ХИМИЧЕСКИЕ НАУКИ

COMPARATIVE ANALYSIS OF CLOSE OUTCOMES OF TOTAL MESORECTAL EXCISION (TME) IN MALIGNANT DERIVATIVES

Azimov E.H.
(AMU, I Department of Surgical Diseases,Azerbaijan, Baku)

ABSTRACT. Laparoscopic total mesorectal excision (TME) in malignant masses of rectum with different localization is going spread widely over the world. But, the final point was not put to the issue of open or laparoscopic operations. At present, close results of laparoscopic and open TME are analyzed in research work.

Key words: laparoscopic TME, open TME, duration of operation, intraoperative blood lost, first defecation, drug analgesics.

Material and methods of research. Clinical materials of state medical institution (Clinical Medical Centre) and private medical centre (Elmed medical centre) were used in research work. 47 of 103 patients with the diagnosis of cancer of rectum were included in laparoscopic group, 56 of them were included in open group. Patients underwent to general clinical examinations, MRT of pelvis, CT examination of chest and abdomen, colonoscopy (biopsy), CEA, determination of C19-9 tumor markers, etc.

Result and discussion of research. The continuation period of operations was expressed with high figures in patients included in laparoscopic group during our comparative analysis (330±60 minutes and 275±35 minutes). Laparoscopic technology preferred to open operations in other images. The quantity of blood lost during operation was 245±135ml in laparoscopic group, 340±145ml in open group, need for narcotic analgesics was 66.5±1.8mg in laparoscopic group, 115.4±2.4mg in open group, commencement period of intestinal peristalsis was 32.8±1.5 hours in laparoscopic group, 61.2±1.8 hours in open group, enteral nutrition was 47.5±2.4 hours in laparoscopic group, 69.7±3.8 hours in open group, the first defecation was 4.7±1.1 days in laparoscopic group, 5.9±1.3 days in open group, total days for staying in stationary and postoperative ward days were 18.5±4.7 days in laparoscopic group, 22.4±5.6 days and 13.14±4.2 days in open group.

Introduction. Nowadays, mortality from flat bowel cancer has a specific weight among oncological diseases [1, 2, 3]. Patients with flat bowel cancer are rising in the world, including our country. Every year, 400,000 people die of progressive pancreatic cancer [9, 10]. The main cause of death from such localized cancers is the late treatment of patients, the complaints of the flat bowel as other non-oncological illnesses, inadequate treatment tactics, and the difficulty with the complexity of the anatomical location of the small bowl [4,7,11]. Despite the fact that the main treatment is surgical, the multidisciplinary approach plays an indispensable role in the long-term non-recurrent survival. The problem of laparoscopic or open execution of operations in the abnormal derivatives with different localizations has not yet been resolved. Although a group of researchers have noted that laparoscopic technology can be successfully applied in all localized and phased cancers, other authors believe this approach is appropriate and may be considered appropriate for laparoscopic TME in a selected patients [5,7,8]. There are studies shown that laparoscopic TME is not feasible in patients with low abnormal localization and anatomic narrow bowl. The authors note that in such cases it is more expedient to continue the operations openly because of the possible violation of oncological principles. We believe that laparoscopic technology can be used successfully in all selected localized patients to administer TME [1,5,9]. In the present study, we have compared the results of laparoscopic and open TME in T1- 4 derivatives of the flat bowel.

Material and Methods of Research. The study was conducted at clinical medical center (I Department of Surgical Diseases) which is a base of Azerbaijan Medical University and at private Elmed Medical Center, according to the examination and treatment of 103 patients diagnosed with various localization malignant lesions of the flat bowel in 2010-2015. In the study, the use of laparoscopic technology in the lower frontal resection of the flat bowel has been shown, and the advantages of the traditional method are described.

Patients were divided into 2 groups. 1) Laparoscopic group - 47 patients, 2) open group 56 patients. When analyzing patients, their age and sex, stage and localization of the disease, histological structure of the fog, neodymium treatment schemes were taken into account. General clinical examinations on patients, general analysis of blood and urine, CEA and CA 19-9 determination, chest radiograph, ECG, ECC, MRI of small bowel, CT scan of the abdomen and breast, colonoscopy and other examinations were performed. According to the results of the examination, the stage of the disease was determined and an adequate treatment scheme was developed in a multidisciplinary way. The age of the patients ranged from 20 to 70, 57 of them (55.3%) were female and 46 (44.7%) were male. Comparative analysis of near-term results including the amount of intraocular lungs, duration of operations, the need for narcotic anesthetics, the duration of intestinal peristalticos, the duration of initial defecation, duration of stay in the hospital, and number of days in the laparoscopic and open TME groups have been carried out. The distribution of patients according to age and sex, the localization of the fetus, the depth of the invasion, the stage of the disease and the morphological structure of the skin are described below.

