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DIAGNOSTIC AND TREATMENT METHODS

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Diagnostic challenges and immediate outcomes of surgical treatment of a patient with duodenal non-epithelial tumor

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Abstract. Gastrointestinal stromal tumors (GIST) can be localized in all regions of the gastrointestinal tract. Most often, GIST are localized in the esophagus and stomach, less often in the low intestine. The duodenum accounts for up to 5% of GIST localizations. At the same time, tumors of various histological structures in the duodenum are rare. Often, the tumor develops covertly, manifesting itself only by its complications. The most common of these is bleeding into the duodenum. In the structure of the causes of bleeding from the upper gastrointestinal tract, bleeding from GIST takes up several of percent. The radical method of GIST treatment is a surgical method with mandatory postoperative examination of the prepartate using immunohistochemistry to verify its degree of malignancy and determine further patient management tactics. In clinical practice, difficulties arise in the differential diagnosis of GIST localized in the duodenum and duodenal ulcer. In our clinical case, a 65-year-old man had a long history of peptic ulcer. He was repeatedly treated by a gastroenterologist for exacerbations of duodenal ulcer. Over the past year, he has had several episodes of gastrointestinal bleeding. At the same time, no endoscopic data was obtained for the exacerbation of peptic ulcer disease. The use of such methods as MRI of the abdominal cavity and endoUS allowed the verification of GIST at the preoperative stage. The patient underwent gastric resection with the removal of GIST in the duodenal bulb. A good result of surgical treatment of a non-epithelial duodenal tumor has been shown. If there are clinical manifestations of bleeding from the upper gastrointestinal tract, GIST should be remembered as a possible cause.

Keywords. gastrointestinal stromal tumors, GIST, duodenum, surgical treatment

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Introduction. Gastrointestinal stromal tumors (GISTs) are rare tumors of the gastrointestinal tract [1, 2, 3]. GISTs are characterized by hematogenous metastasis to the liver, peritoneum, less commonly to the lungs, bones, and rarely to the lymph nodes (5%) [1]. Men and women are affected equally often. The median age of patients with GISTs is 55-65 years, rarely in individuals under 40 years of age.

GISTs most often occur in the stomach (60-70%), less commonly in the small intestine (25-35%) and duodenum (5%). They can also be found in the colon and rectum (5%), as well as in the esophagus (1-5%) [1-5]. In 5% of cases, the tumor is not associated with a specific organ. Unfortunately, GISTs are often detected at late stages, as they do not cause specific symptoms and are difficult to diagnose. They are often diagnosed incidentally during an exam-

ination or surgery performed for another reason.

More than half of GIST cases present with urgent complications, the most common of which is gastrointestinal bleeding [4,6,7].

Present our clinical observation. The patient provided written agreement for treatment and publication of his clinical case in a scientific journal. Patient K., 65 years old, was admitted to the surgical department on August 20, 2024, complaining of a feeling of heaviness in the epigastric region immediately after eating, belching, and heartburn. The patient has a long anamnesis of ulcers and has been treated multiple times in various hospitals. Since the beginning of 2024, the patient has been bothered by persistent pain and several episodes of gastrointestinal bleeding, for which he was repeatedly admitted to various surgical hospitals with a diagnosis of duode-

nal ulcer complicated by bleeding. Due to a long history of peptic ulcer disease and several episodes of ulcer bleeding, the patient was diagnosed with a planned surgical procedure for duodenal ulcer disease and referred to University Clinical Hospital. Prior to admission, the patient underwent a series of instrumental examinations as an outpatient.

A gastric X-ray performed on July 25, 2024, revealed a duodenal bulb ulcer with a recess on its contour (Fig. 1).

Magnetic resonance imaging (MRI) of the abdominal organs (July 30, 2024) (Fig. 2) revealed a duodenal tumor with ulceration, no signs of regional lymphadenopathy, and no invasion of surrounding structures (shown by the arrow). This may be consistent with a submucosal tumor (GIST). No focal changes in the parenchymal organs were detected. It is impossible to completely exclude the presence of a penetrating duodenal ulcer.

