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## SURGICAL MANAGEMENT OF COMPLICATED LEFT COLON AND RECTAL CANCER

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**Abstract:** Colorectal cancer management is still a challenge. In spite of the advances of medicine concerning some new imaging methods and implementation of new screening programmes, the rate of the complicated colorectal cancer cases is still high. Patients with complicated metastatic cancer are very hard to manage. Discussions about the treatment of these conditions for optimal results still continue. Minimally invasive techniques also find place for solving these emergencies.

1. Introduction
2. Materials and methods
3. Results
4. Discussion
5. Conclusion

**Keywords:** colorectal cancer; laparoscopic surgery; Hartmann’s procedure

### 1. INTRODUCTION

Colorectal cancer is still one of the most common oncologic diseases worldwide. This is the second most common cancer in Europe and the third in the world. In the last years with the advance of the medical technologies the rate of 5-years survival increases significantly. According to the published data in about 1/3 of the CRC cases some type of ileus is observed. Most often this is CRC with bowel obstruction. Such a condition can lead to additional complications as dehydration, hypovolemic shock, acute renal or pulmonary insufficiency, bowel perforation, peritonitis, etc. Presentation of such a condition is bad prognostic factor for the patient, especially for those of the elderly and with high ASA score (2,4,10,13,14). Data reported in the literature for the obstructive colorectal cancer rate vary from 7 to 47% according to different authors (2,12). Nowadays for the management of these patients are used operative and non-operative techniques – endoluminal stent application and laser ablation (6,7). Other complications are the presence of perforated carcinoma with different in severeness picture of peritonitis and bleeding. The most often used technique in such cases is the Hartmann's procedure. Known since 1923 (proposed and performed by the French surgeon Henri Hartmann), this procedure is still relevant today. In selected patients these complicated CRC can be successfully treated by laparoscopic techniques.(9,12,13,16) Interesting are also some specific cases of metastatic CRC with urgent component, as well as those with synchronous tumors. Aim of our study is to present and analyze our experience in the treatment of rectal and left colon cancer complicated cases.

### 2. MATERIALS AND METHODS

In our study we make retrospective analysis of all patient, with complicated left colon and rectum carcinoma, treated in the Department of Surgery at University Hospital – Eurohospital, Plovdiv, Bulgaria. We have assessed the period between June 2012 and December 2017. We used several criteria – ASA score; gender; age; CRC complication type; type of surgical procedure – laparoscopic or open approach.

Although the fast development of medicine, the rate of patients diagnosed with complicated CRC is still high. Key point in the management of these cases is the choice of the compliant oncologic strategy. One of the most common complications of CRC is the bowel obstruction. This type of complication and the CRC with perforation are poor prognostic factors. In these cases the morbidity and mortality rates are still high. Laparoscopic surgical approaches also have their place in part of these states of urgency. In carefully selected patients and when performed by experienced teams, these types of procedures are accompanied by good perioperative results.

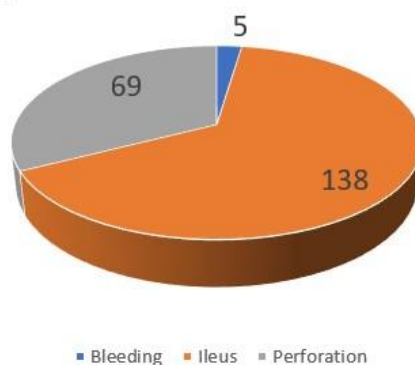
### 3. RESULTS

In the period June 2012 to December 2017, in the Department of Surgery of University Hospital Eurohospital and Ist Dept. of Surgery of University Hospital St George, Plovdiv, Bulgaria, are performed 1983 colorectal surgical procedures. 261 of these cases are with involvement of the left colon. The number of complicated cases of left colon