Table 1.
Distribution of patients according to age and sex

Age	LTME n=47				ATME n=56			
	man	woman	man	woman	man	woman	man	woman
	M	M	%	%	M	M	%	%
20-29	1	-	5	-	-	1	-	3.3
30-39	2	1	10	3.7	1	2	7.7	21
40-49	4	5	20	18.5	2	6	26.9	32.13
50-59	5	7	25	25.9	7	9	48.55	33.3
60-69	7	11	35	40.7	13	10	11.5	6.7
70>	1	3	5	11.2	3	2	5.35	3.57
Total	20	27	100	100	26	30	100	100

The distribution of illnesses is shown in Table 2. Most of the patients were diagnosed with 2 and more diseases. There was no statistical difference between groups on frequency of illnesses. It should be noted that the illness also affected the choice of the surgical treatment method. Laparoscopic technology has not been used in patients with cardiovascular insufficiency.

Table 2.
Disease distributions according to character and frequency of illnesses

Close illnesses	LTME n=47		ATME n=56	
	M	%	M	%
Atelosklerosis	13	27.6	16	28.5
Ischemic heart disease	3	638	4	7.14
Hypertensive disease	10	21.2	12	21.4
Neurosurgical distension	4	8.51	3	5.35
Chronic disease of the lungs	9	19.1	11	19.6
Stomach 12bb diseases	5	10.6	6	10.7
Gallstone disease	1	2.12	1	1.78
Kidney disease	3	6.38	2	3.57
Fibromioma of uterus	3	6.38	3	5.35
Cyst of the ovary	7	14.8	6	10.7
Diabetes	5	10.6	7	12.5
1-2 degrees of obesity	3	6.38	2	3.57
Chronic hepatic disease	4	8.51	3	5.35

We divided the bowel anatomically into three parts: smaller bowel (0-6m), moderate flat bowel (7-12cm) upper right bowel (125m>).

Table 3.
Localization of malignant neoplasms of the flat bowel according to the distance from the anal canal

Distance from the anal canal	LTME N=47		ATME N=56	
	M	%	M	%
0-6sm	13	27.7	16	28.6
7-12sm	18	38.3	22	39.3
>12sm	16	34.0	18	32.1
Total	47	100	56	100

The distribution of patients in laparoscopic TME (LTME) and open TME (ATME) groups, depending on the invasion depth of flat gut tumors, was as follows. 5 patients with T1 stage, 21 patients with T2 stage, 65 patients with T3 stage, and 12 patients with T4 stage.

Table 4.
Distribution of patients according to the depth of invasion on both groups

The depth of invasion	LTME n=47		ATME n=56	
	M	%	M	%
T_1	3	6.38	2	3.6
T_2	11	23.4	10	17.8
T_3	29	61.72	36	64.3
T_4	4	8.5	8	14.3
Total	47	100	56	100

Distribution of patients by stages (both groups) is shown in Table 5.

Table 5.
Distribution of patients at LTME and ATME according to the stages

Stages	LTME n=47		ATME n=56	
	M	%	M	%
I	7	14.8	5	8.9
II	12	25.5	16	28.6
III	28	59.7	35	62.5
Total	47	100	56	100

Note: When facing TNM classification in stages: Phase I - T1-2N0M0, II stage T3-4N0M0, III stage T1-4N1-2M0. Patients with remote metastases (M1) were not included in the study. In addition to the classical steps listed in Table 6, we considered it appropriate to classify T3 and T4 patients in a separate subgroup.

During the pathologic examination of extracted surgical materials, adenocarcinoma with differential differentiation was found in most cases.

Table 6.
Morphological structure of flat bowel cancer in LTME and ATME groups

Morphological features of the tumor	LTME n=47		ATME n=56	
	M	%	M	%
Adenocarcinoma				
High differentiation	13	27.6	16	28.5
Moderate differentiation	27	57.5	31	55.44
Low differentiation	5	10.66	7	12.5
Colloid cancer	1	2.12	1	1.78
Spindle-shaped cell cancer	1	2.12	1	1.78
Total	47	100	56	100

Typically 4 troacar holes were used during laparoscopic surgery. A 10-foot troacar (for the camera) is located on the right side of the abdomen along the right front of the thoracic tachacar (5) and ten (12) trocar, 5 in the left hip.

