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STUDY OF MORPHOLOGICAL AND CLINICAL BASES OF ORGAN-PRESERVING SURGERY FOR AMPULAR CANCER OF THE RECTUM

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Abstract

In the last decade, there has been an increase in the incidence of malignant tumors of the rectum (RC) in the world. An incidence of 50 new cases of colorectal cancer per 100,000 population per year indicates a 5% population lifetime risk of developing the diseaseIt is alarming that 100 newly diagnosed malignant neoplasms of the rectum (MNR) account for more than 70 deaths, 40% of them in the first year after diagnosis. In 62.4% of patients, late forms of MNR (stages III-IV) were detected at the first appearance. Surgery alone has shown poor MNR follow-up—five-year survival rates have been consistently low over the last 20–25 years, averaging 52%.

Keywords: Ampullary rectal cancer, organ-preserving surgery in RC, survival, mortality in RC.

The purpose of the study: Improving the quality of life of patients with rectal cancer due to the morphological aspects of organ-preserving surgery.

Materials and methods of research:

Histological, genetic, instrumental, clinical and statistical research methods were used to study the morphological and clinical bases of organ-preserving surgical interventions in ampullar rectal cancer.

During the study period 2005-2015. Clinical and morphological data of 120 patients operated on for cancer of the ampullary rectum stage T3-4N0-1M0 in the Department of oncoproctology in the Republican Specialized Oncological and Radiological Scientific and Practical Medical Center, the Tashkent City Oncological Dispensary and regional oncological dispensaries of the Republic of Uzbekistan.

When studying the distribution of patients by sex and age, it was found that 70 (%) men and 50 (%) women. The age of the patients varied from 21 to 76 years, the average age was 56.5±0.3 years.

According to the volume of the operation performed by the patients, they were conditionally divided into 2 groups: the 1st group - 60% of patients performed a resection of the rectum, and 60% of the patients of the 2nd group - extirpation of the abdominal cavity. In all cases, the operations were performed in the traditional - open way. Preoperative neoadjuvant chemotherapy or radiotherapy was not considered for enrollment in the study and these data were not included in the study.

Therefore, to compare the data of patients in both study groups, their distribution by sex and age was first performed (Table 2.1):

According to this table, the distribution of patients by number and age is proportional in both groups, men have 15-20% more cases of the disease than women. In particular, it was noted that the incidence of MNR occurs in both women and men up to 60% of cases in working age. It should be said that all patients of the 2nd group after rectal extirpation were subjected to a life-long colostomy, which once again proves the relevance of this problem not only in medical but also in social terms.

2.1-table Distribution of patients in the study group by age and gender

age	gender	1-group		2-group	
		Abc.	%	Abc.	%
<45	M	11	18.4	18	30.0
	W	11	18.3	9	15.0
46-60	M	14	23.3	11	18.3
	W	7	11.7	8	13.3
>61	M	9	15.0	7	11.7
	W	8	13.3	7	11.7
Total	M	34	56.7	36	60.0
	W	26	43.3	24	40.0

It should be noted that due to the ease of examination and evaluation compared to other parts of the body, all patients underwent histological verification before surgery. The following results were recorded in each subgroup (Table 2.2).

Analysis of preoperative biopsies showed that adenocarcinoma was detected in 88.3% (106) of patients. Mucinous adenocarcinoma or squamous cell carcinoma was detected in 11.7% of cases. In the 1st group, adenocarcinoma was G2 - 41.7%, and in the 2nd group G1 was confirmed in 36.7% of cases. Poorly differentiated G3 adenocarcinoma was detected in both groups with almost the same frequency - in one out of every 4 patients, that is, in 25.0 and 26.7%, respectively.

One of the factors directly related to the tactics of surgical treatment is the type of macroscopic tumor growth. When studying materials on this subject (Table 2.3), about 50 and 51.7% of patients in the 1st and 2nd groups, respectively, had a mixed type of growth. Exophytic tumors were observed in 23.3% and 25.0%, and endophytic tumors in 26.7% and 23.3% of cases.

