



MODERN APPROACHES TO ORGAN-CONSERVING OPERATIONS FOR AMPULLARY RECTAL CANCER.

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Article history:	Abstract:
Received: September 24 th 2023 Accepted: October 20 th 2023 Published: November 28 th 2023	Today, the unsatisfactory results of organ-preserving surgical interventions for a malignant tumor of the rectal ampulla depend on the morphological characteristics of the cancer; indications for organ-preserving operations are substantiated based on the level of the morphological structure of the rectal-ampulla part of the cancer.

Keywords: Malignant rectal cancer, organ-preserving surgery.

A number of scientific studies are being conducted all over the world to optimize the morphological and clinical basis for performing organ-preserving surgical interventions for ampullary rectal cancer. In this regard, of particular importance are scientific studies aimed at developing the morphological basis of unsatisfactory results of organ-preserving surgical interventions for cancer of the ampullary rectum, instructions for performing organ-preserving surgical interventions for malignant tumors of the ampullary rectum, taking into account morphological features, performing organ-preserving surgical interventions for cancer of the ampullary rectum with varying degrees of differentiation. In our country, certain measures are being implemented aimed at adapting the medical system to the requirements of world standards, including the implementation of targeted measures for pathological conditions that occur in men. In this regard, in accordance with the seven priority directions of the development strategy of New Uzbekistan for 2022-2026, in order to raise the level of medical care for the population to a new level, such tasks as "... increasing the quality of providing qualified services to the population in primary health care services..." Based on these tasks, it is advisable to conduct research to optimize the morphological and clinical basis of organ-preserving surgical interventions for ampullary rectal cancer. The last ten years have been characterized by the search for optimal schemes for joint and complex treatment of NPC by combining surgical treatment with radiation or chemotherapy in order to improve the results of treatment of severe patients with locally advanced processes and the presence of metastases (Borsukov Yu. A. et al., 2002; Bazin I. S., 2006; Douillard JY et al., 2000; Giantonio B., Catalano P., 2005; Bosset JF et al., 2005). But, despite this, it should be noted that there is no consensus on the advisability of using complex

treatment for locally disseminated LC at the present time, when the leading attention is paid to surgical treatment. This is explained by the low three-year survival rate for locally disseminated NPC, which, despite treatment with chemotherapy, does not exceed 13% (Borsukov Yu.A., 2000; Knysh V.I., 2001; Malakhov Yu.P., 2004; Houdard S., 2004). In modern clinical oncology, there is a constant search for the most effective methods of combining radiation treatment with various options for surgical intervention, used before, during or after surgery, as well as large-fraction methods (Berdov B.A., 1999; Borsukov Yu.A., 1999; Navrozov S.N. et al., 2001; Kanaev S.V., 2003; Dubois J., Adloff M., 2003). At the same time, at the present time there are no clear recommendations on the duration, doses and methods of radiation treatment for NPC, which indicates the search for the necessary ways to improve and increase the effectiveness of this method of treatment (Prorokov V.V., 2001; Kanaev S.V., 2002). The leading motivation for the use of chemotherapy (CT) to treat patients with NPC is the creation of new drugs against dangerous tumors, as well as the use of new treatment regimens. Various CT methods are also used - intraarterial, endolymphatic, intraportal (Perevodchikova N.I., 2004). Currently, there is information in the literature about the effectiveness of regional adjuvant chemotherapy for various types of malignant neoplasms, although there are few observations, and there are no clearly developed treatment regimens for the introduction of new drugs (Tomudex, Eloxatin, Campto, Xeloda). In our country, a number of scientific studies have been conducted on early diagnosis and effective treatment of various pathological diseases of various systems and organs, prevention of complications of acute and chronic diseases, increasing the life expectancy of patients (Tilyashaikhova M.N., 2022, Juraev M.D., 2022;



Israilov R.I., 2022; Magrupov B.M., 2022), however, the morphological and clinical basis of organ-preserving surgical interventions for ampullary rectal cancer have not been improved, the existing trends in the increase in the incidence of LCPC, high mortality after surgery, the occurrence of frequent causes and metastases, low five-year survival rate, unsatisfactory quality of life of patients, the severity of their labor and social rehabilitation, indicate the relevance of the problem being studied, determines and requires the need to conduct research work in order to optimize joint and complex methods of treatment for this category of patients. With any cancer, including rectal cancer surgery, the issue of preserving the organ in whole or in part is the main problem. Since the cancer process is dangerous and spreads to the deep layers of the organ and surrounding tissues in a short period of time, the issue of preserving the organ in surgery is difficult. It is important to know the histological type of cancer so that the surgeon can resolve this issue positively. Rectal cancer develops in several histological forms, as in other organs, some of them grow relatively safely and limitedly, while others are

histologically very dangerous and poorly differentiated, and can quickly spread into the deep layers of tissue. In this case, it is difficult to preserve the organ during surgery.

