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METHODS OF SURGICAL TREATMENT OF DIAPHRAGMATIC HERNIAS (LITERATURE REVIEW)

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Abstract

The article is devoted to the surgical treatment of hiatal hernias and its complications, which are one of the main problems of modern medicine and surgery. The article presents an overview of the history of esophageal surgery, modern surgical, endoscopic and therapeutic methods of treatment of treatment of hernias of the esophageal orifice of the diaphragm.

Keywords treatment of hernias of the esophageal orifice of the diaphragm crural surgery, endoscopic and laparoscopic treatment.

INTRODUCTION

According to many therapists, treatment of hernias of the esophageal orifice of the diaphragm treatment of hernias of the esophageal orifice of the diaphragm can be carried out with the help of conservative therapy. But after 6 months, the number of relapses of the disease increases to 50%,

and after a year it may even reach 90%. Therefore, surgical treatment of this pathology is one of the main roles in the treatment of treatment of hernias of the esophageal orifice of the diaphragm and its complications [1, 5, 8].

The history of esophageal surgery. Since ancient

times, pathologies have been known that characterize the throwing of gastric contents into the esophagus. The earliest information about esophageal diseases found in a document known as the "Smith Surgical Papyrus". This document, excavated by American Egyptologist Edwin Smith in 1862, describes a "gaping throat wound piercing the esophagus." In the "canons" of Avicenna, some symptoms of treatment of hernias of the esophageal orifice of the diaphragm can be found [3].

In 1846, Hunter (1786) first reported severe esophagitis in his articles. In 1853, the first articles on GPOD were published. In 1868, a German doctor, A. Kussmaul, made the maximum extension of the patient's head and neck and sent a light tube into the esophagus to diagnose cancer of the thoracic esophagus. In 1869, another German surgeon, Friedrich Trendelenburg, introduced endotracheal anesthesia. And two years later, in 1871, the first successful esophageal resection and reanastomosis was performed on dogs by the Austrian surgeon Theodor Billroth. Vincenz Czerny, another German surgeon, performed the first human esophageal resection for esophageal cancer in 1877. His patient lived for one year before dying from a recurrence of the tumor [2, 7].

In 1904, Eppinger verified the GPOD by X-ray inspection. In 1908, D. Cranwell for the first time, through access by left-sided thoracotomy, set the large omentum, colon and part of the stomach into the abdominal cavity. In 1913, the American surgeon Franz Torek performed the first transthoracic removal of cancer of the middle third of the esophagus. His patient was a 67-year-old woman with squamous cell carcinoma of the middle of the esophagus. Torek tunneled the patient's cervical esophagus along her anterior chest wall and formed a cutaneous esophagostomy, which was then attached with a rubber tube to the gastrostomy. The patient lived for 13 years [4, 12].

1919 A. Soresi, for the first time produced the method of crurography at treatment of hernias of the esophageal orifice of the diaphragm. In 1935, Winkelstein described in detail the clinic of "peptic esophagitis", and isolated it into a separate

nosological form. In 1956, Rudolph Nissen, a Swiss surgeon, and later (i.e., 1967) British surgeons David B. Skinner and Ronald H. R. Belsey used fundoplication to create an intraabdominal gastric valve mechanism to control gastroesophageal reflux. In 1962, as an addition to cardiomyotomy, J. Dor proposed an anterior method of fundoplication. Further A. Toupet in 1963 he published the technique of posterior fundoplication (270°). Later, De Meester and Jonson, when evaluating the pH and manometry of various fundoplication methods, concluded that short free fundoplication provides adequate reflux control [3, 14].

METHOD

The method of P. Donahue 1977 modification of the R. Nissen operation. It was called "soft" circular fundoplication ("floppy Nissen"). 1979 J. Angelchik developed a special prosthesis [6]. The introduction of laparoscopy into practice gave brilliant prospects to this area. B. Dallemagne performed circular fundoplication laparoscopically for the first time in 1991. Subsequently, it became the "gold standard" in the treatment of treatment of hernias of the esophageal orifice of the diaphragm [9,15]

Modern methods of treatment of hiatal hernia

Treatment of hiatal hernias is aimed at relieving symptoms and reducing the risk of various complications. According to this, treatment is performed in several directions: conservative, endoscopic therapy and surgical treatment [4].