2.2-table

Distribution of patients with a malignant tumor of the rectum depending on the histological structure of the malignant tumor, n=120

The form of the histological structure		Patient group				Total			
		Main		Control					
		Абс.	%	Абс.	%	Абс.	%	Абс.	%
Adenocarcinoma	highly differentiated	14	23,3	22	36,7	36	30,0	106	88,3
	Medium differentiated	25	41,7	14	23,3	39	32,5		
	Low differentiated	15	25,0	16	26,7	31	25,8		
	Ring-shaped cells.	1	1,7	4	6,7	5	4,2		
Other forms	Mucinous cancer.	1	1,7	2	3,3	3	2,5	14	11,7
	Squamous cell carcinoma.	1	1,6	1	1,7	2	1,7		
	undifferentiated cancer.	3	5,0	1	1,6	4	3,3		
Total		60	100	60	100	120	100	120	100

When conducting rectoscopic studies, the exact localization of a dangerous tumor process and its duration were established (Table 2.4). As can be seen from the table, it was found that the distal location of the dangerous tumor was higher in the patients we examined. In 58 (48.3%) patients with MNR, the malignancy was limited to the anal canal on retroscopies. In 50 (41.7%) patients, a dangerous tumor process was

detected at a distance of 5-9 cm from the anus, and at a distance of 10 cm from the anus and further from the anus in 12 (10%) patients.

2.3-table

Distribution of patients with a malignant tumor of the rectum depending on the macroscopic nature of the growth of a malignant tumor, n=120

Growth type	Group of patients				Total	
	Main		Control			
	Abc.	%	Abc.	%	Abc.	%
Exophyte	14	23,3	15	25,0	29	24,1
Endophyte	16	26,7	14	23,3	30	25,0
Mixed	30	50,0	31	51,7	61	50,9
Total	60	100	60	100	120	100

2.4-table

Location of a dangerous tumor process relative to the location of the anus, n=120

The location of the tumor.	Group of patients				Total:	
	Main		Control			
	Abc.	%	Abc.	%	Abc.	%
In the anal canal (in the anus up to 3-4 cm).	28	46,7	30	50,0	58	48,3
In the anus by 5-9 cm.	26	43,3	24	40,0	50	41,7
In the anus by 10 cm or more.	6	10,0	6	10,0	12	10,0
Total:	60	100	60	100	120	100

The TNM system (2008, 8th edition) was used to estimate the prevalence of the disease. It follows from the table that stage IIa of the disease was detected in 18 (30.9%) patients, stage IIb - in 32 (19.1%) patients, stage IIIb - in 70 (50.0%) patients. At the same time, 32 (26.7%) patients had a local spread of the malignant tumor process (T3-4N0-1M0).

The study of the history data of patients with MNR showed that the duration of the disease was 3 months. in 17 (14.2%) patients, 6 months. in 42 (35%), up to 1 year in 36 (30%) patients, 13 (10.8%) had a period of up to 2 years, and 12 (10.0%) - up to 3 years (Table 2.5).

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2.5-table

Description of anamnestic data in patients with a malignant tumor of the rectum, n=120

Medical history	Group of patients				Total:	
	Main		Control			
	Абс.	%	Абс.	%	Абс.	%
Up to 3 months	3	5,0	6	10,0	17	14,2
Up to 6 months	14	23,3	12	20,0	42	35,0
Up to 1 year	19	31,7	26	43,3	36	30,0
Up to 2 years	17	28,3	14	23,4	13	10,8
Up to 3 years	7	11,7	2	3,3	12	10,0
Total:	60	100	60	100	120	100

This subjective indicator indicates the presence of widespread clinical MNR, as evidenced by a three- and six-month history in almost half of the patients (44.1%). The study of the histological structure of the malignant tumor showed that 106 (88.3%) patients had widespread adenocarcinoma. Moderately differentiated adenocarcinoma in patients with MNR was detected in 39 (32.5%) patients, poorly differentiated adenocarcinoma — in 31 (25.8%), highly differentiated adenocarcinoma — in 36 (30.0%). Annular adenocarcinoma was diagnosed in 5 (4.2%) patients. Other histological forms of malignant tumors were found in 9 (7.5%) patients.