Our material retrospectively analyzed part of the clinical history, surgical and morphological data of 120 patients with rectal cancer who were treated in the oncoproctology department of the Russian National Medical Research and Medical Center of the Ministry of Health of the Republic of Health in 2005-2015. The histological types of rectal cancer in the patients we studied were distributed as shown in the table below. In our material, the most common rectal cancer was poorly differentiated adenocarcinoma (19.7%), followed by moderately differentiated adenocarcinoma (17.4%), and well-differentiated adenocarcinoma in third place (14.4%). Mucinous adenocarcinoma (14.4%), ring adenocarcinoma (10.6%), site of neuroendocrine carcinoma (9.8%). Of the relatively poorly differentiated rectal cancers, 5.4% were adenocarcinomas, 4.5% were undifferentiated, and 3.8% were squamous cell (Table 1).

Table 1
Incidence of histological forms of rectal cancer.

No.	Histological types of cancer.	Number.	Percent.
1	Highly differentiated	23	14,4
2	Moderately differentiated	19	17,4
3	Low differentiation	26	19,7
4	Mucinous adenocarcinoma	19	14,4
5	Ring adenocarcinoma	14	10,6
6	Squamous cell carcinoma	5	3,8
7	Glandular squamous cell carcinoma	7	5,4
8	Undifferentiated cancer	6	4,5
9	Neuroendocrine carcinoma	13	9,8
	Total	132	

A generally accepted method for assessing the pathomorphosis of patients with rectal cancer after treatment Lavnikov G.A. developed in 2000 by K.A. The method improved by Galakhin was selected and applied. Based on this method, the general structure of tumor tissue, the interaction of parenchyma and



stroma, the level of cellular atypia, the degree of tumor cell degeneration, cellular polymorphism, and mitotic activity were taken into account. In this method, there are 4 levels of pathomorphosis:

- I degree (mild) – dystrophic changes appeared in individual tumor cells;
- II degree (moderate) – tumor cells are in a state of degeneration and foci of necrosis have appeared;
- III degree (strong) – necrosis over a large area, pronounced degeneration in tumor cells, vital signs are preserved in some cells;
- IV - complete pathomorphosis - complete destruction of tumor cells.

Cancer tissue invasion was divided into 3 levels based on morphological changes:

Level I - tumor tissue is located only in the mucosal layer; the stroma consists of formed connective tissue; lymphatic and blood vessels have a normal structure; with dense lymphoid infiltration.

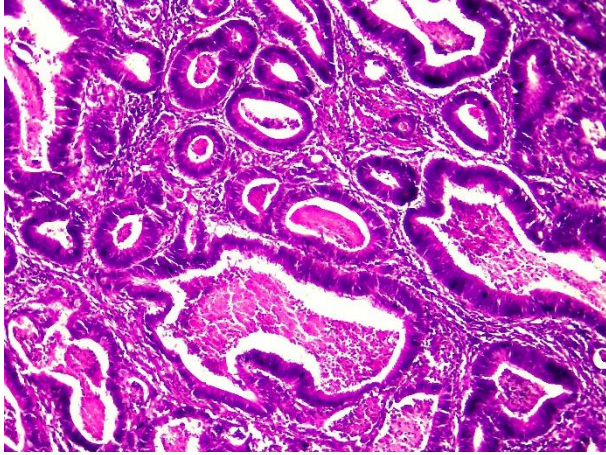
Level II – tumor tissue has spread to the muscle layer of the intestinal wall; stromal connective tissue is swollen and disorganized; lymphatic and blood vessels are paralytically dilated, hemorrhages appear; moderate lymphoid infiltration.

III degree – tumor tissue has spread to surrounding tissues; stromal tissue is not formed or destroyed; lymphatic and blood vessels rupture and bleed; lymphoid infiltration is low.

