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Modern Aspects of Clinical Effectiveness of Endovideosurgical Treatment of Heat Hernia

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Abstract

Modern requirements for performing antireflux interventions are based on careful mobilization of the area of the cardioesophageal junction, which is very difficult when performing video endoscopic access and leads to the refusal of surgical intervention in a number of cases, and the long-term results of laparoscopic correction of the hiatal hernia have not been sufficiently studied. This review is devoted to modern aspects of the clinical effectiveness of endovideosurgical treatment of hiatal hernia.

Keywords: endovideosurgical treatment, hiatal hernia, treatment, reflux esophagitis.

Relevance. Hiatal hernias (HH) (hiatal hernias) are among the most common types of visceral anatomy disorders. It is believed that in people under 30 years of age, such anatomical changes are observed in 10–15%, while in individuals over 50 years of age – in 60% [1–6]. There are four options for anatomical changes. Axial hernias (type I) are characterized by displacement of the gastroesophageal junction and part of the stomach into the chest along the axial axis. In paraesophageal hernias (type II), the gastroesophageal junction is located in the abdominal cavity, while the stomach is displaced through the hiatal opening into the mediastinum. Mixed hernias (type III) combine the anatomical changes of the first two options. Hiatal hernia (type IV) is a dislocation into the chest cavity of any other abdominal organs, except the stomach [1, 4, 5, 7]. The clinical manifestation of axial hiatal hernia is gastroesophageal reflux (GER). The indication for surgical treatment of type I hiatal hernias is gastroesophageal reflux disease that is not amenable to drug therapy [1, 5, 7–9]. With hiatal hernias of types II–IV, conditions are often created for disruption of

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the passage of food due to deformation, bending or torsion of the esophagus, stomach or other hollow organs of the abdominal cavity. These changes determine the clinical manifestations and indications for their surgical treatment [4, 10]. However, the high degree of trauma when performing traditional antireflux interventions from thoracotomy and laparotomy approaches, as well as the number of complications arising from these techniques, led to a decrease, and in some cases, to a complete abandonment of surgical intervention.

The wait-and-see tactics of specialists with a number of conservative treatment methods not only did not solve the problem of GER, but also worsened its course, since time was lost for adequate treatment. Interest in the surgical treatment of hiatal hernia has increased sharply after the introduction of endovideosurgical methods into clinical practice, which opened a new page in the treatment of this nosology.

The advantages of using laparoscopic surgical techniques over traditional ones are a lower degree of trauma and pain, as well as a low likelihood of developing specific complications for laparotomy wounds (suppuration, the formation of postoperative hernias). The advantages also include a reduction in hospitalization time, postoperative rehabilitation and disability, high cosmetic value, and a total reduction in the cost of hospital treatment. It is not uncommon for patients to have extraesophageal manifestations of GERD caused by hiatal hernia, such as chest pain, pulmonary and laryngeal symptoms (bronchial asthma, hoarseness, cough, aspiration pneumonia). Of no less importance is the proven development of nervous system diseases in patients with GERD in the form of sleep disturbances and increased anxiety [3]. Currently, laparoscopic antireflux operations of Nissen and Toupet in various modifications, including the use of implants, are recognized as the most effective, which can not only eliminate the hiatal hernia, but also, most importantly, relieve the patient from complications of GERD, significantly improving the quality of life [4] . However, despite the intensive comprehensive study of the problem of hiatal hernia and GERD, the development over the past 60 years of methodological and technical approaches to anti-reflux operations, none of the methods used guarantees the absence of relapse of reflux esophagitis, which manifests itself in the postoperative period in 5–24% of patients [5]. The presence of a large number of options for antireflux operations, the persistence of a high frequency of relapses of hiatal hernia and GERD (up to 24%) after primary antireflux operations indicate dissatisfaction with the results of available techniques and the difficulty of choosing the type of surgical treatment [6].

There is no doubt that inflammation of the esophagus and reflux esophagitis, which persist

