

PALLIATIVE SURGERY POSSIBILITIES IN THE TREATMENT OF CARDIOESOPHAGEAL CANCER

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ANNOTATION: *A total of 53 palliative transpleural gastrectomy and gastrectomy and 112 distal gastrectomy procedures for disseminated cancer were performed. Postoperative complications developed in 13 patients in each group [(24.5 ± 5.9) and (11.6 ± 3.0)%, $p > 0.05$]. There were 1 patient in each group who died in the postoperative period [(0.9 ± 0.9) and (1.9 ± 1.9)%, $p > 0.05$]. The average survival time of patients was (15.6 ± 1.7) and (10.3 ± 1.5) months.*

Key words: *gastric cancer, cardioesophageal cancer, transpleural operations.*

Cardioesophageal cancer (CEC) is a malignant tumor of the proximal stomach that extends to the esophagus and is characterized by active lymphogenous metastasis along the lymphatic collectors of both the abdominal cavity and the mediastinum. Over the past two decades, there has been an increase in the incidence of this form of cancer against the background of a decrease in the number of patients with cancer of the body and distal stomach. At the same time, data from epidemiological studies in Europe and the USA indicate structural changes in the histological type of cancer of the esophagus and esophagogastric junction due to an increase in the proportion of glandular forms of cancer [1, 2, 6]. The currently widespread aggressive approach to the treatment of disseminated malignant forms of bowel, kidney, and female genital cancer has not yet received wide recognition in gastric surgery. The reason for this lies in the biological characteristics of this cancer, the modest possibilities of drug therapy, and the instability of the immediate results of transpleural resections [3, 5]. Until recently, palliative surgeries for gastric cancer in volumes greater than resection were considered a forced measure exclusively for life-threatening complicated cancer. The detection of disseminated cardioesophageal cancer was clearly regarded as a contraindication to organ-removing surgery [3, 4].

PURPOSE OF THE WORK

In this work, we sought to refute this established opinion. For this purpose, we decided to compare our experience in performing transpleural palliative operations with the results of standard palliative transabdominal distal gastric resections. We made

this choice due to the fact that transabdominal palliative gastric resection currently does not cause active opposition in the global oncological community and is a kind of "standard" in palliative gastric surgery.

RESEARCH METHODOLOGY

In our work, we adhered to several fundamental principles: 1. Large-scale palliative gastric surgery is justified if the associated mortality does not exceed the mortality after palliative distal resections - the historically recognized standard in palliative gastric oncosurgery.

2. The frequency and structure of postoperative complications, as well as the duration of the patient's stay in the hospital bed, should be minimal and should not interfere with the timely initiation of adjuvant chemotherapy treatment.

3. Palliative surgery should improve the patient's condition, not deplete his strength and create the potential for the implementation of a full program of special antitumor treatment.

The main group of patients included 53 patients aged 29 to 69 years who underwent transpleural interventions. Their average age was (55.5 ± 9.0) years. There were 47 $(88.7 \pm 7.4)\%$ men and 6 $(11.3 \pm 3.8)\%$ women. The comparison group consisted of 112 subtotal distal gastric resections in patients aged 34 to 73 years and an average of (58.9 ± 10.8) years. There were 73 $(65.2 \pm 6.3)\%$ men and 39 $(34.8 \pm 5.7)\%$ women in this group. Obviously, gender and age differences in the compared groups were insignificant. Concomitant diseases were detected in 37 patients, $(69.8 \pm 7.3)\%$ of the main group and 70 patients, $(62.3 \pm 5.8)\%$ of the control group ($p > 0.05$). The prevalence of cardia cancer (main group) and antropyloric stomach cancer (control group), metastasis maps were similar. In all cases, there were adenocarcinomas of varying degrees of differentiation. The leading complication of the disease in the main group was esophageal obstruction of varying severity: grades III and IV dysphagia was diagnosed in 7 cases, $(13.2 \pm 4.2)\%$. Grades I and II dysphagia were found in an equal number of patients - 23 cases each, $(43.4 \pm 6.8)\%$. Associated body weight deficit (BMI < 20) was detected in 26 patients, $(49.1 \pm 6.9)\%$, including cachexia (BMI < 16) in 4 patients, $(7.5 \pm 3.6)\%$. Pain syndrome was noted in 32 patients, $(60.4 \pm 8.2)\%$, anemia in 16, $(30.2 \pm 6.3)\%$, bleeding from a disintegrating tumor in 2, $(3.8 \pm 2.6)\%$. In 64 patients, $(57.1 \pm 2.8)\%$ of the control group, stenosis of the gastric outlet without exhaustion and electrolyte disturbances was observed, bleeding in 28 $(25 \pm 5.4)\%$ and tumor perforation in 1 patient $(12.5 \pm 3.8)\%$. In this case, 14 of them had a combination of these complications. Thus, the compared groups constituted a complex contingent of patients in clinical and tactical terms, similar in terms of gender, age, and initial physical condition.

