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Resection of Pancreatic Heterotopia Mass in the Stomach

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Authors' contributions

This work was carried out in collaboration among all authors. Authors MG, AA and BA designed the study and wrote the first draft of the manuscript. Authors MG and MAA managed the literature searches and revised the paper. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Heterotopic pancreas (HP) or ectopic pancreas is the presence of pancreatic tissue in anomalous location without any anatomic, vascular or neural continuity with the main body of the pancreas. We present here a case of a female who had a chronic abdominal epigastric pain. She had conservative treatment for two years .We diagnosed HP in the stomach. She had also sludge in the gallbladder. We performed laparoscopic cholecystectomy as well as we resect HP with clear margins in one procedure. Our patient was fully recovered and her pain vanished.

Keywords: Heterotopic pancreas; ectopic pancreas; pancreatic choristoma; pancreatic rest.

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1. INTRODUCTION

Heterotopic pancreas (HP) which also referred to as ectopic pancreas, pancreatic choristoma, or pancreatic rest, is defined as the presence of pancreatic tissue in an anomalous location without any anatomic, vascular, or neural continuity with themain body of the normal pancreas [1].

The earliest report that thought to describe HP was written in 1727 by Jean Schultz, although it is not authentic and there was no proof that the nodule found was pancreatic. It was interesting from a historical standpoint. Schultz wrote that he found at autopsy in a new-born child "a wart similar to a gland" in the apex of a cone-shaped diverticulum of the ileum.

The diverticulum was 4 cm. long and was situated 10 cm. from the ileocecal valve. However, Klop was the first to confirm HP with histological data in 1859 [2]. HP can be found along the gastrointestinal tract. However, it is commonly located in the upper portion of it [3,4] Most patients having HP are asymptomatic. The histologic studies of resected specimens reveal the presence of HP [5,6].

2. CASE PRESENTATION

A 28-year-old female came to our clinic at Al-Assad University Hospital. She had an abdominal epigastric pain which had begun two years ago. She had taken analgesics and antispasmodics with no improvement. She described her pain as colic and spread to the right hypochondrium. It was accompanied with nausea and sometimes vomiting. It was not relevant to food. Examination revealed a positive Murphy's sign.

She was admitted to the hospital. Laboratory tests were all normal. Echography showed nothing abnormal but some sludge in the gallbladder. Gastroduodenoscopy showed a submucosal bulge covered with normal mucosa in the antrum of the stomach which extended one centimeter long.

Endoscopic ultrasound (EUS) was done and revealed a hypoechoic formation consisting of ductal structures, originated from the second and third layer of stomach wall (submucosa and muscularis) and didn't invade the lamina propria. It measured 9.5*5.7 mm and it was suspected to be a heterotopic pancreas. Fig. 1. Computed Tomography (CT) showed no lesions in other organs.

We decided surgery and prepared the patient for general anesthesia. Gastroduodenoscopy was first performed to inject the mass with blue dye in order to easily localizing it during surgery.

Then laparoscopy was achieved in which we dissected the greater omentum at the antrum and body of the stomach to exposure the greater curvature clearly. An antral mass was noticed, it was resected with clear margins around it using Endo GIA. We also performed a chole cystectomy.

Histological study confirmed the presence of benign heterotopic pancreatic tissue with ducts and Langerhans islets. Fig. 3. The patient stayed for 3 days at hospital and then discharged. The abdominal pain completely vanished.

3. DISCUSSION

Many theories attempted to describe the pathogenesis of HP. One of the most accepted mechanism to explain HP was suggested by Hogan who proposed that pancreatic buds' attachments to intestinal wall fail to separate from it, even after the pancreas separates from the gut [7]. However, the presence of HP at distant sites, such as the mediastinum and lungs, has led others to explore alternative theories such as pancreatic tissue metaplasia [8,9].

The estimated incidence of HP ranges between 0.2% and 0.8% in surgical patients while autopsy studies reveal an incidence rate of 0.6-14% [10,11].

