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CASE REPORT

ECTOPIC PANCREATIC TISSUE PRESENTING AS GASTRIC TUMOR – A CASE REPORT

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Abstract. *Heterotopic pancreas is a pancreatic tissue located outside the usual anatomical location of the pancreas. Heterotopic pancreas was first described in 1727 by Schultz in the diverticulum of the ileum. A 61-year-old man was admitted to the Second Department of Surgery with the following complaints: heaviness and pain in the epigastrium and right subcostal area, accompanied by nausea, vomiting, lack of appetite and weight reduction - about 20 kg over the last few months. Intraoperatively tumor formation was found located in the pyloro-antral gastric area with approximate size 4/5 cm in diameter. The histological examination of the specimen revealed an uncapsulated formation of pancreatic glandular serine acres and single Langerhans islets among cystic dilated and deformed pancreatic ducts without epithelial cellular atypia.*

Key words: *pancreatic tissue, resection, tumor*

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INTRODUCTION

Heterotopic pancreas is a pancreatic tissue located outside the usual anatomical location of the pancreas. It is rare and can be found anywhere in the GI tract. The stomach and small bowel are the most commonly affected organs. The latter is manifested clinically by pain and inflammation. Gastrointestinal bleeding and small bowel obstruction are also reported but occur accidentally. Most cases remain without clinical presentation and are diagnosed at autopsy [8].

For the first time, the heterotopic pancreas was described in 1727, found in a diverticulum of the ileum. There are two theories of its appearance: "migrating" of pancreatic tissue during embryonic development in the rotating of the anterior part of the primary intestine, when pancreas fragments are divided and migrating to different organs of the GI tract or penetration of immature gastric mucosa into the submucosa, followed by pancreatic metaplasia [14].

CASE REPORT

In the Second Department of Surgery a 61-year-old man was admitted with the following complaints: heaviness and pain in the epigastrium and right subcostal area, accompanied by nausea, vomiting, lack of appetite and weight reduction - about 20 kg over the last few months. Several months before, he was admitted to another hospital, with the same complaints. He was treated conservatively without surgical procedure. Upper endoscopy was performed - no pathological processes were detected.

Physical examination revealed the patient's abdomen was at chest level, respiratory movements of the

abdominal wall were observed as in healthy subjects. The abdomen was soft, painful at palpation in the epigastrium and right subcostal, with normal peristalsis. Blood tests showed leukocytosis - 12.98 x109. Ultrasound and computer tomography showed gall bladder calculus and bilateral kidney cysts.

The patient was operated. Intraoperatively, chronically inflamed and filled with multiple heterogeneous stones gall bladder, non-dilated bile ducts and tumor formation located in the pyloro-antral gastric area with approximately 4/5 cm diameter were found. Pyloromyotomy was performed. The tumor formation described above was detached and biopsy samples for express examination were sent intraoperatively to the pathologist for evaluation. The histopathological specimen examination revealed ectopic pancreatic tissue in the stomach (Fig. 1 and Fig. 2 – macroscopic preparation). A resection of the tumor followed by pyloroplasty was performed.

The postoperative period went smoothly and the patient fully recovered, fed in time and discharged from the hospital in a good condition.

The histological examination of the specimen established an encapsulated formation of pancreatic glandular serine acres and single Langerhans islets among cystic dilated and deformed pancreatic ducts without epithelial cellular atypia. The histological diagnosis was “tumorous heterotopic pancreatic tissue in the stomach wall (choristom) against the background of chronic antral gastritis” (Fig. 3 and Fig. 4).

DISCUSSION

Heterotopic pancreas was first described in 1727 by Schultz in the diverticulum of the ileum. Histologically proven by Klob in 1859 [10], heterotopic pancreas occurs rarely and is defined as “extrapancreatic tissue” that has no anatomical or vascular relationship to the pancreas and is a congenital pathology. Frequency of autopsy material ranges from 0.11 - 0.21% and male to female ratio is 3:1 [11].

In 1909, Heinrich classified the heterotopic pancreas into three main types.

In 1973, Gaspar-Fuentes finally completed the classification and it acquired the following form: Type I - a typical pancreatic tissue with acins, canals and islet cells found in the normal pancreas. Type II - only pancreatic channels in different variants. Type III - only

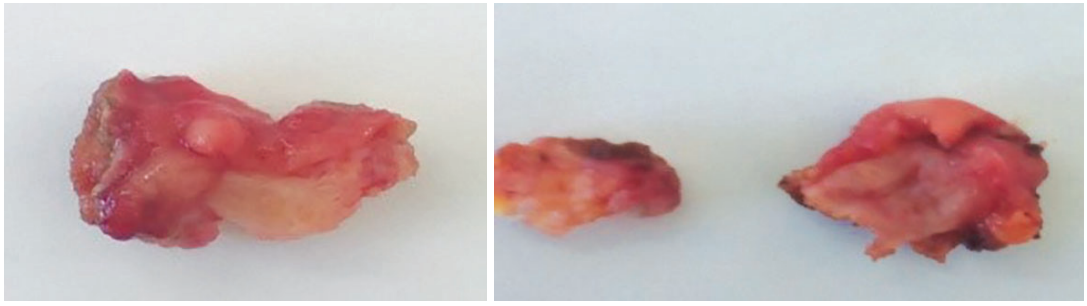

Fig. 1 and Fig. 2. Macroscopic preparation of the tumor formation located in the pyloro-antral gastric area