RESULTS OF THE STUDY AND THEIR DISCUSSION

In the main group, esophageal tumor infiltration was limited to its abdominal segment in 23 cases, ($43.4 \pm 6.8\%$), diaphragmatic — in 8, ($15.1 \pm 4.9\%$), supradiaphragmatic — in 12, ($22.6 \pm 5.7\%$), retropericardial — in 10, ($18.7 \pm 5.4\%$) of cases. Cardioesophageal cancer was noted in 22 patients, ($41.5 \pm 6.8\%$), gastroesophageal — in 20, ($37.7 \pm 6.7\%$), total gastric cancer — in 8, ($15.1 \pm 4.9\%$) and gastric stump cancer — in 3 patients, ($5.7 \pm 3.2\%$). Palliative distal gastrectomy was performed when the tumor infiltrated the organ to the lower third of the body and it was possible to retreat from the edge of the carcinoma by at least 5 cm. In this case, unlike radical operations, the subtotal nature of the resection was not mandatory. We necessarily removed the omentum with realized or potential lymphometastases. In 89 patients, ($79.5 \pm 3.8\%$), we performed D2 lymph node dissection on the branches of the celiac trifurcation, which achieved accurate staging of cancer. Such an expansion of the scope of the operation did not lead to its significant prolongation. In 6 observations, ($5.4 \pm 2.1\%$), the operation was combined due to the simultaneous performance of liver resection (2), transverse colon (2) and ovariectomy (2). A feature of the cardioesophageal zone is its location at the junction of the abdominal and pleural cavities. This dictated a variety of surgical approaches depending on both the level of esophageal lesion and the severity of concomitant pathology and functional operability of patients. We used the abdominomedial approach with upper median laparotomy and sagittal diaphragmotomy according to prof. A. G. Savinykh in 8 cases at the initial stages of our work. Despite its low trauma, it was inconvenient when forming an esophageal anastomosis in the narrow space of the mediastinum. The only indication for its use at present in our clinic is functional contraindications to thoracotomy. We used the combined approach - upper median laparotomy with thoracotomy on the right in the 5th intercostal space 7 times when the esophagus was affected by a tumor at the level of the retropericardial segment. Its disadvantage is the need to form a graft during laparotomy without clear data on its required length and height of movement into the pleural cavity. The advantages of this approach include the convenience of mobilizing the midthoracic esophagus, as well as the possibility of forming an anastomosis inside the pleural cavity in the projection of the root of the lung and above. We used the abdominothoracic approach on the left in the 6-7 intercostal space with intersection of the left hemidiaphragm with the patient in the right lateral position with continuation of the incision along the midline of the abdomen and bypassing the umbilicus on the left 30 times. We consider the advantages of this approach to be a good overview of the structures of the upper floor of the abdominal cavity and retroperitoneal space, as well as the anatomical structures of the posterior mediastinum. After dissection of the hemidiaphragm, the approach provides complete orientation in the prevalence of tumor lesion in the sub- and supradiaphragmatic space, which contributes to the choice of an adequate type of esophagoplasty, a graft of optimal length already at the amputation