It has been reported that HP is more common in patients 30-50 years old, with a slightly predominance in male patients [12].

85% to 90% of ectopic pancreatic tissue is located in the upper gastrointestinal tract [3,4], the most common sites for HP are the stomach (24-38%), the duodenum (9-36%), and the jejunum (0.5-27%). The ileum is reported to be involved in (3-6%), and Meckel's diverticulum is the site in (2-6.5%) [13].

Distal small bowel, omentum, and mesentery are less common locations [14]. Involvement of mediastinum, lungs, liver, gallbladder, spleen, esophagus, fallopian tubes, and Meckel’s diverticulum are very rare [15].

Diagnosis of heterotopic pancreas before surgery is rare.

Most cases of HP are accidentally discovered and only patients with heterotopic tissue greater than 2 cm in diameter might have chronic symptoms [16,17]. Though symptoms tend to be dependent on the location, the most common symptoms are epigastric pain (77%), abdominal fullness (30%), diarrhea, nausea, crampy abdominal pain, weight loss and tarry stool [17,18,19]. Endoscopy often shows a submucosal bulge covered with normal mucosa which hampers the diagnosis [20]. Endoscopy and biopsy are often inconclusive [20,21].

The most accurate way to study submucosal lesions is endoscopic ultrasound (EUS). Typical findings include a hypoechoic lesion with indistinct borders [22]. Uncommonly, EUS reveals anechoic duct-like structures [23]. CT appears to be of little diagnostic value [24].

Our patient's mass was less than 2 cm but could be the source of her pain since her pain was not specific to normal biliary colics .It was mostly epigastric and was not relevant to any kind of food.

Heterotopic pancreatic tissue can be divided into three histologic groups according to Heinrich's classification: [25].

(1) Type I is tissue with acini, excretory ducts, and islets of Langerhans;
(2) Type II tissue contains acini and ducts, but no islets;
(3) Type III tissue consists of ducts only. Limited surgical excision has been shown to be safe and adequate procedure for patients with HP, and it is possible to exclude malignancy and treat the symptoms [26].

Accidentally diagnosed HP that doesn't cause symptoms or complications can be treated conservatively in addition to appropriate follow-up [26]. If symptoms develop, complete surgical excision should be achieved either by open or laparoscopic surgery [27].

Though the clinical significance of HP is debatable, the ectopic pancreatic tissue has the same histology as normal pancreas and has been described to have the same functionality as genuine pancreas [28]. Moreover, this ectopic tissue may undergo the same pathological changes such as chronic pancreatitis or malignant transformation [29]. Malignant transformation of HP is very rare, but it has been reported in several cases [28,29]. Our patient was diagnosed with HP before the surgery. She was referred to surgery after failure of conservative treatment. She underwent cholecystectomy in addition to HP resection safely.