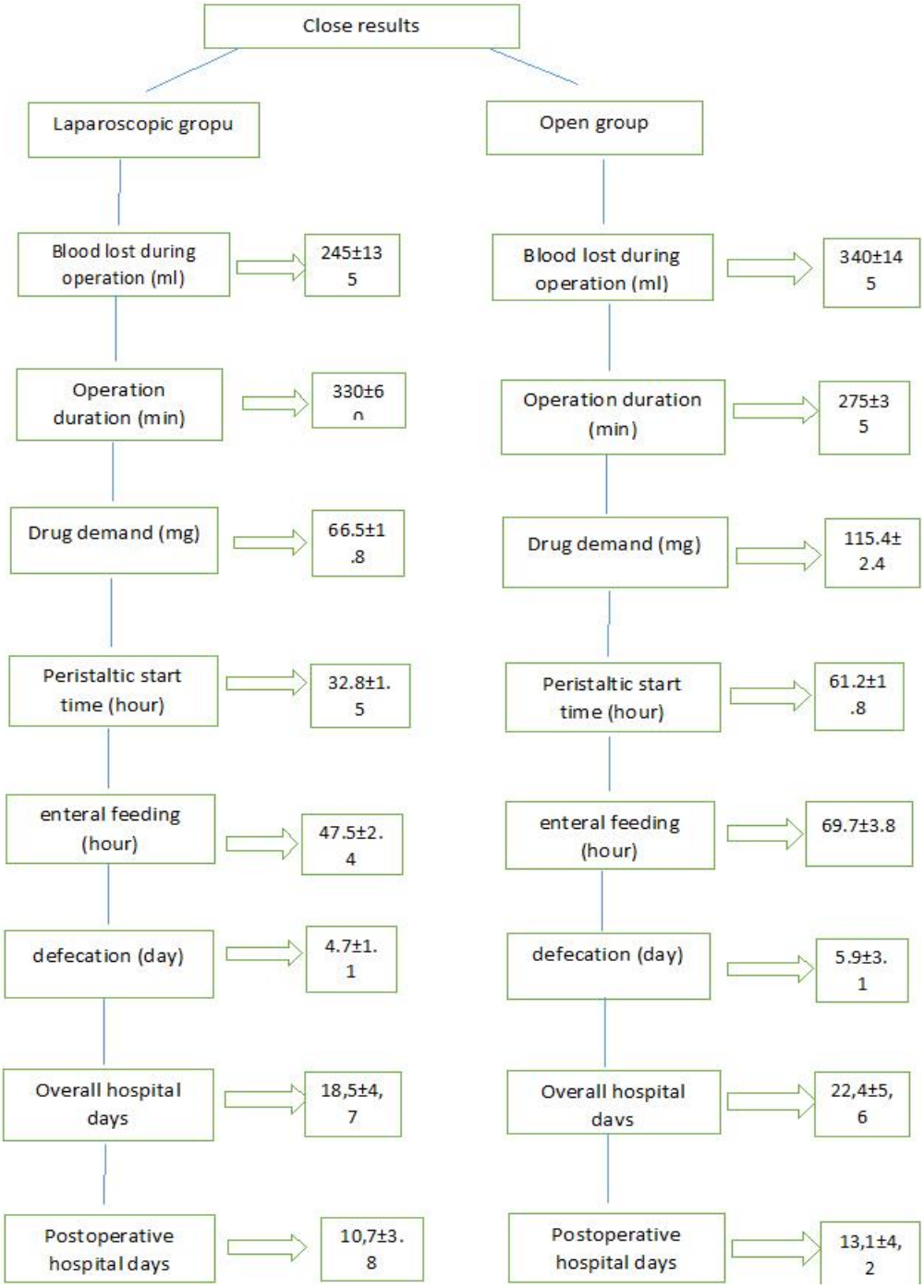
In all cases, anastomoses, staplers, and intestinal fragment were removed by Pfanstill cut. In the open surgery, the abdominal cavity was opened with the middle cut and the anastomoses were stacked.

Discussion of the study and the outcome. The results of the study were assessed and analyzed according to clinical observations, instrumental and laboratory findings. In patients with I stage-positive bowel cancer diagnosis, radiochemotherapy was performed before surgery, however, patients with I and III stage cancer, short and long radiotherapy courses were administered later (7-10 days for short radiotherapy patients, 6-8 weeks for long radiotherapy) then total mezorectal excision was performed. Clearly, in the laparoscopic TME, attention was paid to the integrity of the mesorectum, and the TME sequence was controlled during dissection. During the operation, the intensity of blood flowing into the abdominal cavity was considered and the duration of the operation was recorded after insertion of the trophies. The end of the operation was accepted as the moment when penevmopressometry ended. The amount of blood lost during the operation was evaluated on the scale of the absorbed fluid in the abdominal cavity, based on the weights of the abdomen (the abdominal cavity). The volume was calculated using the m = pv formula (p = 1.050-1.060q / cm3). The peristaltic start time was evaluated based on the follow-up of intestinal noises and the disposal of gases. During enteral feeding, the intestinal peristaltication time was used.