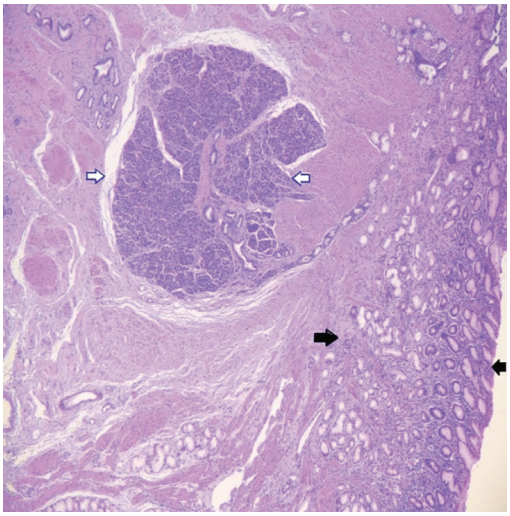

Fig. 3. White arrows – pancreatic parenchyma in the muscular layer of the stomach wall. Black arrows – Antral mucosa

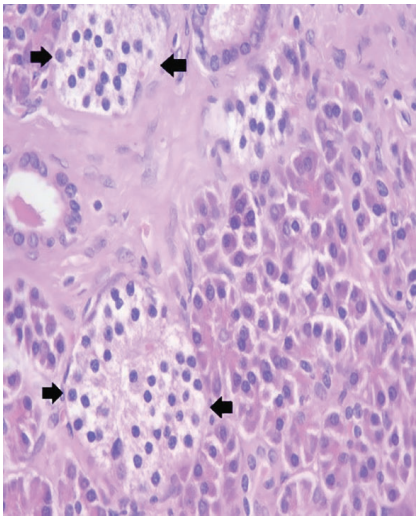

Fig. 4. Langerhans islets

acinar tissue (exocrine pancreas). Type IV - islet cells only (endocrine pancreas) [6].

Heterotopic pancreas can be found in all the GI tract departments. In more than 90% of cases, the stomach, duodenum, and jejunum are engaged. Aberrant locations are the colon, spleen or liver [4, 9]. More than 38% of the cases of heterotopic pancreas are localized in the stomach. Of these, 95% are found in the antrum and the large curvature [7]. The frequency according to the gastric layers is as follows:

- submucosa – 73%;
- muscle layer – 17%;
- subserose – 10%.

There are no publications in the literature on the localization of heterotopic pancreas in the stomach mucosa [8].

Clinical symptoms in pancreatic ectopia are determined by localization, size, and other accompanying pathological processes such as secretion of pancreatic enzymes, which are expressed in local inflammation. When hormones are released, they can affect endocrine functions. The lesions that are smaller than 15mm are asymptomatic until they develop inflammation or obstruction. At this point they are discovered by accident. Last but not least, the ectopic pancreas may become malignant as an adenocarcinoma or neuroendocrine tumor [1, 5].

In children, the clinical presentation is different. It develops with obstructive syndrome, invasion, and also with some congenital diseases such as granulous pancreas, oesophageal atresia, Meckel diverticulitis, malaria, choledochial cysts and extrahepatic bilateral atresia [13].

The endoscopic examination shows a well-defined submucosal tumor, sometimes with central “umbilication”, covered with intact mucosa. Therefore, the histological examination is non-informative; the final diagnosis is made after surgical or endoscopic resection [1]. The differential diagnosis includes: lymphoma, carcinoid, GISTs, and others.

The application of imaging methods such as computed tomography, nuclear magnetic resonance imaging and endoscopic ultrasound biopsy allows selection of the best surgical intervention [2]. The sensitivity of this study ranges from 80 to 100% [3,15].

The upper GI tract contrast test may show a typical image of a round-to-defect with a central dent. Nikolau et al. reported sensitivity of the method - 87.5% and specificity 71% [12].

Diagnosis is difficult, even intraoperative, due to the similarity of the heterotopic pancreas with GISTs, GANT, carcinoid, lymphoma and even gastric carcinoma. Express histological examination helps to avoid unnecessary resections [5].

CONCLUSION

Heterotopic pancreas is a rare pathology. It occupies the leading position among extra-muscular stomach lesions. The most accurate diagnostic methods are contrast ray scanning and endoscopic echography. Surgical removal of the tumor is the only radical treatment. The express intraoperative biopsy distinguishes it from the malignant diseases of the GI tract.

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