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Analysis of Surgical Treatment of Intestinal Obstruction in Patients with Obstructive Cancer of the Left Colon

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Abstract: Currently, one of the important and unresolved problems in oncology is colon cancer, and in surgery — intestinal obstruction, which occupies the first place in the structure of complicated forms of colorectal cancer [1-4]. The frequency of this complication ranges from 15 to 88,9 % [1, 3, 5, 6].

The medical ignorance of the population, the lack of effective screening programs in oncological proctology are the main reasons for the late detection and, consequently, late treatment of patients with colorectal cancer. The majority of patients with tumor lesions of the colon are elderly [7, 8]. They are admitted to the hospital, as a rule, late, most often with advanced forms of cancer and long-term intestinal obstruction [9]. Often, due to the severity of the condition, excessive stretching of the intestinal wall, even with the existing possibility of performing a radical operation, the surgeon is forced to resort to palliative intervention aimed primarily at eliminating intestinal obstruction.

Unfortunately, currently there are no generally accepted recommendations on the tactics of surgical treatment of patients with cancer of the left colon complicated by intestinal obstruction. Proposals on the volume and duration of preoperative preparation are contradictory [10]. The relevance of the problem under consideration also lies in the fact that there is still no clinical classification of intestinal obstruction that clearly regulates the actions of the surgeon, due importance is not given to the preoperative staging of colorectal cancer, the severity of the patient's condition is not fully taken into account — all this affects the choice of a method of treating intestinal obstruction in cancer of the left colon.

The purpose of our study is to provide an individual approach to choosing the optimal way to eliminate intestinal obstruction in patients with obstructive cancer of the left colon.

Materials and methods of research. The data on 105 patients with obstructive forms of colorectal cancer who were operated on in the Syrdarya Branch of the Republican Cancer Research Center in the Department of Surgery in the period from 2017 to 2022 were analyzed. The average age of the patients was 67.4 ± 6.3 years. Of all the operated women, there were 66 (62.9%), men — 39 (37.1%). Surgical treatment was performed as planned in 20 (19.1%) patients, according to urgent indications — 50 (48%), in an emergency — 35 (32.9%). The selected groups are representative of the entire retrospective sample according to the Fisher criterion.

The patients were divided into 2 groups: the first group — with tumor localization in the rectum — 36 (34%), the second group — with tumor localization in the left half of the colon — 69 (66%). Adhering to the classification of intestinal obstruction proposed by E. G. Topuzov (1986) [11], according to the severity of intestinal obstruction phenomena, patients were divided as follows: patients with compensated and subcompensated forms of intestinal obstruction — 74 (70.8%), the remaining part — 31 (29.2%) patients — were treated as emergency patients with decompensated intestinal obstruction.

The results and their discussion. For a group of patients with developing (compensated and subcompensated) intestinal obstruction, the following clinical criteria were determined: the patient's

condition was satisfactory or moderate; radiologically, hyperpneumatosis or single levels of fluid in the intestine; constipation or frequent loose stools; bloating; moderate abdominal pain along the colon.

The group of patients with acute (decompensated) intestinal obstruction met the following criteria: the patient's condition is severe; absence of discharge of gases and stools for several days; nausea, repeated vomiting; cramping abdominal pain; positive peritoneal symptoms; radiologically — "Cloiber" bowls.

The modified SAPS scale (Simplifi ed Acute Physiology Score) proposed by Le Gall Jr. was used to assess the patient's condition. and co-author. (1984). The general condition of the patients was assessed by summing up the scores according to 12 indicators of clinical and laboratory studies determined in the first two hours after hospitalization, and was classified as satisfactory, moderate severity and severe. Analysis of the M-SAPS scale data presented in Table.