stage. We consider the indication for its use to be esophageal lesion no higher than the retropericardial segment of the esophagus. In 8 patients, we used the left-sided abdominothoracic approach with left-sided thoracotomy and transection of the left hemidiaphragm with the patient in the supine position, developed by our team (patent No. 2334475). The use of this approach was a way out of the situation in cases of late intraoperative detection of esophageal infiltration when it was necessary to transfer surgical manipulations to the pleural cavity. The approach combines the conveniences of the typical abdominothoracic approach, complicating the mobilization and reconstructive stages only in cases of severe left ventricular hypertrophy of the heart. Mobilization of the stomach and esophagus was always carried out according to oncological principles with large lesser omentums and a block of paraesophageal tissue. In addition, in 29 cases ($54.7 \pm 7.5\%$), D2 lymph node dissection was performed, and in 7 patients ($13.2 \pm 4.6\%$), D3 lymph node dissection was performed. In 23 cases ($43.4 \pm 6.8\%$), combined palliative interventions were performed with splenectomy (17), resection of the pancreas (6), liver (3), colon (2), pericardium (1), diaphragm (2), with left hemicolectomy (1), and left adrenalectomy (1). In 7 cases ($13.2 \pm 4.6\%$), the involvement of several organs in the process required multivisceral resections. The volumes of the operations performed, the methods of plastic replacement of the defect, and the immediate results are presented in Table.

Volume and immediate results of palliative surgical treatment of widespread cardioesophageal cancer, abs. (%)

Volume of interventions	Number of patients	Complications	Lethality
Proximal resections: Whole stomach plastic surgery with gastric tube	19 (35.8 ± 6.6) 15 (28.3 ± 6.2) 4 (7.5 ± 3.6)	7 (13.2 ± 4.6) 5 (9.4 ± 4.0) 2 (3.8 ± 2.6)	— — —
Gastrectomy: Esophagojejunoplasty Coloesophagoplasty	31 (58.5 ± 6.8) 29 (54.7 ± 6.8) 2 (3.8 ± 2.6)	5 (9.4 ± 4.0) 5 (9.4 ± 4.0) —	1 (1.9 ± 1.9) 1 (1.9 ± 1.9) —
Stump extirpations: Esophagojejunoplasty Coloesophagoplasty	3 (5.7 ± 3.2) 2 (3.8 ± 2.6) 1 (1.9 ± 1.9)	1 (1.9 ± 1.9) 1 (1.9 ± 1.9) —	— — —
Total	53 (100)	13 (24.5 ± 5.9)	1 (1.9 ± 1.9)

We selected the esophagoplasty option individually, taking into account the correspondence of the length of the displaced transplant to the level of esophageal resection. Thus, in 3 patients (5.7 ± 3.2)% we encountered the absolute impossibility of moving the small intestine segment to the level of esophageal intersection due to its high lesion in combination with a short mesentery of the small intestine and a fine-mesh type of its blood supply, which led to significant diastasis of the compared tissues at the reconstructive stage. In these cases, a decision was made on a one-stage esophagoplasty with the large intestine.

We have considered one such case as a clinical example. Patient K., 56 years old, was admitted to the thoracoabdominal department of the Volgograd Regional Clinical Oncology Dispensary No. 1 on June 28, 2004 (case history No. 4743) with complaints of difficulty in passing solid food, pain when eating, and weight loss of about 15 kg. He has considered himself ill for 2 months. His medical history includes a myocardial infarction in 1992 with the formation of a left ventricular aneurysm. Fibroesophagoscopy revealed a circular infiltrative lesion of the esophagus from the level of 34 cm from the incisors to the level of the middle third of the stomach body. The biopsy specimen contained cells of poorly differentiated adenocarcinoma. X-ray examination revealed tumor infiltration from the retropericardial segment of the esophagus to the lower third of the body. No evidence of distant metastases was found. General clinical and biochemical laboratory parameters were within normal limits. We considered the risk of the upcoming surgical intervention to be high due to severe cardiac pathology. The operation was performed on 14.07.2004. A combined left-sided approach was used. The tumor occupies the body of the stomach and the cardia, extends to the esophagus to the rectopericardial segment, infiltrates the gastropancreatic ligament and the retroperitoneal space. Metastases in the lymph nodes of the celiac zone are limitedly mobile. It was decided to perform palliative gastrectomy with resection of the thoracic esophagus and leaving a residual tumor $3 \times 3 \times 4$ cm, which we marked with tantalum staples for radiation therapy. The esophagus was mobilized to the level of the lung root. After removal of the preparation, an attempt was made to plasticize the defect with the small intestine. To lengthen the graft, one radial vessel was transected, but diastasis and tension between the esophagus and the intestinal loop remained. Transecting a larger number of radial vessels of the intestine for its mobilization threatened to lose viability. Formation of the anastomosis in these conditions occurred with tension and cutting of sutures. The anastomosis was forcedly disconnected. A decision was made to perform esophagocoloplasty. The colon was mobilized. An end-to-side esophago-colonic anastomosis was formed with an isoperistaltic colonic graft from the left colon, 35 cm long, on the feeding left colic vessels. An end-to-side coloenterostomy is formed between the distal end of the graft