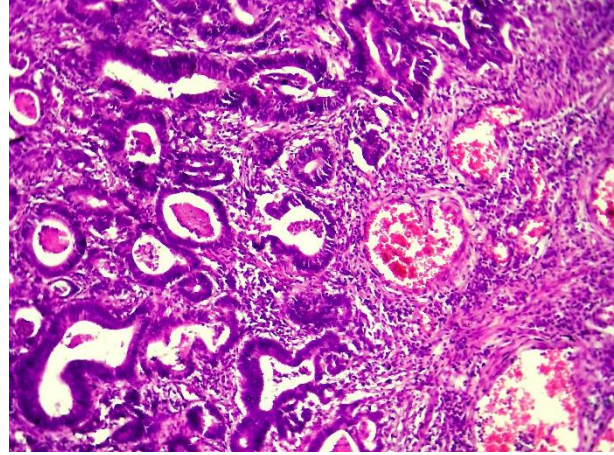
It has been established that the invasion of the cancer process develops along the following paths: Amoeboid invasion - the spread of undifferentiated forms of cancer through the interstitial tissue. Mesenchymal invasion is the invasion of an epithelial cancer cell into a mesenchymal cell, characteristic of all epithelial malignancies. Amoeboid invasion group - all malignant tumors. Cluster invasion - moderately differentiated epithelial tumors. Solid tuft invasion is a moderately heterogeneous epithelial tumor. Aggregate invasive differentiated epithelial tumors with space between them. Invasion with the exclusion of newly formed cells in the accumulation of tumor cells, well-differentiated glandular cancer, well-differentiated rectal adenocarcinoma, when analyzed according to

clinical data, turned out to be the slowest growing malignant tumor, often with a relatively benign outcome, close to the structure of normal glandular epithelial cells in terms of cellular structure. According to the report written during the clinical surgical intervention, this tumor was located in a limited area, the layers of the rectal wall did not spread deep into the tissues, with its slow growth, that is, the duration of this cancer in 23 patients during clinical observation was about ... years , the longest... .and the one that did not last long was defined as... Since the clinical symptoms are mild, it is shown that this tumor is detected by finger palpation.

In a microscopic examination of biopsy material obtained from patients with rectal cancer, the structure of the tumor tissue, its location in the layers of the intestinal wall, the degree of spread, the relationship with the structure of the stroma, the degree of development of secondary processes such as hemorrhage, necrosis were first analyzed in general terms. , inflammation that has developed in the tumor parenchyma, chemical and pathomorphological changes after radiation therapy. At the same time, we studied the interstitial connective tissue that forms the tumor stroma, the state of the blood and lymphatic vessels in it, and the level of lymphoid infiltration that developed in response to the tumor. Microscopic examination of well-differentiated rectal adenocarcinoma revealed the following cases. It has been established that the glandular structures in cancerous tissue have different sizes and shapes, and the stroma between them is a tissue atypia consisting of connective tissue. It was found that some structures of the gland expanded and formed cystic cavities, and eosinophilic protein material and the remains of fragmented cells accumulated in the cyst cavity (Fig. 1). The characteristic morphological feature of this well-differentiated glandular cancer is that the glandular cells have a structure similar to normal glandular cells, except that their nuclei are relatively larger, hyperchromatic and prone to atypical structure. The presence of connective tissue stroma between the glandular structures that make up the tumor parenchyma.

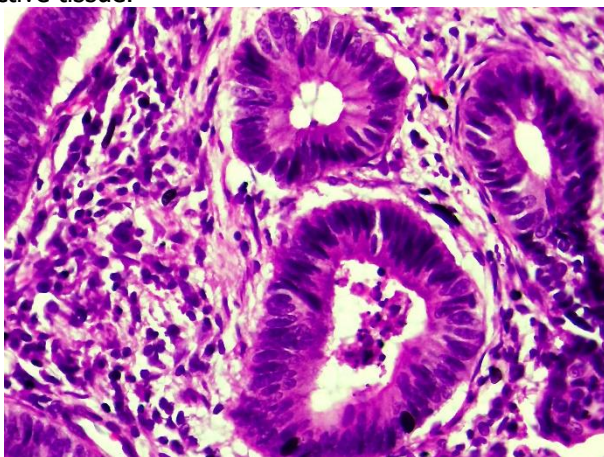


Pic. 1. Highly differentiated adenocarcinoma, glandular structures of different shapes and sizes, epithelial cells of uniformly cylindrical shape. Paint: G-E. Floor: 10x40.



Pic. 2. Highly differentiated glandular cancer, strong lymphoid infiltration in the stroma, vessels are dilated and full of blood. Paint: G-E. Floor: 10x40.