Assessment of the condition of patients on the M-SAPS scale

The patient's condition at the time of admission (n = 105)	Developing intestinal obstruction (n = 74)	Acute intestinal obstruction (n = 31)
Satisfactory (≤ 6 points)	43(58,1 %)	0
Moderate severity (from 7 to 12 points)	31 (41,8 %)	8 (25,8 %)
Severe (≥ 13 points)	0	23 (74,1 %)

The volume of clinical and diagnostic procedures differed in the groups of patients with acute and emerging intestinal obstruction

Preoperative examination of patients

A group of patients with acute intestinal obstruction	A group of patients with developing intestinal obstruction
The clinical minimum of laboratory research	
Overview radiography of the chest and abdominal organs	
Ultrasound of the abdominal cavity, pelvis	
Assessment of the severity of the condition (modified SAPS scale)	
Emergency surgery	Irrigoscopy
	FCC with biopsy
	FGDS
	Endorectal ultrasound
	CT and/or MRI of the abdominal and pelvic organs
	Urgent or planned surgery

All patients underwent surgery after examination and preoperative preparation.

Preoperative preparation of patients with acute intestinal obstruction consisted in the installation of a nasogastric probe, a urinary catheter, hygienic preparation of the surgical field and emergency correction of hemodynamic disorders.

From the first day, patients with developing intestinal obstruction were prescribed a slagless diet, enteral nutrition, as well as infusion therapy aimed at correcting water-electrolyte disorders. Daily cleansing enemas were used as drainage measures. If necessary, the correction of concomitant pathology was carried out. Preoperative antibiotic prophylaxis of purulent septic complications was performed.

The nature of the performed interventions, depending on the severity of intestinal obstruction in patients with tumor localization in the rectum, is presented in Table.

The dependence of performed surgical interventions on the degree of intestinal obstruction in patients with rectal tumor

Type of operational benefit	Developing intestinal obstruction	Acute intestinal obstruction	Total
The Hartmann Operation	16 (44,5 %)	2 (5,5 %)	18 (50 %)
Anterior rectal resection (PRPC) + preventive colostomy	3 (8,3 %)	0	3 (8,3 %)
PRPC	2 (5,5 %)	0	2 (5,5 %)
Unloading colostomy	2 (5,5 %)	9 (25 %)	11 (30,5 %)
Abdominal-perineal extirpation of the rectum	1 (2,7 %)	21(2,7 %)	2 (5,5 %)
Total	24 (66,6 %)	12 (33,3 %)	36 (100 %)

Most often, Hartmann surgery was performed in patients with developing intestinal obstruction when the tumor was localized in the rectum. The undeniable advantages of this operation are the simultaneous removal of the primary tumor and the elimination of intestinal obstruction; there is also no need to hurry with the second stage of the operation — restoration of intestinal continuity, and when performing it, the surgeon does not worry about the blood supply to the anastomosed areas of the intestine, since vascularization has been time—tested [12].

In 2 (5.5%) patients with a tumor located in the lower ampullary rectum, abdominal intervertebral extirpation of the rectum was performed in cases where the condition of the patients allowed. In 11 (30.5%) patients, surgical intervention was limited to the formation of a double-barrelled discharge colostomy: in some cases, the severity of the patients' condition did not allow for a larger volume of surgery; in some patients, a "injected" tumor was detected. In some patients, the minimum amount of surgery in the form of a double-barrelled colostomy was only the first stage of complex treatment (neoadjuvant chemoradiotherapy). Anterior rectal resection was performed in 4 (11.1%) patients with developing intestinal obstruction.

The nature of interventions depending on the severity of intestinal obstruction in patients with tumor localization in the left flank of the colon is presented in Table.

The dependence of performed surgical interventions on the degree of intestinal obstruction in patients with a tumor of the left flank of the colon

Type of operational benefit	**Emerging intestinal obstruction**	**Acute intestinal obstruction**	**Total**
A Hartmann-type operation	27 (39,1 %)	8 (11,6 %)	35 (50,7 %)
Intestinal resection	6 (8,7 %)	0	6 (8,7 %)
Left-sided hemicolectomy	5 (7,2 %)	0	5 (7,2 %)
Unloading colostomy	8 (11,6 %)	8 (11,6 %)	16 (23,2 %)
Bypass anastomosis	4 (5,8 %)	2 (2,9 %)	6 (8,7 %)
Subtotal colectomy	0	1 (1,4 %)	1 (1,4 %)
Total	50 (72,5 %)	19 (27,5 %)	69 (100 %)

When the primary tumor was localized in the left flank of the colon, Hartmann-type surgery was also performed most often. Various variants of unloading operations (bypass anastomosis or double-barrelled colostomy) were performed in 22 (31.8%) patients.