and the outlet loop of the small intestine. The operation is completed according to general surgical rules. Duration of the operation is 4 hours 40 minutes, intraoperative blood loss is 750 ml. Postoperative diagnosis: Gastroesophageal cancer, retroperitoneal invasion T4N3M0, G3, R2. Dysphagia grade II. Condition after palliative gastrectomy with resection of the lower thoracic esophagus and simultaneous esophagocoloplasty from the abdominothoracic approach on the left. Ischemic heart disease. Postinfarction cardiosclerosis (1992). Postinfarction aneurysm of the anterior apical region of the left ventricle. Ischemic cardiomyopathy. Relative mitral regurgitation. H I. CHF III FC. Rare supraventricular and ventricular extrasystole. X-ray control of the anastomoses on the 7th day revealed their tightness. Liquid food intake with gradual expansion of the diet was allowed, drains and nasocolonic tube were removed. X-ray of patient K. on the 7th day after surgery. Esophago-colonic anastomosis and esophagoenteroanastomosis without signs of leakage. The patient was discharged from the hospital in satisfactory condition on the 16th day after surgery and lived for about 3 years with satisfactory quality of life without dietary restrictions. In total, complications were noted in 13 patients after surgery in the main group, (24.5 ± 5.9)%: 7 (36.8%) after 19 subtotal proximal resections and 6 (17.6%) after 34 transpleural gastrectomies and extirpations of the gastric stump. There was 1 death, (1.9 ± 1.9) % from depressurization of the esophageal-small intestinal anastomosis. The same number of postoperative complications was found in the control group, which amounted to (11.6 ± 3.0) % ($p > 0.05$). Pleuropneumonia, edematous forms of postoperative pancreatitis, and a few cases of suppuration of the postoperative wound prevailed. In the control group, we obtained 1 fatal outcome, (0.9 ± 0.9) % from acute myocardial infarction. The risk of complications in the main group was not associated with either the volume of operations, or with cytoreductive lymph node dissection, or with colo-esophagoplasty. We managed to avoid formidable ischemic and thromboembolic complications, which was the result of correct assessment of operability of patients - candidates for aggressive palliative treatment, adequate preoperative tactics, correct anesthetic care and clear postoperative management of patients. After transpleural resections and gastrectomies, the average survival time was (15.6 ± 1.7) months with its maximum duration of 23 months. The same indicators for distal resections were (10.3 ± 1.5) months and 17 months with a maximum duration ($p < 0.05$). At the same time, the long-term results in both groups differed favorably from the survival of patients who underwent interventions, where the average survival time was (4.3 ± 3.3) months ($p < 0.01$).

CONCLUSION

Palliative transpleural gastric resections and gastrectomy are technically complex interventions and require the surgeon to be prepared for non-standard solutions.

However, when performed in specialized clinics, they are not accompanied by an escalation of hospital mortality and can be considered reliable and the most functional. They prolong the life of patients to (15.6 ± 1.7) months versus (4.3 ± 3.3) months as a result of gastrostomies and provide a better quality of life and adequate nutrition for patients. Transpleural resections for widespread and disseminated gastric cancer can be recommended as the first stage of combined palliative treatment for this category of patients.

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