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The Pathogenesis Gerd and Operative Reception Confirming Its Correctness

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Annotation: *The real article is devoted confession that absence of Gubarev's valve is the key factor of pathogenesis of GERB, and to the operative reception of his recreation in a postmediastinum for the patients of GERB, associated with cardiac hiatal hernia, not complicated by postoperative dysphagia, and recurrent disease in the long-term periods.*

The lower esophageal sphincter (LES) of healthy people is in a condition of a tone of rest for about 23 hours per day and restrains the stomach contents from the cast into the esophagus. However, the tone of the rest disappears due to the physiological relaxation of the LES for 20-30 one time per days on 20-30 seconds. Remaining tone is saved, but he unsuffices, to restrain intragastric pressure (3). The valve of Gubarev helps him in normally (VG). VG is absent in people with hernia of the esophageal opening of diaphragm, because the Gis's corner (CG) forming a cape in the lumen of the stomach with hanging fold of mucous membrane, that is the VG under an esophageal-gastric junction, is smoothed, so gastroesophageal reflux occurring in time of spontaneous relaxation of LES (4,5). Their aggressive components not only damage the mucous membrane of the distal esophagus and submucosal layer, which causing fibrosis, but and the LES. Physiological relaxations of damaged LES become more frequent and long, time of transition from the state of relaxation is increased in the state of tone of rest and back up to gaping of cardia (6). Accordingly, the frequency of reflux and the length of stay content of stomach on the mucosa of the esophagus are increased (5). The terms of the pathogenesis of GERD is closed.

Domestic morphological noted the presence of auxiliary elements in the form of folds of mucous membrane and vascular structures in the sphincters of the gastrointestinal tract, capable of performing the function of the leaflets (1,2,4). Normally, such a role is played by the fold of mucous membrane, to hanging from the cape, formed by CG in the lumen of the stomach.

The processes occurring in the layers of the distal esophagus under the influence of aggressive components of content of stomach lead to deformation, fibrosis. The mucous membrane loses its ability to form folds; therefore, after the reestablishment of acute CG by stitching the right side of the fundus of the stomach to the left wall of the distal esophagus, there is no formation of sealing the folds of mucous membrane under the esophageal-gastric junction. First, Lortat-Jacob (1950) executed this operation from torakal access and did not attain the desired result.

In 1951, English surgeon Allison suggested that in the basis of hiatal hernia is not anatomical, but functional defect of cardia. Possibly, he was near to solution of key factor of pathogenesis of GERD, but the article of R. Nissen: «Simple operation of antireflux», on many years created the erroneous picture of key factor of pathogenesis of GERD. The essence of its operation is to downgrade a hernia under a diaphragm winding onto of cuff of the fundus of the stomach around the distal esophagus, which recreates the sharpness of CG, which increases the pressure in the lumen of the LES (6). This operation became popular in the whole world, all waited high efficiency from it. But its failing is stopped up in its essence. Creation of cuff from the fundus of stomach does not have anatomical and physiological basis. This is confirmed by postoperative dysphagia in 40 % of cases, recurrent hernia and GERD (7). These patients are often reduced peristaltic activity of the esophagus, so that the distal cuff around his department creates dysphagia.

Running into the lacks of this operation, surgeons began to offer its modifications (Tupe, Dor and other) with cuffs in 180 and 270 degrees. These cuffs create less postoperative dysphagia, but frequently relapse hiatal hernia and GERD. Repeated operations were not given the best results in terms of recovery from GERD, but are often accompanied by severe complications with postoperative mortality of 17%.

Despite the failure of the concept of the pathogenesis of GERD, it was approved by the World Gastroenterology Week in Berlin in 1995. The positive side of this forum was the adoption of a new nosological unit, GERD is introduced by WHO list of diseases of the 10th revision.

To understand the causes of inefficiency Nissen operation and its modifications need to understand the factors leading to such consequences.

In women, the average length of the esophagus is 24 cm. In patients with cardiac hiatal hernia the esophagus is shortened due to migration (1 cm) of the esophagus stationed in a ring esophageal opening, abdominal section (3 cm) and gastric cardia (3 cm) in the posterior mediastinum. As a result of esophageal-gastric junction has moved up by at least 7.0 cm, and the esophagus decreased from 24 cm to 17.0 cm (24 - 7 = 17). For many years it has adapted to this length. To create a cuff Nissen esophagus below the diaphragm have to stretch to 12,0-15,0 cm, or 50% -70% (17 cm) with a length to which he responds dysphagia and tonic spasm of the longitudinal muscles, muddle or destructive cuff. As a result of GERD relapse (9). We have never been able to find signs of cuff Nissen in patients operated after 1-3 years on recurrent GERD.

The followings arguments serve as foundation for the recreation of CG above a diaphragm: 1) axial hernia of the esophageal opening of diaphragm does not render direct adverse effects on the organs of mediastinum 2) it is never hurt. Consequently, there is no clinical motivation to fix it. M. D., A.A. Zalewsky, is the employee of the Krasnoyarsk State Medical Academy, in 2001 is offered conception of pathogenesis of GERB, the key factor of which is absence of CG. He is developed the operative reception of recreation of valve in a postmediastinum and successfully applied in clinical practice. Forming of valve is conducted without lengthening of esophagus and without creation of cuff from the fundus of stomach round the distal department of esophagus. Valve function is based on the phenomenon of moving elastic ring

or sphincter of a relatively small part of its circumference, fixed to a stable object, the expansion pressure from within and reflex contraction.