2.6-table

Distribution of patients with malignant tumors of the rectum according to the TNM system and stage of the disease, n=120.

Stage	TNM	Group of patients				Total:	
		Main		Control			
		Abc.	%	Abc.	%	Abc.	%
IIa	$T_3N_0M_0$	10	16,7	8	13,3	18	15,0
IIb	$T_4N_0M_0$	16	26,7	16	26,7	32	26,7
IIIb	$T_3N_1M_0$	18	30,0	20	33,3	38	31,7
	$T_4N_1M_0$	16	26,6	16	26,7	32	26,6
Total:		60	100	60	100	120	100

The study of the distribution of patients with MNR, depending on the macroscopic patterns of growth of a malignant tumor, made it possible to determine the occurrence of the mixed form in the largest number. Endophytic and exophytic forms of growth of malignant tumors were found in approximately the same number of patients - 30 (25.0%) and 29 (24.2%) patients, respectively.

Analysis of concomitant pathology in patients with MNR showed that the largest number of patients with hepatocholecystitis - 23 (24.7%) patients, coronary heart disease - 19 (20.4%) patients, chronic bronchitis (asthma) - 15 (16.1%) patients , as well as in the form of chronic gastroduodenitis - in 12 (13.0%) patients. Other types of comorbidities were identified in 24 (25.8%) patients.

It should be noted that comorbidities were more common in patients in the control group than in the main group - 56 (60.2%) and 37 (39.8%), respectively. We took this situation into account when planning surgical treatment. In addition to the features of dangerous tumor growth, a contraindication to sphincter-preserving surgical interventions may be the presence of severe concomitant pathology.

2.7-table Concomitant diseases in patients with rectal cancer, n=120.

Concomitant diseases	Group of patients				Total:	
	Main, n=60		Control, n=60			
	Абс.	%	Абс.	%	Абс.	%
Chronic hepatocholecystitis	8	8,6	15	16,1	23	24,7
Ischemic heart disease	11	11,8	8	8,6	19	20,4
Asthma	7	7,5	8	8,6	15	16,1
Chronic gastroduodenitis	6	6,5	6	6,5	12	13,0
Hypertonic disease	2	2,1	7	7,6	9	9,7
Cholelithiasis	1	1,1	3	3,3	4	4,4
Diabetes	1	1,1	2	2,1	3	3,2
Rheumatism	–	–	2	2,1	2	2,1
General atherosclerosis	1	1,1	1	1,1	2	2,2
Ulcer 12 duodenal ulcer	–	–	2	2,1	2	2,1
Ovarian cyst	–	–	2	2,1	2	2,1
Total:	37	39,8	56	60,2	93	100

When diagnosing the underlying disease, all patients underwent a complex of clinical and instrumental examinations, which included rectoscopy, irrigography with secondary contrast, x-ray examination of the abdominal organs, ultrasound diagnostics of the pelvic organs, transrectal ultrasound, methods of computed tomography.

Results and its Discussion:

For the treatment of patients with RC, we have used surgical, chemotherapy and radiation therapy. Let's focus on surgical treatment. Currently, there are no other methods that could replace surgery in the treatment of MNR. Therefore, increasing the ablasticity and antiblastism of surgical intervention, choosing and improving the size of resection and the method of surgical operation are the primary tasks facing every surgeon, oncologist, coloproctologist involved in the treatment of malignant neoplasms of the colon.

A day before the operation, a solution of the original composition based on high molecular weight polyethylene glycols is used. Solution for lavage (Fortrans) is prescribed 8-20 hours before surgery as a voluntary drug. The patient independently takes from 200 ml to 3 liters of lavage solution with an interval of 20-30 seconds. Bowel emptying is carried out by frequent defecation. The method allows you to empty not only the large intestine, but also the small intestine.

There is no need to reduce the vital activity of the intestinal microflora in preparation for radical surgical interventions for MNR. In the preoperative period, antibiotics were prescribed only in the presence of clinical manifestations of perfocal inflammation.

The main group of patients underwent various types of organ-preserving operations, including abdomino-anal-rectal resection (AR), anterior rectal resection (AR rectum), Hartmann's operation.