The results revealed that statistically significant differences were observed in comparative analysis of laparoscopic and open-group intraoperative bleeding in patients undergoing observation. This difference was observed both within the group and among the groups. The reason for difference within group is likely to be related to the new learning time (2010-2012) of the

TME method. The difference between the groups was favored by the laparoscopic group (245 ± 135 and 340 ± 145 ml), it can be explained with a high degree of caution (such as bleeding can create a conventional risk), and the laparoscope's camera's ability to dissect delicate anatomical structures. The fear of bleeding in the surgeon stimulates the tactile use energy devices more effectively (scheme 1).

Comparison of the duration of operations between the two groups has shown this indicator is greater in laparoscopic group (330 ± 60 min in the laparoscopic group and 275 ± 35 minutes in the open group). This difference has shown itself in minimum and maximum numbers. 390 minutes have been spent in the laparoscopic group and 270 minutes in the open group at maximum. These differences are most commonly reflected in the first years of implementation laparoscopic technology. Over the years, as clinical practice increases, these differences have declined, the length of operations has been reduced, and the amount of blood lost in the operation has fallen to the minimum. So that, in 2010-2012, the average blood lost during operation was 315 ± 65 ml in the laparoscopic group, compared to 195.5 ± 85.5ml in 2013-2015. The duration of operations was 325.5 ± 64.5 minutes in 2010-2012, while in 2013-2015 it was 315.5 ± 66 minutes.



Scheme 1.Comparative study of close outcomes in both groups

These differences were not statistically significant (P = 0.752). Drug anesthetics were used to reduce pain syndrome after surgery. The need for drug analgesics in the laparoscopic group was 72.5 ± 12.5 mg and in the open group 120 ± 30 mg. As you can see, the differences are statistically straightforward. The presence of a large middle cut on the abdominal wall, the construction of this cutter with sewing materials, including the use of extensions in surgical interventions (this sometimes takes 4-6 hours) and the open exposure of all stages of the operation causes severe pain in the postoperative period, at this time there is a need to use high doses of drug analgesics. Laparoscopic surgeries did not result in pain in the absence of a wide wound healing and as operations were performed by small holes, leaving the straight intestinal fragment out of the small Pfanchyl cut, resulting in low pain in the postoperative period, and therefore the need for narcotic analgesics. When compared to the results, pain syndrome was studied comparatively with the visual-analog scale (10 points scale). The pain syndrome in the laparoscopic group was 3.8 points on Day 1, 3 points on Day 2, 2.5 points on Day 3, 2 points on Day 4, 1.8 points on Day 5, and 1.5 on Day 6. The same indicator was 6.5 points on the first day, 6.2 points on 2nd day, 5.4 points on 3rd day, 4.3 points on forth day, 3.6 points on the fifth and 3 on the 6th day for the open group. The difference between the two groups was statistically honest. As the pain syndrome in the laparoscopic group was less than twice the open group on the visual analogue scale, the need for narcotic analgesics in this group dropped by about two times (120 ± 30 and 72.5 ± 12.5). In the laparoscopic group, the intestines recovered more quickly after surgery, and the postoperative rehabilitation period was short. In patients undergoing laparoscopic technology, the intestines started to peristaltic movements at 32.8 ± 1.5 hours, whereas in the open group this figure was 61.2 ± 1.8 hours. The difference between the figures was statistically honest. The low intensity of pain in the postoperative period has led to the normal return of intestinal activity to the normal course of life in a short period of time. When compared to the WHO-ECOCH system, lifetime of patients was found to be more satisfactory in the laparoscopic group in the first 6 days postoperatively. Physical activity was lower in both groups of patients on the first day after surgery, according to evaluation by 4 points system. Physical activity in the laparoscopic group on the 2nd day after surgery was 3.7 points and 3.9 points in the open group. For the third day this score was 2.6 points and 3.6 points respectively, and physical activity was 2.5 and 3.0, 1.8 and 2.1, 1.6 and 2.0 points. During the first 2 days after following surgery, there were not almost self-service in both groups (4 points). From the third day, 13 of the patients started to serve themselves (28.6%) in the laparoscopic group, 27 (57.4%) on the fourth day, 41 (87.2%) in the fourth and 45 (95.7%) days on the sixth day. The patients who were included in the open group had a difficult time during the first three days. They could hardly serve them. During the fourth day after the surgery, 16 (28.5%) patients, 34 patients (60.7%) in the fifth day, and 42 (75%) in the 6th day were fully able to serve themselves. In other patients, self-service was either low or not. The figures were statistically honest. The quicker activation of patients included in the laparoscopic group and the accelerated normalization of bowel activity have also had an impact on enteral nutrition. In the laparoscopic group, enteral feeding started after 47.5 ± 2.4 hours. The first defecation in this group was observed in the fourth, fifth day (sometimes in the third day). In patients included in the open group enteral nutrition started after 69.7 ± 3.8 hours and the first defecation was during 5.9 ± 1.3 days. Days of postoperative hospital and days of general hospital stay were studied comparatively in both groups. The total and postoperative days of the patients included in the laparoscopic group were 18.5 ± 4.7 days and 10.7 ± 3.8 days; 22.4 ± 5.6 days and 13.1 ± 4.2 days in the open group respectively. Thus, in the comparative analysis of the close results, it is clear that there is a statistically significant difference between the relevant indicators in laparoscopic and open groups. Although the duration of operations was high in the laparoscopic group, significant differences were observed in the amount of intraoperative blood loss, first defecation, enteral nutrition, intensity of pain syndrome, occurrence of peristaltic activity of the intestines, and number of days in hospital between the open group and laparoscopic group.