It was established that highly differentiated glandular cancer had spread widely to the mucous membrane of the rectal wall, and in some places it had grown into the submucosa. It is noted that cancerous structures of the gland germinate and spread through the interstitial connective tissue and are located close to the network of blood vessels in the submucosal layer. A strong level of lymphoid infiltration is detected between the structures of the cancer gland and the blood vessels (Fig. 2). It is known that during the development of any malignant tumor, i.e. cancer, lymphoid cells of the immune system proliferate as a protective reaction in the interstitial tissue. If you pay attention to the vessels, they are sharply dilated, dystrophies such as mucoid and fibrinoid develop in the tissue structures of the wall, as a result, due to the increased permeability of the vessel wall, an outpouring of blood around it by diapedesis is detected. When studying the histological structure of glandular cancer of the rectum under a microscope, it becomes even clearer that highly differentiated glandular cancer of glandular structures is to a certain extent limited, only the basement membrane is lost in the stroma, and glandular cells are located directly in the connective tissue. It was determined that the epithelium of the cancer gland has retained its cylindrical structure, only their nuclei have different sizes and shapes, and their chromatin is relatively dark, i.e. they have cellular atypia (Fig. 3). The stromal structures between the cancer cells swell and collapse, turning into unformed and randomly arranged connective tissue.

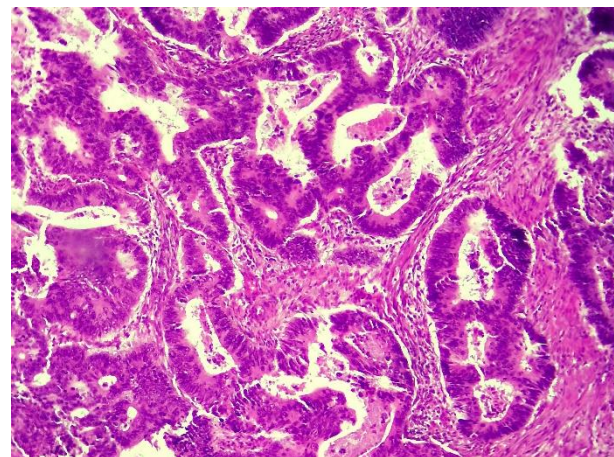


Pic. 3. Highly differentiated glandular cancer, cellular atypia in the glandular structures, lymphoid infiltration in the interstitial tissue appeared. Paint: G-E. Floor: 10x40.

Highly differentiated glandular cancer of the rectum consists of hyperchromic, polymorphic accumulations of cancer cells in the form of morphologically normal glandular structures, formed connective tissue with dense lymphoid infiltration in the stroma, I degree of invasiveness, II degree of severity of pathomorphosis, the outcome after surgery is good.

2. Moderately differentiated glandular cancer.

A microscopic examination of moderately differentiated rectal cancer showed that, in contrast to the above form, the structures of the cancer gland have a different structure and shape, and the cancer cells in them are located in some places in one row, and in other places in two or more rows and are located randomly (Fig. 4). Cancerous glandular structures have an irregular shape, and the surrounding tissues are invaded to varying degrees. In this form of cancer, the invasion process is defined in two forms, i.e., cluster and solid aggregations. With cluster invasion, a disruption of the structure of the gland is observed; cancer cells appear singly or in clusters and spread to surrounding tissues. In this type, it is found that the fibrous structures in the stromal structures around the invaded cancerous structures of the gland are destroyed and necrotic, that is, they undergo proteolysis. In the second type of invasion, it is determined that cancer cells invade by forming separate clusters and pushing aside stromal structures around the cancer cells.



Pic. 4. Moderately differentiated glandular cancer, cancer cells in the glandular structures are located unevenly and in an atypical position. Paint: G-E. Floor: 10x40.



CONCLUSIONS:

Analysis of postoperative complications in a general description showed that their number does not depend on the type of surgical intervention. Quite a large amount of clinical material has shown the possibility of organ-preserving operations in patients with lower ampullary malignant tumor of the rectum. A new method of complex treatment of patients with a malignant tumor of the rectum has been developed, including high-intensity hypoxyl therapy using a single irradiation regimen at a dose of 13 g before surgery (in 37 patients) and with subsequent organ-preserving intervention (in 36 patients). After endolymphatic polychemotherapy and regional polychemotherapy, the five-year survival rate during organ-preserving operations in patients with a malignant tumor of the rectum was 69.6%, and preoperative hypoxyradiation therapy according to this scheme was 76.1%. Five-year survival after a single dose of hypoxic radiotherapy at a dose of 13 Gy. A new approach to the complex treatment of patients with a malignant tumor of the rectum was developed, which included endolymphatic polychemotherapy and regional lymphatic polychemotherapy before surgery (47 patients), as well as hypoxic radiotherapy (40 patients) followed by organ-preserving operations.

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