Case Report:
Clinical Case of a Gastric Diverticulum Operated by Laparoscopic Approach

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Abstract: A gastric diverticulum is a rare disease, occurring in 0.04% of cases on contrast X-rays and 0.01-0.11% of cases of upper GI tract endoscopies. Diagnosis is often difficult due to non-specific symptoms, such as a feeling of fullness in the epigastrium after eating, dyspepsia, nausea and vomiting. In the case of symptomatic diverticulum, surgical treatment is indicated, where a priority is given to laparoscopic interventions. In the article, we present a case of a gastric diverticulum in a 37-year-old woman who was successfully operated laparoscopically.

Key Words: Gastric diverticulum, Diverticulitis

Introduction:
A gastric diverticulum is a rare disease that occurs in 0.04% of cases on contrast X-rays and 0.01-0.11% of cases of upper GI tract endoscopies.(1, 2) They are equally common among men and women and usually occur between 50-60 years. The most frequent symptoms include a feeling of fullness in the epigastrium after eating, dyspepsia, nausea and vomiting. Rare complications include ulcers, perforation, bleeding, and malignancy.(3) Diverticula of the stomach can be classified into true (consisting of all layers of the stomach) and false or pseudodiverticuli. True diverticula are innate while false diverticuli are acquired. Pseudodiverticuli usually are located in the region of gastric fundus. As a rule, diverticula have a diameter of 1-3 cm.(4, 5) In this article, we present a case of a gastric diverticulum that was successfully operated with laparoscopic approach.

Case Report
The patient, a 37-year-old woman, was admitted to the hospital with complaints of recurrent epigastric pain that had bothered the patient for the last 3 years. Laboratory tests were without deviations. On examination of recurrent epigastric pain, upper GI endoscopy and contrast X-ray of the abdominal cavity were performed, which showed the presence of a gastric diverticulum with signs of diverticulitis (Figure 1). Preoperatively, the patient was prescribed rabeprazole 20 mg orally for 10 days.

Fig.1: Abdominal X-ray with contrast
The operation was performed under combined endotracheal anesthesia. With the help of a Veress needle, carboxypertitoneum was insufflated and a 10 mm trocar was installed in the middle of the distance between the navel and the xiphoid process. No pathological conditions were detected during the revision of the abdominal cavity. Under visual control, additional trocars were placed in the left mesogastrium (12 mm) and in the right mesogastrium (2 x 5 mm). The liver was retracted with a retractor. The lesser sac was dissected (Fig. 2). With the aid of the Harmonic device, the stomach was mobilized along the greater curvature; in the process of isolation, we visualized the diverticulum of the posterior fundus of the stomach, which measured 5x3 cm (Figures 3, 4). A laparoscopic partial resection of the stomach was performed with the ECHELON 60 mm apparatus (Fig. 5). The mechanical suture was coagulated, covered with SURGICEL hemostatic material (Fig. 6). Hemostasis was performed during the operation. Trocars were removed under visual control. The surgical wounds were sutured. Postoperative ultrasound showed no free fluid, fluid accumulations in the abdominal cavity, no signs of impaired evacuation of the contents of the stomach, normal motility with unexpanded intestinal loops. The patient was discharged after 3 days. The tissue was histologically confirmed as gastric diverticulum. At the second consultation after 3 weeks, postoperative wounds are healing. The patient has no complaints and an x-ray of the stomach with contrast without signs of pathology (Fig. 7a, 7b).
Discussion
The difficulty of diagnosing gastric diverticula is that they are often mistaken for another pathological process. On modern diagnostic methods, including CT scan of the abdominal cavity, they look like a cystic formation with a thin wall and a horizontal level of fluid and air, located mainly behind the stomach between the spleen, adrenal gland and the left pedicle of the diaphragm. (6)

Thus, they may be mistaken for a pathological process in the paravertebral zone like tumors, cysts and abscesses. They can also be mistaken for a developmental disorders, such as a double pylorus.(7)

The frequency of symptoms usually increases with the size of the diverticulum. In general, about 10% of patients will need surgical treatment, mainly when the size is more than 4 cm, as well as in the presence of chronic inflammation, ulcers or bleeding.(8)

An important point in the treatment of gastric diverticulum is the presence of other gastrointestinal diseases, which are often mistaken for symptomatic diverticulum. In this case, surgery rarely leads to an improvement in the patient's condition.(9)

Another important problem is the determination of the localization of the diverticulum. In the prelaparoscopic era, the localization of the diverticulum was important for defining operative access via the median superior laparotomy or by subcostal access. At present, given the introduction and the widespread practice of laparoscopic methods, the localization of the diverticulum is of less importance. The anterior wall of the stomach is clearly visible during laparoscopy. Access to the back wall can be achieved by splitting the gastrocolic ligament. In the case of difficulties in finding the diverticulum, the procedure can be combined with intraoperative gastroscopy or the stomach can be filled with 0.9% NaCl solution and the pylorus pinned down for better filling.(3)

Cases of gastric diverticula are rare and are of particular importance in abdominal surgery, gastroenterology and other specialties. In the medical literature there are separate publications on the treatment of this pathology and often information about the diverticula of the stomach is not sufficient. Because of this, the approach to the treatment of this disease is often empirical.

Conclusions
A gastric diverticulum is a rare disease, occurring in 0.04-0.11% of cases, depending on the method of investigation. Diagnosis is often difficult due to non-specific symptoms, such as a feeling of fullness in the epigastrium after eating, dyspepsia, nausea and vomiting. In the case of symptomatic diverticula, surgical treatment is indicated, where priority is given to laparoscopic interventions.

References