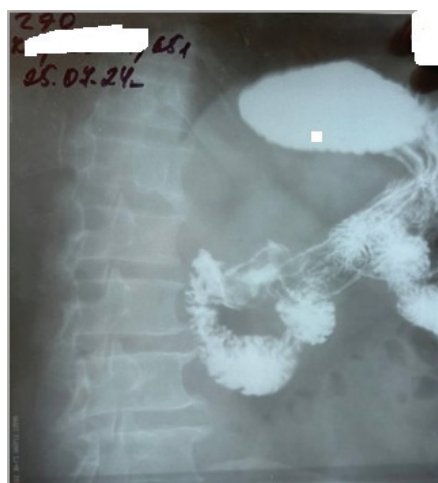


Fig. 1. Fluoroscopy of the stomach

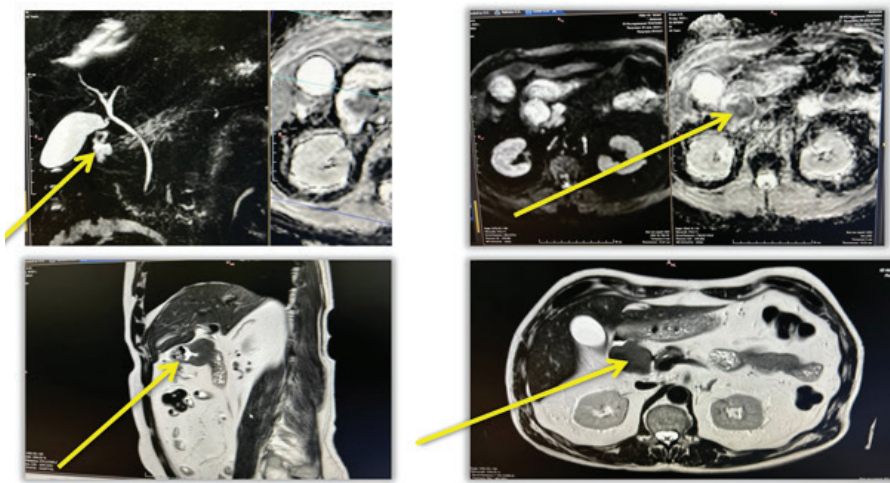


Fig. 2. MRI of the abdomen

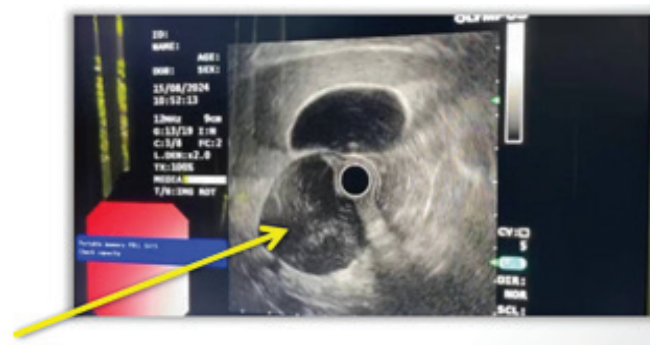
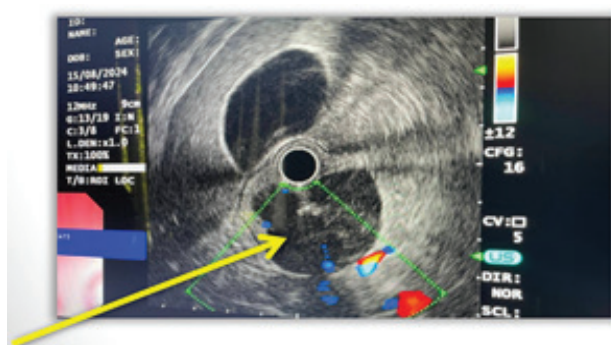


Fig. 3. Endoscopic ultrasound examination (EUS)

A fibrogastroduodenoscopy (FGDS) on August 1, 2024, revealed superficial gastritis, signs of pronounced duodenal bulb deformation, a post-ulcer scar, a duodenal bulb neoplasm, and focal atrophic gastropathy. A repeat fibrogastroduodenoscopy on August 21, 2024, revealed chronic mixed gastritis. A subepithelial duodenal bulb lesion with ulceration (GIST?). A giant duodenal ulcer?

An endoscopic ultrasound examination (August 15, 2024) (Fig. 3) revealed a nonepithelial duodenal bulb lesion (shown by the arrow), which, according to endosonographic features, corresponded to a gastrointestinal stromal neoplasm with a medium index according to the EUS malignancy scale.