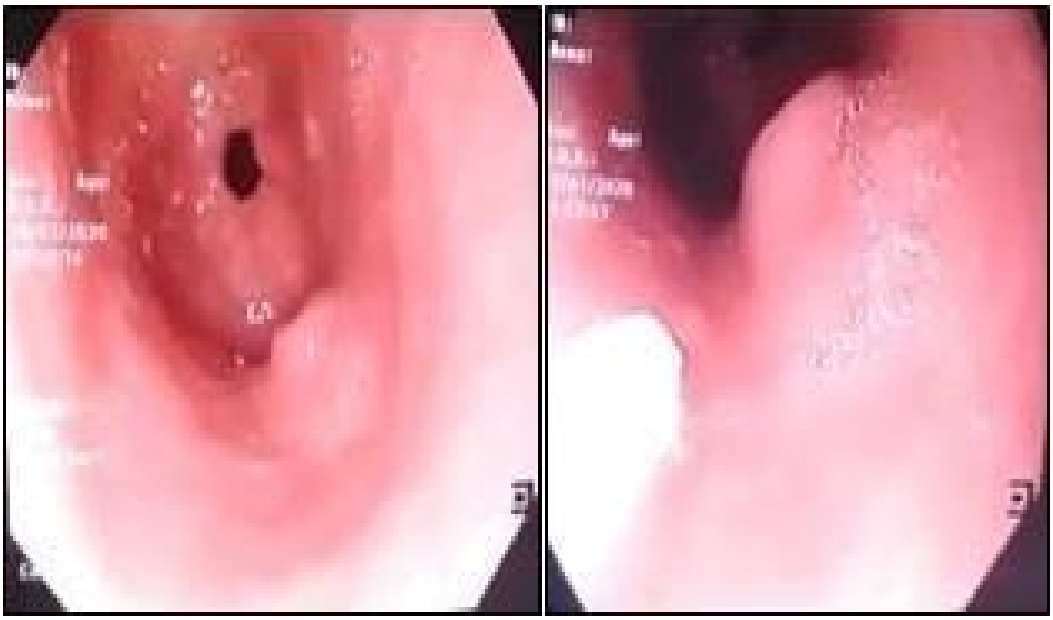

Fig. 1. Gastroduodenoscopy revealed a submucosal bulge (9.5*5.7 mm) covered with normal mucosa

Fig. 2. Gastroduodenoscopy to inject the mass with blue dye

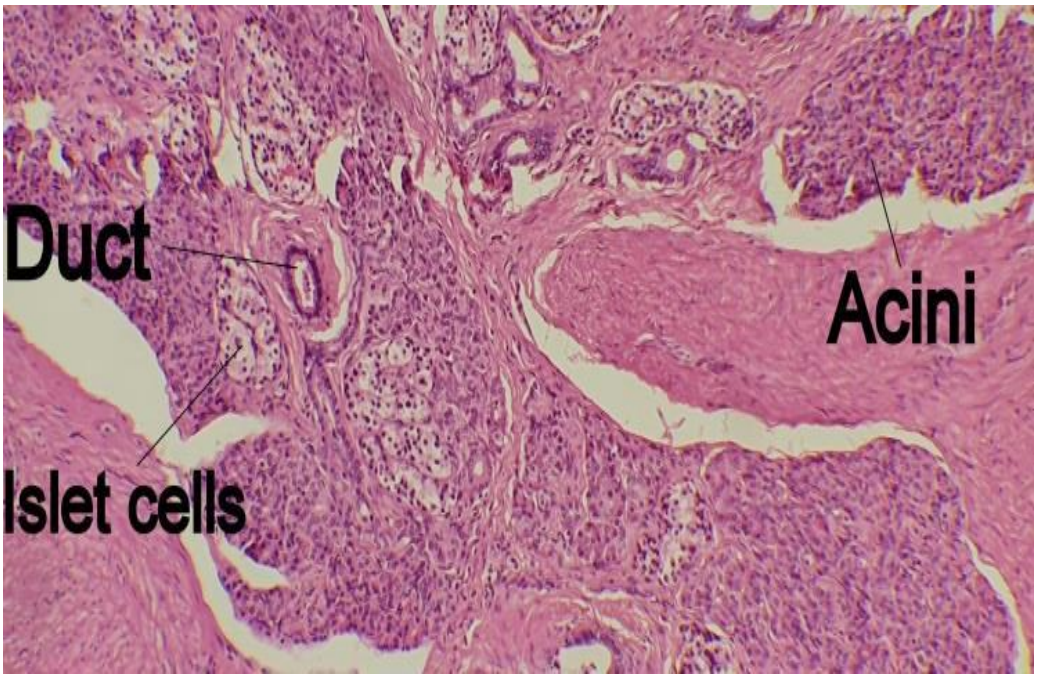

Fig. 3. photomicrograph showing acini, ducts and islet cells of HP

4. CONCLUSION

HP is generally asymptomatic and should be considered for the differential diagnosis of GI lesions and surgery should be considered, especially in symptomatic cases. Limited surgical excision with clear margins is safe and adequate to exclude malignancy and treat the symptoms.

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline participant consent and

ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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