I. Conservative therapy. In the 1990s, with the advent of proton pump inhibitors (PPIs) in pharmacotherapy and the use of laparoscopic access, the treatment of patients reached a high degree.

The main components of drug treatment include:

- Antacids (Maalox, Almagel, etc.),
- H₂-histamine blockers (Ranitidine, Famotidine, Kvamatel, etc.),
- PPIs (Omeprazole, Pantoprazol, etc.),
- prokinetics (Motilium, Cerucal, etc.);

The disadvantages of conservative therapy are that it does not eliminate the causes of NPS insufficiency, does not reduce the pathological effect of bile acids and duodenal contents on the esophagus, does not eliminate the risk of complications of gastroesophageal reflux disease (GERD). In addition, treatment with prokinetics is ineffective in the presence of hernias of the esophageal orifice of the diaphragm. In addition, prolonged treatment of IPN is accompanied by hypergastrinemia with proliferation of gastric endocrine cells, which causes the development of gastric carcinoma in experimental animals [1, 13].

II. Endoscopic interventions.

In the last decade, new minimally invasive endoscopic interventions such as argon plasma coagulation (APC), bipolar and multipolar electrocoagulation, photodynamic therapy and laser ablation of metaplastic epithelium have been rapidly developing.

III. Surgical treatment.

In about 5-10% of patients with hiatal hernias, conservative therapy does not give the expected results and, therefore, surgical methods of treatment are used [3, 8, 10].

The main advantages of surgical treatment of GERD:

- basically, conservative therapy relieves symptoms, with the help of operations, the main cause of reflux can be eliminated;
- positive results are found in more than 90% of patients;
- reducing the need for continuous drug therapy.

In Denmark, 788 antireflux operations are performed per 100,000 people per year. They also note that this is almost three times less than in other Scandinavian countries. In the USA, about 200,000 Nissen laparoscopic surgeries are performed per year for the TREATMENT of HIATAL HERNIAS. These data once again prove its high frequency.

The main indications for antireflux operations (according to A.N. Ogorokov):

- stricture of the esophagus;
- deep hemorrhagic ulcers of the esophagus,
- bleeding;
- Barrett's esophagus.

Contraindications to antireflux surgery are:

- oncological diseases;
- various blood clotting diseases;
- mental disorders;
- high surgical and anesthetic risk (heart failure, III-IV art., cirrhosis of the liver, hepatic, renal insufficiency, etc.).

According to T.R. De Meester et al., Nissen fundoplication is effective in 91% for an average of 10 years, whereas no study using PPIs describes such a treatment result.

There are more than 40 surgical options for the treatment of hiatal hernias. Many of these operations are of historical interest only. Currently, the following types of operations are mainly performed for the treatment of hiatal hernias and its complications [7]:

1. Total fundoplication (360°): according to Nissen-Rossetti, Collis-Nissen;
2. Partial fundoplication (270°) (anterior fundoplication according to Belsey; anterior hemifundoplication according to Dor; posterior hemifundoplication according to Toupet);
3. Hill operation - fixation of a small curvature to the medial leg of the diaphragm;
4. Implantation of different prostheses;
5. Fixation of the CEP zone with a round ligament of the liver;
6. Extirpation of the esophagus.

The choice of the operation method is carried out individually. In the USA, preference is given to the method of Belsi ("floppy Nissen"), and in Europe - Nissen-Rossetti, Douro and Tupe. All these methods of surgical treatment of hiatal hernias have both positive and negative sides.