Based on the examinations conducted, a clinical diagnosis was: GIST of the duodenum? Duodenal ulcer? Chronic duodenal ulcer with penetration?

Thus, the complex of instrumental examinations performed before surgery did not allow a definitive diagnosis, but the presence of a non-epithelial tumor of the duodenal bulb was suspected.

On August 22, 2024, the patient underwent a midline laparotomy. Intraoperatively, a round, dense, elastic tumor

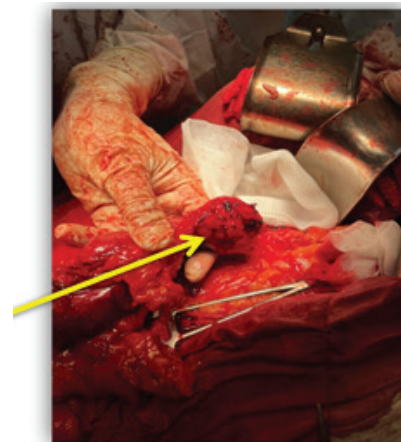
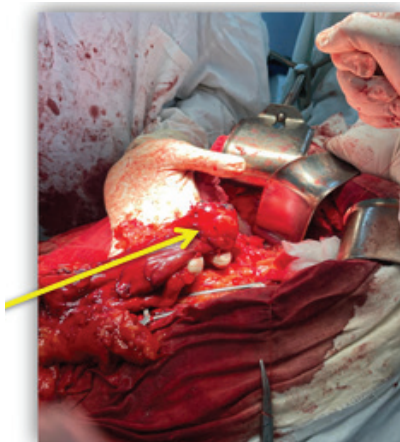


Fig. 4. Tumor of the duodenum (intraoperative photo)

up to 6 cm in diameter was detected in the duodenal bulb (Fig. 4). A mucosal defect up to 2 cm in diameter and 1.5 cm deep was detected on the posterior duodenal wall. No signs of oncological dissemination in the abdominal cavity were detected. A puncture biopsy of the tumor also revealed no malignant cells. The intraoperative findings were assessed as GIST. A decision was made to perform a Roux-en-Y gastrectomy

with tumor removal. Figure 5 shows the removed specimen. The postoperative course was uneventful, and the patient was discharged from the hospital on the 10th postoperative day for further treatment by an oncologist at his place of residence.

Based on immunohistochemistry, the patient was diagnosed with duodenal GIST with an intermediate risk of metastasis. The postoperative diagnosis was:

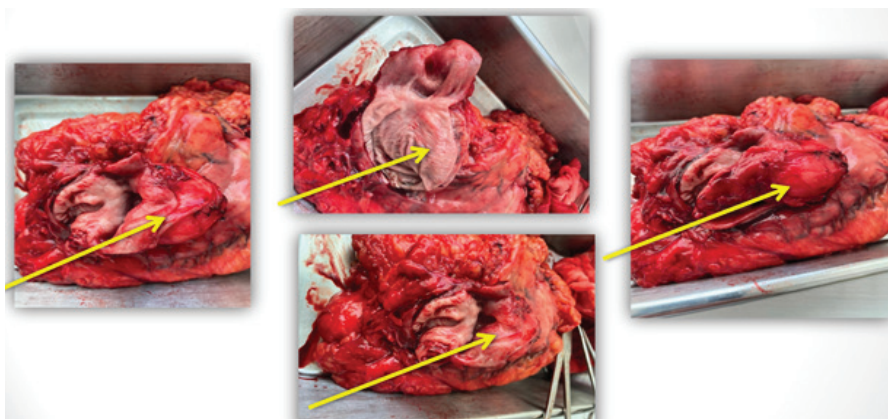


Fig. 5. GIST of the duodenum on the preparation

duodenal GIST T3N0M0, intermediate risk of metastasis.

Conclusion. The clinical manifestations of GIST localized in the duodenum have not specific symptoms and present a challenge for differential diagnosis with penetrating duodenal ulcers, not always allowing for a correct diagnosis preoperatively. Only a comprehensive instrumental examination, including fibrogastroduodenoscopy, abdominal MRI, endoscopic ultrasound, and gastric fluoroscopy, can help verify non-epithelial tumors of the duodenum. This clinical case clearly demonstrates the difficulty of diagnosing non-epithelial duodenal tumors, the possibility of concomitant peptic ulcer

disease and GIST, and the successful outcome of early surgical treatment.

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