Results

1. The duration of operations in the laparoscopic group compared to the open group express itself at high figures (330 ± 60 min and 25 ± 35 min respectively).
2. The amount of blood lost in the operations was relatively small in the laparoscopic group (245 ± 135 ml and 340 ± 145 ml) in comparison with open group during our study.
3. The need for narcotic analgesics in the laparoscopic group was less than the open group (66.5 ± 1.8 mg and 115.4 ± 2.4 mg).
4. Enteral nutrition was relatively fast in the laparoscopic group (47.5 ± 2.4 hours and 61.2 ± 1.8 hours). The first defecation was recorded in the laparoscopic group during 4.7 ± 1.1 days, and in the open group - 5.9 ± 1.3 days.
5. The total hospital stay and postoperative days were 18.5 ± 4.7 days and 10.7 ± 13.8 days in the laparoscopic group and 22.4 ± 5.6 days and 13.1 ± 4.2 days in the open group respectively.

List of literature

1. Azimov E.H., Gadirova E.M. Criteria for assesing the Extent of tumor regression Malignant umors of the recum. Medical chemistry, LOS Angeles. 7(8), 2017, p 235-238.
2. Azimov E.H., Gadirova E.M. Pathohistological assessment of the circular margin of resection during total mesorectal excision, counducted on he maliginant formaions of the rectum. İnternational Journal of Research Studies in Science, Engineering and Technology. İndia 2017, y.4. issue 5, p.17-22.
3. Azimov E.H. The comparative analysis of the remote results at the patients to whom has been carried out a total mesorectal excision concerning malignant tumors of a rectum. East European Science Journal (Warszawa, Polska), 2017, vol 1. P.42-47.

4. Azimov E.H. Comparative studyng of circumferential resection margin in different methods of total mesorectal excision and their influence on the remote resuls of paients trcatment Science of Europe (Praha, Grech Republic), vol 1. N16(16) 2017. P.16-22.

5. Azimov E.H. The study of the latter 's superiority in the spread of cancer of the lumbar spine and void of neoaduvent therapy. Eurasian Oncologist Magazine. 2017, E5, T4, P. 494-504.

6. Azimov E.H, Namazov A.E, Comparative characteristic of the outcome of the outbreak and secondary edema at the occurrence of acne inflammation. Seminal medicine (Ukrainian Association of Seminal Medicine) 3 (17), 2017. P. 151-157.

7. Azimov E.H. Study of the quality in Abnormal Derivatives of the rectum. World J. Surg.2018, 42, P.29.

8. Lonshchinin K.V. Comparative evaluation of laparoscopic and traditions of rectum anterior anterior resections for cancer. Dis Kong. honey. sciences. Moscow 2005.

9. Krovtsenko A.Yu. Results of preservation in the nervous system of the nervous system in surgery of rectal cancer. Dis Kong. honey. sciences. Moscow 2011.

10. Sidorov D.V. the role of total mesorectum ectomy in the surgical and combined treatment of patients with colon cancer. Dis Kong. honey. sciences. Moscow 2011.

11. Nevolkikh A.A. Modern approaches to the treatment of ball resectable rectal cancers. Dis Kong. honey. sciences. Moscow 2011.