In the control group, a radical operation was performed - abdominal-intermediate extirpation of the rectum, in which all closed apparatuses of the rectum were removed. When a malignant tumor is removed as a result of mechanical damage, the dissemination of malignant tumor cells occurs predominantly by lymphogenous and hematogenous pathways; in the presence of perfocal inflammation and microflora, we carried out complex measures aimed at preventing inflammation complications, tk. as well as relapses and metastases.

1) A therapeutic dose of a third-generation cephalosporin was administered intravenously the day before surgery.

2) A layer-by-layer separation of the anterior abdominal wall was performed, then a subcutaneous fat lump, a gauze swab and a careful delimitation of the abdominal cavity from the pelvic cavity with special napkins.

3) Ligation and transection of the feeding vessels, as well as the intestines, were performed 12-15 cm above the dangerous tumor before the mobilization of the rectum.

4) Before mobilization, when suturing the rectum from the intermediate side and during anterior resection, if possible, the intestine can be connected with a thread below the dangerous tumor.
5) Acute mobilization of the rectum. Abdominoanal resection or abdomino-intermediate resection of the PC was performed simultaneously by two teams of surgeons.
6) During sphincter-preserving surgery, the drug was removed along with the interstitial wound.
7) Careful hemostasis, change of underwear and gloves after long stages of the operation.
8) Rinse the pelvic cavity with an antiseptic solution.
9) Wash the laparotomic wound with an antiseptic solution during its layer-by-layer suturing.
10) Fractional lavage of the pelvic cavity in the postoperative period in patients who underwent abdomino-anal and abdomino-intermediate resection of the rectum.
Description of the surgery
When planning the surgical treatment of patients with MNR, the histological structure of the malignant tumor, the height of its location, the degree of prevalence of the process, as well as the presence of complications associated with the general and malignant tumors were taken into account. The types of surgical interventions performed in patients with a malignant tumor of the rectum are presented in the table.

Table 3.1 Types of surgical interventions performed in patients with a malignant tumor of the rectum n=120.

№	Type of operation	Group of patients				Total:	
		Main		Control			
		Abc.	%	Abc.	%	Abc.	%
1.	Anterior resection of the rectum with anastomosis	12	20,0	–	–	12	10,0
2.	Abdominal resection of the rectum with removal of the descending colon into the anal canal	14	23,3	–	–	14	11,7
3.	Abdominal resection of the rectum with the removal of the sigmoid colon into the anal canal	25	41,7	–	–	25	20,8
4.	Abdominal resection of the rectum with removal of the colostomy	6	10,0	–	–	6	5,0
5.	Operation like Hartmann	3	5,0	–	–	3	2,5
6.	Abdominal extirpation of the rectum with the formation of a sigmostoma	–	–	60	100	60	50,0
Total:		60	100	60	100	120	100

In the main group, the following types of surgical interventions were performed: direct resection of the rectum - 12 (20.0%) patients with anastomosis, abdominal-anal resection of the rectum - 14 patients (23.3%), with insertion of the sigmoid colon into the anal canal. in 25 (41.7%) patients, with colostomy in 6 (10.0%) patients and Hartmann's operation in 3 (5.0%) patients. All 60 patients in the control group underwent abdomino-intermediate rectal extirpation with sigmostoma placement.

According to a large number of oncoproctologists, the method of choice in the treatment of malignant neoplasms of the upper ampullar and rectosigmoid sections of the rectum is anterior rectal (rectum) resection.

We cannot agree with the newly widespread opinion that abdominal rectal extraction is the most radical operation in patients with malignant tumors of this localization. Currently, it is not supported from an oncological point of view, as well as from the point of view of the prospects for social and labor rehabilitation. According to our data, in more than half of patients with MNR, the malignant tumor is located outside the zone of the rectal closure apparatus, and hence it follows that most of the large number of observations showed that there will be conditions under which the principles of radicalism. A contraindication is abdomino-anal resection of the rectum with the introduction of the transverse intestine into the anal canal, perifocal inflammation with the formation of abscesses of a malignant tumor of the middle ampulla, complications of a perforated ulcer in the anal canal.