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after a course of conservative therapy, are an indication for surgical treatment. The number of such patients requiring surgical treatment, according to some authors, reaches 58% [14, 8]. According to the American Guidelines for the Treatment of Hernias (SAGES), surgical treatment of large hiatal hernias is necessary only for symptomatic paraesophageal hernias. Asymptomatic patients only require constant monitoring [17]. It is worth noting that a more painstaking survey of a patient with a hiatal hernia and a meticulous study of his complaints make it possible in most cases to identify very serious and clinically significant syndromes, such as aspiration, compression of the posterior mediastinum, or to suspect signs of occult bleeding. Considering the fact that hiatal hernia is a disease of the older age group, and the disease itself is acquired in nature and occurs most often in the fifth decade of life [19], an unresolved issue is the determination of indications for elderly patients and the possibility of their treatment laparoscopically. The specificity of antireflux correction in senile and elderly people is the fact that intracorporeal sutures are applied to degenerative-dystrophic tissues, and this, in turn, creates the preconditions for the development of relapse or the formation of paraesophageal hiatal hernia [9, 13]. Today, more and more experts agree that, due to low morbidity, laparoscopic antireflux surgeries can be performed at almost any age [7, 9, 13]. Many authors recognize that laparoscopic antireflux interventions in patients with short esophagus are feasible. But if in case of shortening of the 1st degree they can be called the operation of choice, then the greatest difficulties are caused by endovideosurgical treatment of the hiatal hernia in case of shortening of the esophagus of the 2nd degree. They are associated with a high risk of complications and require the surgeon to understand the anatomy and have a high level of practical skills in performing surgery on the cardioesophageal junction for a large hiatal hernia. This type of treatment should only be performed by highly specialized hospitals with experience in hundreds of successfully performed surgical interventions of this type [8]. A recent study showed that the risk of recurrence or complications after laparoscopic treatment is associated only with the experience of the operating surgeon. Neither the type of surgical intervention, nor the sequence of stages, nor the choice of antireflux cuff had an impact on the development of complications or relapse after surgery. Sufficient experience for a surgeon is 10 antireflux operations per year [12]. Once this operational activity is achieved, we can confidently talk about a successful postoperative period.

Laparoscopic antireflux surgical interventions can have intraoperative complications in an average of 4–7.5% of cases [7, 8]. The most common complications of these operations include perforation of the esophagus and stomach [11]. The following may also occur: bleeding from the

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operation area, disruption of the integrity of the stomach, esophagus, trauma and rupture of the pleura, pneumothorax. The development of these complications often leads to access conversion [6, 7]. With the introduction of laparoscopic access, the structure and type of intraoperative and postoperative complications after antireflux surgical interventions have changed. This approach is characterized by a reduction in the incidence of postoperative hernias and intraoperative damage to the spleen, while increasing the incidence of intra-abdominal bleeding (usually from the trocar hole), perforation of the esophagus or stomach, pneumothorax and pneumomediastinum. This is largely due to the experience of the operating surgeon [10].

Postoperative complications Dysphagia. Impaired passage of contents through the esophagus of varying severity occurs in 3.2–40% of patients. Most often, it is transient in nature and resolves on its own within 2–4 weeks, on average within 5–8 days. The phenomena of persistent dysphagia, which require repeated surgical intervention, occur in 2–3% of cases [6, 11]. There is evidence from randomized controlled trials that show that dysphagia occurs more often after laparoscopic fundoplications compared to open ones, especially when using a Nissen cuff [12]. “Gas-bloat” syndrome or swelling syndrome occurs in 7.9 - 22.6% of patients in the postoperative period. It usually does not require repeated surgical intervention and resolves on its own [16]. Bleeding. The frequency of this complication, according to some authors, is 2.5 – 7% [8, 11]. The source of bleeding is: trocar punctures (66%), short gastric vessels (34%) [15]. One of the rarely mentioned complications in the postoperative period is the development of subcutaneous emphysema. This condition, according to O.S. Vasnev, can occur in 4 out of 5 patients who are diagnosed with a large hiatal hernia. The cause of emphysema may be a high dissection of the esophagus against the background of membranes destroyed during the gradual enlargement of the hernia, which limit the mediastinum from the abdominal cavity [8]. According to some authors, the main indication for repeated reconstructive surgery is the development of the “telescope” symptom [5, 8].

Chernousov A.F. et al. (2011) showed experience with repeated antireflux surgeries. In their opinion, the main reason for repeated surgical treatment was also the “telescope” phenomenon against the background of an incorrectly formed cuff. To prevent these complications, it is necessary to form a full, symmetrical cuff without fixing it to the crura of the diaphragm, and to prevent its slippage, apply serous-serous sutures between the upper third of the cuff and the esophagus [10].
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access and leads to the refusal of surgical intervention in a number of cases, and the long-term results of laparoscopic correction of the hiatal hernia have not been sufficiently studied.

To date, a unified approach to the treatment of hiatal hernias has not been defined, and indications and contraindications for their surgical treatment have not been fully formulated. There are unsatisfactory results of surgical treatment of hiatal hernias; the optimal method of their surgical treatment has not been determined.

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