This amount of surgery was performed based on the severity of the patient's condition and/or the prevalence of the tumor process. Subtotal colectomy with formation of ileorectoanastomosis was performed in 1 (1.4%) patients with acute intestinal obstruction due to destructive changes in the right colon (diastatic tears of the intestinal wall). Colon resection was performed in 11 (15.9%) patients with primary restoration of intestinal continuity.

25 (23.8%) patients had various postoperative complications. The most frequent of them are purulent—inflammatory - 14 (13.3%). It should be noted that the most common complications of this group occurred in emergency patients with acute intestinal obstruction.

In patients with developing intestinal obstruction, we managed to minimize the number of purulent-inflammatory complications by preoperative antibiotic prophylaxis, as well as, in some cases, by prescribing antibacterial drugs with a therapeutic course.

Postoperative intestinal paresis was in second place in terms of the frequency of complications in 7 (6.6%) patients; it was resolved by conservative methods. Anastomosis failure occurred in two patients after left-sided hemicolectomy, which required repeated surgery: separation of the anastomosis and formation of a proximal colostomy. Relaparotomy was also performed in 4 (3.8%) patients: in 1 patient due to inversion of the small intestine, in 1 more case — bleeding from the anastomosis zone and acute gastric ulcer, 2 patients underwent surgery due to early postoperative adhesive intestinal obstruction. In 2 (1.9%) patients, the postoperative period was complicated by dysuric phenomena, which were stopped by conservative measures.

The total mortality rate was 6.6% (7 patients). Mortality in the group of patients with decompensated intestinal obstruction was 4.7% (5 patients). The most common cause of death in 4 (3.8%) patients was increasing cancer intoxication, 1 patient developed diffuse fecal peritonitis against the background of diastatic ruptures of the intestinal wall with decompensated intestinal obstruction, 1 patient died due to pulmonary embolism (PE) and 1 — against the background of decompensation of concomitant somatic pathology in the early postoperative period.

The search for effective methods of intestinal decompression in the complicated course of colorectal cancer has led to different views on the solution of the problem under consideration. A number of authors are inclined to perform multi-stage operations in this pathology [2, 12], others admit the possibility of simultaneous operations with the formation of a primary intestinal anastomosis [13-16]. The ambiguity of the condition of patients with this pathology forces a differentiated approach to each case, taking into account many factors (anamnesis of the disease, age of the patient, objective status at the time of admission to the hospital, the degree of compensation for concomitant pathology, etc.) before deciding on further tactics of surgical treatment. In some cases, the formation of an unloading colostomy aimed at eliminating a life-threatening complication is the only correct solution to the issue of treatment tactics for a patient with acute intestinal obstruction. Minimal surgical intervention significantly reduces the time of postoperative rehabilitation, which is important given the need to use the entire modern complex of diagnostic studies (CT, MRI, etc.), preoperative staging of the oncological process, and the use of neoadjuvant chemoradiotherapy as soon as possible after surgery. Surgeons tried to determine the stage of the oncological process for all patients with developing intestinal obstruction at the preoperative stage, since we consider this to be a prerequisite in solving the issue of the scope of surgical intervention.

In conclusion, the following conclusions can be drawn.

1. The choice of the method of surgical treatment of patients with obstructive cancer of the left colon depends on the location of the tumor, the severity of intestinal obstruction, the stage of the disease, as well as the general condition of the patient.
2. In case of obstructive rectal cancer with the phenomena of developing intestinal obstruction, it is advisable in some cases at the first stage of treatment to form an unloading colostomy or perform drainage measures. This makes it possible to carry out the entire complex of therapeutic and diagnostic measures aimed at more accurate staging, as well as, if necessary, chemoradiotherapy in a neoadjuvant mode before radical surgery.
3. The volume of surgical intervention in decompensated intestinal obstruction, complicating the course of colorectal cancer, depends on the degree of destructive changes in the colon above the tumor and the general condition of the patient. At the same time, in each specific case, an

individual approach should be chosen to decide on the nature of the surgical intervention (obstructive intestinal resection, subtotal colectomy, unloading colostomy, etc.).

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