The most common and well-studied method is

Nissen fundoplication. According to various authors, from 4% to 42% of cases develop complications specific to this operation, such as recurrence of hernias of the esophageal orifice of the diaphragm, due to the eruption of sutures and the opening of the cuff, temporary or permanent dysphagia due to hyperfunction of the cuff, the phenomenon of "telescope" - slipping of the cuff from the esophagus down with compression of the stomach, pylorospasm due to intraoperative damage or compression of the vagus nerves, "gas bloat" syndrome - overflow of the stomach with air and the inability to belch and vomit [6].

According to Chen L.Q. et al. (2019), Collis-Nissen gastroplication in patients with Barrett's esophagus prevents GER, restores the NPS gradient, but does not cause regression of changes in the Barrett's esophageal mucosa, despite the absence of reflux.

Awad Z.T. et al. (2019) consider the Collis-Nissen operation to be the most acceptable in the treatment of patients with RE and esophageal shortening. They performed the Collis-Nissen operation both laparoscopically with thoracoscopic support and by an open transthoracic route.

Many years have passed since the beginning of the use of minimally invasive techniques in antireflux surgery. Laparoscopically, not only Nissen, Tupe, Dora, Hila fundoplication is performed, but also Collis-Nissen surgery and laparoscopic transhiatal esophagectomy. It is increasingly being used as an alternative to long-term drug therapy. But laparoscopic fundoplication, like open antireflux surgery, quite often leads to specific post-fundoplication complications.

A number of authors consider fundoplication with SPV to be a pathogenetically justified operation in the treatment of GERD, since performing fundoplication involves mobilization and denervation of the cardiac part of the stomach. After SPV, the level of gastrin increases, gastric secretion decreases and the tone of the NPS increases.

The modification of Chernousov A.F. gave better

results than the classical Nissen fundoplication. At the same time, after mobilization of the small curvature and cardia of the stomach, the abdominal part of the esophagus forms a "fundoplication cuff", while preserving the main trunks of the vagus nerves and both Latarge nerves.

Sumin V.V. with co-authors (2018), suggest using incomplete fundoplication with a preliminary change in the angle of the esophagus into the stomach due to dissatisfaction with the results of Nissen fundoplication. They refuse to restore the acute angle of Gis and, conversely, form a right angle between the esophagus and the longitudinal axis of the stomach by lifting the esophagus into the stomach up along the esophagus by 3-6 cm, fixing this position with 2-3 sutures applied between the cardia and the wall of the esophagus (esophagocardiography).

Hofstetter W.L. and co-authors (2016) studied the long-term results of antireflux operations in 97 patients. Laparoscopic Nissen fundoplication was performed in 50 of them, while the rest had various open antireflux operations such as transthoracic Nissen fundoplication, translaparotomic Nissen fundoplication and Collis-Belsi surgery. Peters J.H (2013) also notes that antireflux surgery in patients with PB gives a long-term good result in 90% of cases and prevents the development of adenocarcinomas in the metaplastic epithelium [1,9].

Complications of surgical treatment.

The probability of complications of surgical treatment methods depends on the type of intervention, the quality of the surgical aid and is 2-10%.

Specific complications include:

- "gas bloat" syndrome;
- postoperative dysphagia;
- damage to the vagus nerve;
- "dumping syndrome";
- diarrhea;
- stomach ulcer;

- sliding of the bottom of the esophagus into the stomach with inadequate fixation;
- formation of gastric fistulas;
- slipping of the cuff - the phenomenon of the "telescope" - slipping of the cardiac department and the bottom of the stomach from the cuff ("slipped Nissen" - "slipping Nissen").

CONCLUSIONS

Thus, today one of the urgent problems of modern endoscopy and surgery is the improvement of methods for the diagnosis and treatment of hernias of the esophageal orifice of the diaphragm. The use of various endoscopic interventions, the determination of indications for the use of new methods of local endoscopic treatment in the complex treatment of complicated forms of hernias of the esophageal orifice of the diaphragm will reduce the number of recurrences and complications of hernias of the esophageal orifice of the diaphragm.

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