Methods. Surgical technique in patients with GERD from abdominal access, associated with cardiac hiatal hernia.

Perform an upper median laparotomy, the left lobe of the liver is mobilize and assign, a hernial departments of the stomach and esophagus are reducing under a diaphragm, their rear walls are mobilizing, the front of the hernial sac is resected. A stitch is breadthways 0,7 - 0,8 cm conduct a filament through front lower arc of LES, ends are taken on clamps. The pericardium is peeled from the diaphragm in 4 - 5 cm anterior to the width of the ring and the esophageal opening by finger introduced into the mediastinum in front of the esophagus. The ends of the yarn are carried out through the aperture of 2.5 cm from the front edge of the ring of the esophageal opening (Figure 1).

An esophageal-gastric junction is transferred to the niche between a pericardium and diaphragm by undercutting for the ends of filament, link them under it and, thus, LES is fixed above it by front lower arc. An operative reception is closed (8).

Anatomical composition of valve.

The lower department of esophagus fits back lower oval of right auricle at moving of esophageal-gastric junction forward, and hernia part of stomach fits the cutting edge of ring of the esophageal opening of diaphragm. Thus it is tucked in under an esophageal-gastric junction. The front hernia wall of stomach, lying on a diaphragm and fixed to it, functions as an immobile leaf of valve. Opening of esophageal-gastric junction is in 2,5-3,0 cm ahead from included in a stomach, and the axis of lower department of esophagus is directed on the immobile leaf of valve, when LES is in a state of tone of rest or remaining tone, serried and impermeably recovered from below an immobile leaf. The back hernia wall of stomach recovers included in an esophagus behind an esophageal-gastric junction (9) (Figure 2).

Intragastric pressure pins it against a front wall and auricle. Due to it pressure increases in the lumen of LES. During the act of swallowing under constraint of food lump back wall of LES and back hernia wall of stomach (folding leaf) depart back and skip it in a stomach (Figure3). After it LES reflexly grows short and, moving to the fixed part of the circumference, leads away an esophageal-gastric junction for the immobile leaf of valve. In this position it is between eatings, when LES is in tone of rest or state of physiological relaxation, and reliably stops content of stomach from reflux in an esophagus.

Materials. Thus, instead of lost Gubarev's valve in 39 patients with GERD associated with cardiac hiatal hernia, the valve was created under the esophageal-gastric junction in the posterior mediastinum. Operative technique is simple, surgical trauma is minimal, resulting in the restoration of peristaltic activity of the gastrointestinal tract into the next day after surgery, the absence of dysphagia and other postoperative complications. In view of the valve anatomy, it is effective at any pressure LES.

Results and discussion. In terms of observations from 2 to 7 years in 36 (92.3%) of 39 patients with GERD who were operated on the presented method, it is now a full recovery.

The criteria for recovery were: the absence of symptoms of GERD, endoscopic and histological evidence of reflux esophagitis, pH> 4 in the esophagus for 24 hours a day, the safety valve leaflets and their functions proved by X-ray method.

Conclusions.

1. Cardial hiatal hernia no adverse effects on adjacent organs, never infringed and does not create the clinical motivation to fix it.
2. A key factor in the pathogenesis of GERD is the congenital absence or loss of the Gubarev's valve in adult life.
3. The operative technique valve reconstruction in the posterior mediastinum in patients with GERD is conceptually justified, the technique to perform is simple, involves minimal operative trauma, not complicated by postoperative dysphagia, and recurrent disease in the long-term periods.

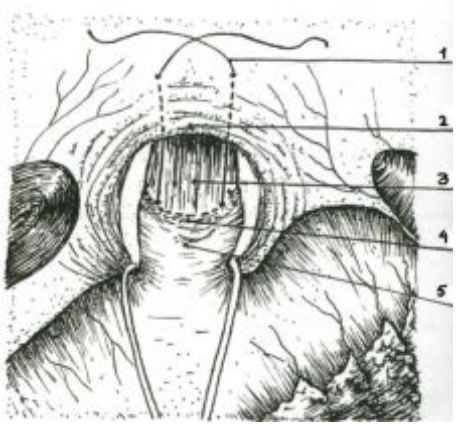

Fig. 1. Diagram of lead of filament through the front arc of LES and through a diaphragm from abdominal access.

1) filament, 2) front arc of ring of the esophageal opening of diaphragm,

3) esophagus, 4) line of esophageal-gastric junction, 5) hernia department of stomach.

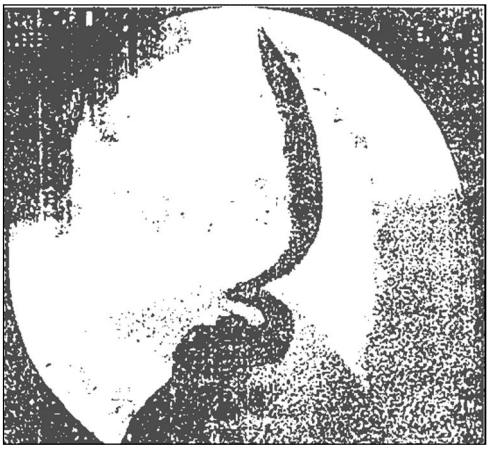

Fig. 2. The left lateral radiodraph of an esophagus and a stomach during swallowing a water suspension of barium sulfate 1) the anteriounferior arch of LES fixed to a diaphragm, 2) back wall of LES.

Fig. 3. the left lateral radiograph of the esophagus and stomach after moving the a great bulk of barium to a stomach.

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