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# LAPAROSCOPIC CORRECTION OF REFLUX ESOPHAGITIS

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**Summary.** The number of complications in the postoperative period when applying fundoplication according to the generally accepted method is higher, but compared to the method proposed by us in the main group - by 24.7%, in the control - by 13.8%. In the postoperative period, the treatment of complications that arose was carried out according to generally accepted rules and did not encounter difficulties in any of the patients. The average postoperative bed-day with a complicated course was higher and amounted to 10 days. We did not reveal any effect of complicated course of the postoperative period on the long-term results. For the correct assessment of the choice of surgical treatment, it is important to analyze possible complications in the long-term period.

**Key words:** bariatric surgery, gastroesophageal reflux disease, choice of surgery.

**Relevance**. According to the 2020 clinical guidelines, GERD is a chronic recurrent disease caused by impaired motor-evacuation function of the gastroesophageal tract and characterized by regularly recurring reflux of gastric and, in some cases, duodenal contents into the esophagus, which leads to: The appearance of clinical symptoms that worsen the quality of life of patients (heartburn in 83% of patients with GERD, belching in 52%, dysphagia and odynophagia in 19%, as well as extraesophageal manifestations) [17,19,27,28]. Damage to the mucous membrane of the distal esophagus with the development of dystrophic changes in it, catarrhal or erosive-ulcerative esophagitis (reflux esophagitis), and in some patients, cylinder cell metaplasia [12,14,16,18,29]. In other words, in some cases, an accurate diagnosis of GERD requires not only a characteristic clinical picture, but also endoscopic and/or histological changes in the epithelium of the distal esophagus. Moreover, GERD is often asymptomatic. Thus, up to 50% of patients with erosive esophagitis may not have esophageal or extraesophageal symptoms [2], and in studies among patients with bronchial asthma, asymptomatic GERD accounts for up to 62% of cases [1,2,6,8,10]. In this regard, the severity of the pathology is usually determined based on the results of an endoscopic examination. Thus, mild GERD, also called non-erosive reflux disease (NERD), includes catarrhal esophagitis detected during esophagogastroscopy or pathological reflux according to pH-impedancemetry. Moderate GERD includes erosive esophagitis grades A and B according to the Los Angeles classification, severe erosive esophagitis grades C and D [23,24,25,26]. At the same time, moderate (grade A/B) erosive esophagitis proceeds in the same way as NERD: transformation into severe esophagitis or Barrett's esophagus (BE) is observed extremely rarely (<1% over 2 years) and depends little on the use of proton pump inhibitors (PPIs) [1,3,4,20,21,22]. Thus, at

present, the issues of laparoscopic surgery for gastroesophageal reflux disease in overweight patients require further development, both in tactical and technical aspects, in order to improve the results of surgical treatment. This work is a continuation of research in this direction.

**Purpose of the study.** Development of surgical treatment methods for overweight patients with gastroesophageal reflux disease that have high clinical efficacy and the lowest incidence of complications and relapses.

**Materials and methods**. The present study was based on observations of 123 patients who underwent surgery for gastroesophageal reflux disease in the Clinic of Surgical Diseases and New Technologies based at TMA and BukhMI No. 21 from 2019 to 2022.

In the main and control groups, the combination of gastroesophageal reflux disease with SPYUD was detected in 100 (83.3%) patients; with cholelithiasis in 43 (35.8%) patients; with gastric ulcer and duodenal ulcer in 21 (17.5%) patients; with abdominal wall hernias in 9 (7.5%) patients; chronic nonspecific lung diseases were observed in 18 patients (15.0%). The excess of these total numbers of subjects is explained by the frequent combination of several diseases in the same patient. Isolated GERD was rare and was detected only in 30 (25%) overweight patients. The cause of the disease, as a rule, was the "primary" insufficiency of the lower esophageal sphincter, since no signs of anatomical changes in the area of the esophageal opening of the diaphragm were revealed during instrumental examination. Of the total number of the above-mentioned patients with excess body weight, only 42 (35.0%) sought medical attention at the clinic with a diagnosis of GERD. The referrals of the remaining patients included various diseases for which they had been unsuccessfully treated for a long time by doctors of various specialties. Patients with excess body weight and obesity constitute a special contingent of patients, since the polymorphism of the clinic and the course of GERD in them under the guise of and in combination with other concomitant diseases cause certain difficulties in correct and timely diagnosis. In this regard, all patients underwent a comprehensive examination, including clinical, instrumental and laboratory research methods. General clinical examination was carried out using traditional methods and included the study of complaints, anamnesis, general and local status. Functional diagnostics of external respiration was carried out using the RiD-124D (LKIVD-01) spiroanalyzer (St. Petersburg). The study was conducted on an empty stomach in the morning hours with the patient in a sitting position. Breathing was done through a mouthpiece, a clamp was applied to the nose. In this case, the vital capacity of the lungs (VC), forced vital capacity of the lungs (FVC), Tiffeneau index (FEV1/VC), maximum voluntary ventilation (MVV) were determined. The flow curve of the maximum expiratory volume was analyzed taking into account the volume in the first second (FEV1). Thus, the analysis of the data of the preoperative examination of patients with overweight and obesity showed that a