and rectum is 212. Most common complication was bowel obstruction in 138 patients. We performed laparoscopic procedures in 29 cases and the number of conversions was 3 (fig. 1). In 34 of all cases with persisting ileus we found metastatic liver disease. The number of patients with perforated CRC and different extent of peritoneal involvement is 69. In 5 cases operative treatment was necessary because of uncontrolled bleeding. In 34 of all cases with persisting ileus we found metastatic liver disease. The number of patients with perforated CRC and different extent of peritoneal involvement is 69. In 5 cases operative treatment was necessary because of uncontrolled bleeding. The operative risk was assessed by standard criteria of American Society of Anesthesiologists (ASA) . The severity of the postoperative complications was assessed according to Clavien-Dindo score . In all laparoscopic procedures pneumoperitoneum is performed by two methods – Veress needle (8 patients) and open Hasson's technique (21 patients). For all patients treated after April 2013 an ERAS – protocol was implemented (Enhanced recovery after surgery protocol).

**Fig 1. Complications of left colon and rectal cancer**

Complicated left colon and rectal cancer



(fig 1.)

The main groups of surgical procedures are shown in Table 1.

**Table 1.**

Type of procedure	Number	Laparoscopy (n-)	Complications	Average hospital stay
Stoma	37	18	1	6
Hartmann's procedure	168	29	4	7
Miles procedure	2	1	-	7
Anterior Rectal Resection	3	-	1	7
Colectomy	2	-	1	9
Total	212	48	7	

In part of the patients some additional procedures was performed (Table 2).

Table 2.

Simultaneous procedures	number
Liver biopsy	12
Liver metastasectomy	14
Left ovariectomy	1
Apendectomy	1
Left lateral liver sectionectomy	1
Right portal vein ligation	1

#### 4. DISCUSSION

Treatment of complicated cases of colorectal cancer is still a challenge. Except for the urgent surgical problem, we need of a plan to provide better quality of life and life expectancy for these patients. Laparoscopic techniques can help for achieving better treatment results combined with new chemotherapy agents.

Interesting and up to date is the problem with these patients with complicated metastatic colorectal cancer. Key point in these cases is the decision how to manage the primary. In the world literature a thesis is stated, that those cases with non-resectable liver metastases and lack of symptoms from the colorectal tumor, don't have better prognosis after resection of the primary (3, 12). We found 12 cases with resectable liver metastases and 4 with borderline resectable metastases during our study. In the other group we have 18 patients with non-resectable metastases. In all cases with advanced tumor process and/or malignant ascites and peritoneal carcinomatosis we perform only stoma.

In all cases with resectable tumors and lack of severe bowel obstruction we performed resection of the tumor – 87 patients (63%). In two of them we found synchronous tumors, which was a reason for colectomy. We have severe postoperative complications (Clavien-Dindo IIIb) in 24 (13.7%) cases after resection.

In all cases when miniinvasive approaches are used we observe all known advantages of the laparoscopic surgery – early feeding, shorter hospital stay. This is a reason for early de-hospitalisation and shorter period before the start of the adjuvant chemotherapy. This can lead to better prognosis and survival rate (5,6,7,8,13,14). In our study the number of the laparoscopic procedures is 48 (22.64%). The rate of conversions is 6.25% (3 from 48). The main reasons are adhesions and difficult anatomical plans. According to Masoomi et al. these are the main obstacles in front of the laparoscopy in colorectal surgery.(1,11) We have excluded all cases in which laparoscopy is used only as a diagnostic method. Another advantage of the miniinvasive methods is the lower rate of complications affecting the abdominal wall – dehiscences and wound infections. In our study we have not such complications in the laparoscopic group.

In several randomized trials are reported mortality rates about 5% (13). In our material this rate is 4.25%.

#### 6. CONCLUSION

Surgical management of complicated left colon and rectum cancer continues to be a challenge for the contemporary surgery. Gold standard in the operative management in conditions like these remains the Hartmann procedure. In selected patients these complicated CRC can be successfully treated by laparoscopic techniques. Interesting are also some specific cases of metastatic CRC with urgent component, as well as those with synchronous tumors. The treatment of those patients is accompanied by severe morbidity and high mortality. We reported rates of morbidity over 13% and mortality over 4%. Early diagnostics of these conditions has key importance in the search of better perioperative results.

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