surgical tactics and volume of the intervention were determined:
- Primary radical operation with anastomosis when there are no data about peritonitis, when the patient is in satisfactory general status and thus he/she could endure intubation anesthesia for more than 90 minutes.
- Primary radical operation with external passage derivation (Hartmann's operation) in the presence of data about peritonitis and/or when the patient could not survive any operative intervention longer than 90 minutes.
- Primary external passage derivation without resection (colostomy) under general anesthesia in absence of data about peritonitis, however, when the patient is in poor general status and he/she could not survive any intervention and general anesthesia for more than 60 minutes.

The possibility for resection surgery and its volume are estimated in planned order after patient's stabilization and recuperation.

- Primary external passage derivation without resection (colostomy) under locoregional anesthesia when the patient is in poor general status and he/she could not survive any intervention and general anesthesia and when there are no data about peritonitis. The possibility for resection surgery and its volume are estimated in planned order after patient's stabilization and recuperation.

## CONCLUSION

The results from the treatment of CRC according to the algorithm approved in the Clinic of Surgery in 2001 are good. This is due to the precise assessment and the different tactical decisions for every case. The individual approach to every patient according to the general status, age, stage of the CRC disease and concomitant illnesses improves the results from the planned and urgent operative treatment. The analysis of the results from the surgical treatment of our CRC patients shows that they correspond to the data of the recent literature available. The postoperative mortality rates in planned operations (2,1%) and in emergency patients (14,1%) are low being even lower than those reported in the literature (3,6,7,20).

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