comprehensive examination of patients using clinical and instrumental research methods provides the most complete information on the nature of functional disorders in the upper gastrointestinal tract in gastroesophageal reflux disease. When developing the new operation, we were guided by the desire to make the intervention for overweight patients minimally traumatic, since when performing surgical intervention in overweight patients, the surgical field became difficult to access and poorly visible due to excess fatty tissue in the area of the esophagus and diaphragmatic crura, and this led to an increase in the number of postoperative complications. In the process of developing the method, we took into account that overweight individuals have increased intragastric pressure, which is why it is necessary to strengthen the esophageal-gastric junction. When suturing the diaphragmatic crura in overweight patients, they swell due to their infiltration with fatty tissue, the strength of fixation is reduced, so fraying, divergence, and suture failure are possible, which in turn, in combination with high intra-abdominal pressure, can cause a relapse of the hernia. Diaphragmocruroraphy is quite traumatic for the patient, since it requires the separation of the diaphragmatic crura, which has an adverse effect on patients with excess body weight, especially those with a large number of combined diseases. The performance of diaphragmocruroraphy in patients with excess body weight is difficult, since the presence of a large amount of fatty tissue in the area of the diaphragmatic crura complicates the view, thereby increasing the labor intensity of the operation. It is known that today many operations are aimed at reducing the course of GERD and reducing body weight, they are associated with the use of a certain kind of restrictive technologies, in which various materials are used as prosthetics. Taking into account previous experience, we have developed an operation and compared it with the most effective analogues used at present. The advantages of the method are: relative simplicity of the technique of execution, availability of the material used, the possibility of wide application in surgical hospitals. The proposed method is carried out as follows. Under intubation anesthesia, trocar laparocentesis is performed at five points. Two trocars (10 mm) are placed along the midline of the abdomen - one near the xiphoid process, the second 4-5 cm above the navel. The third trocar (10 mm) is inserted into the left hypochondrium along the midclavicular line, the fourth is inserted into the right hypochondrium for insertion of the liver retractor, the fifth is inserted into the left hypochondrium laterally for retraction of the stomach and exposure of the diaphragmatic crura behind the esophagus. After insertion of the trocars and revision of the abdominal organs, mobilization of the stomach, cardia and esophagus begins. Then the liver retractor is inserted and the liver is retracted, the gastrohepatic ligament is divided. The esophagodiaphragmatic ligament is mobilized to the left of the esophagus. A tube is inserted into the patient's stomach. Using a Babcock clamp, the right diaphragmatic crus is separated from the esophagus, then the left, after which the esophagus is

pulled to the left and downwards for visual revision of the posterior region of the esophagus and a window is created behind the esophagus. Then, a synthetic explant made of polytetrafluoroethylene (PTFE) is prepared in the form of a circle with a diameter of 8 cm, in the center of the explant a circle with a diameter of 3 cm is cut out, communicating with the outer border of the circle due to a radial incision. The explant is twisted into a tube to pass it into the abdominal cavity through a trocar at the fifth point. The explant is grasped with manipulators, straightened and installed in such a way that the edges of the explant incision envelop the esophagus, and the esophagus is in the cut hole of the explant. The edges of the incision of the polytetrafluoroethylene mesh are sutured in the form of a duplicate, while the radial incision is directed with a reference point of two o'clock in order to avoid damage to the liver vessels when suturing the edges, the right leg of the diaphragm is captured in the suture and the explant is fixed to the diaphragm with separate sutures (one or two). We sutured the explant to the diaphragm using the Auto suture endostapler; fixation with manual intracorporeal sutures is possible. The main advantage of this method is the early activation of patients due to a decrease in the volume of surgical trauma and the degree of surgical aggression, which significantly reduces the number of cardiopulmonary complications in the postoperative period.

**Conclusions:** In the context of reforming the healthcare system, the widespread introduction and improvement of minimally invasive technologies, the selection of patients for antireflux surgery for gastroesophageal reflux disease occurring against the background of excess body weight should be carried out according to strict indications based on data from a comprehensive clinical and instrumental examination, including X-ray tests, fibroendoscopy, pH-metric and esophagomanometric monitoring.

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