Performing surgical interventions for rectosigmoid and upper ampullar malignant neoplasms of the rectosigmoid and upper ampullar parts of the rectum without complications does not cause technical difficulties, and the ability to visualize the level of local and lymphogenous spread of a malignant tumor during full-fledged surgical interventions allows you to fully follow the principles of oncological radicalism (prearterial venous ligation of the nucleus, removal of a dangerous tumor only by sharp means, as little contact with a dangerous tumor as possible, i.e. surgery"

When a malignant tumor is located at the level of the pelvic peritoneum, the peritoneum exits in a lyre-shaped incision into the presacral region, and the rectum is attached to the pararectal cell in a single fascial-case capsule 5-6 cm below the malignant tumor. At this level, the fascial capsule of the rectum is opened and the intestinal wall is released from the pararectal clamp. in which the pararectal catheter is brought closer to the tumor and removed in a single block. It should be noted that only complete and adequate mobilization of the distal malignant tumor at least 5-6 cm from the pararectal tube and removal of the distal malignant tumor is considered an important factor for obtaining extraintestinal recurrences (from pararectal lymph nodes).

Еще одним важным фактором профилактики локорегионарных рецидивов is a complete lymph node dissection of the main channels of the lymph flow. attention should be paid to the fact that the main ways of outflow of lymph from a malignant tumor in these parts of the rectum pass through the upper rectal vessels, the rectal vessels should be tied up in places of their displacement from the lower rectal arteries (or from the sigmoid artery) and removed together with a malignant tumor as a single block. If an increase in lymph nodes is detected along the course of the inferior jugular artery, the jugular artery is ligated at the sites of its displacement from the aorta.

The blood supply to the rest of the sigmoid colon is provided by the Riolan arc. In case of failure of the blood supply to the sigmoid colon, a transverse anastomosis is formed with the mobilization of the left flank of the scrotum. When performing resection through the abdominal cavity (in front), an interintestinal anastomosis (sigmarectal or transversorectal) is formed according to the method of execution (double-row cauterization) when using the AKA-2 sealing apparatus for applying compression anastomoses.

When performing a direct resection of the rectum, it is necessary to retreat from the lower part of the dangerous tumor to the site of at least 5 cm, and the sutures - 12-15 cm from the pole. After removal of the damaged segment of the rectum and partially sigmoid colon, an end-to-end colorectal anastomosis is formed. With previous "upper" resections, a two- or one-row anastomosis is usually formed using anastomotic sutures with a non-traumatic needle. with anterior "low" resections, it is convenient to release the anastomosis with the help of caulking. The Autosuture and Ethicon devices are very reliable. Using the double-staple anastomosis technique, which consists of suturing the rectum with a linear device, and then applying an end-to-end colorectal anastomosis with a circular stapler, positioning the anastomosis 1-2 cm above the dentate line, a low anterior resection can be easily performed. Regardless of the method of formation of the anastomosis, its integrity is checked by inflating the intestine with air.

Conclusion:

The results of organ-preserving surgical interventions in the complex treatment of MNR were observed after 3 and 5 years of treatment. We analyzed relapses of the disease, the occurrence of metastases depending on prognostic factors, and assessed the survival of patients after three and five years.

During three years of follow-up, local recurrences were observed in 10 (16.6%) patients with MNR in the main group and in 13 (21.7%) patients in the control group. Relapses developed with follow-up periods ranging from 6 to 27 months. The average

duration of relapses was 11.8±2.4 months. The results of a univariate analysis showed that the number of relapses at a three-year period in patients with MNR was higher in 13 patients (21.7%) who underwent organ-preserving surgery after abdomino-intermediate rectal extraction, compared with 10 (16.6%) patients.

The analysis of postoperative complications in the general description showed that their number does not depend on the type of surgical intervention. A sufficiently large clinical material shows the possibility of organ-preserving operations in patients with lower ampullar malignant tumor of the rectum. It should also be noted that for patients with stage T3-4N0-1M0 of a malignant tumor of the rectum, it is proposed to introduce organ-preserving surgical interventions into the work of oncological medical institutions, which will significantly improve the quality of life of this category of patients, their social and labor rehabilitation, with overall and relapse-free survival. does not get worse.

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