Case Report

Cytology Findings in Pancreatic Heterotopia, a Potential Pitfall For Malignancy: A Case Report and Literature Review

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ABSTRACT

Pancreatic heterotopia is a rare congenital disorder occurring at a variety of sites in the gastrointestinal tract. It is rarely symptomatic. Despite advances in diagnostic techniques, it still remains a challenge to the clinician to differentiate it from a neoplasm. Cytologic characteristics of pancreatic heterotopia in general are rarely described in the literature. We report the cytologic characteristics of heterotopic pancreatic tissue at the gastric outlet in a 48-year-old female. The patient underwent surgical excision due to symptoms related to the lesion. Endoscopic ultrasound fine-needle aspiration is increasingly used for the diagnosis of gastrointestinal tumors, which makes the recognition of certain endoscopically unreachable lesions an important step in optimal patient management.

Key Words: Cytology of heterotopic pancreas, endoscopic ultrasound-guided fine-needle aspiration, EUS-FNA, heterotopic pancreas, histopathology of ectopic pancreas

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Pancreatic heterotopia is usually an asymptomatic condition that is encountered infrequently when evaluating patients for other reasons. It is usually identified as a subepithelial lesion in the upper gastrointestinal tract. When present in a symptomatic patient, evaluation by modalities that distinguish this lesion from other pathologies that would require surgical intervention is crucial to avoid unnecessary morbidity.

CASE REPORT

A 48-year-old woman presented with a few months history of chronic dyspepsia and epigastric abdominal pain and discomfort. Her past medical history was unremarkable. Her physical examination on initial presentation revealed minimal tenderness in the epigastric region with no peritoneal signs. Vital signs were stable. Laboratory examination showed no biochemical abnormalities. A gastroscopy was performed and demonstrated a subepithelial lesion that was about 3 cm in size at the prepyloric area on the greater curvature of the stomach. Computed tomography scan of the abdomen and pelvis with oral and intravenous contrast showed an ill-defined, 3 cm, deeply seated mass at the gastric antrum. There was neither infiltration of the surrounding adipose tissue, nor perilesional lymph node enlargement.

An endoscopic ultrasound (EUS) examination demonstrated a 3 cm localized, intramural mass in the prepyloric region. It showed a heterogeneous appearance with an indistinct margin and mainly a hypoechoic parenchyma. Fine-needle aspiration cytology material was obtained.

Cytology

Air-dried slides were first examined in the endoscopy suite using the Diff-Quik method to assess for adequacy. This was followed by processing other slides for fixation with 95% ethanol and staining by the Papanicolaou method. The smears revealed plentiful clusters of benign-appearing, uniform, cohesive, medium-sized epithelial cells with moderate amounts of granular cytoplasm and small to medium slightly hyperchromatic nuclei with delicate and thin membranes, and inconspicuous nucleoli [Figure 1a]. Some clusters showed peripherally located nuclei mimicking acinar architecture [Figure 1b]. Neither frank nuclear pleomorphism, nor mitotic activity was identified. The chronicity of her symptoms and persistence of gastric wall thickening prompted a decision to proceed with surgery. The

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patient underwent surgery. Intraoperatively, the patient was diagnosed to be a solid deeply seated intramural lesion (3 cm in diameter) located in the distal part of the stomach, without infiltration of other organs. Regional lymph nodes revealed no abnormalities.

Gross and histopathology

The resected specimen measured 14 × 7 × 4 cm with attached perigastric fat measuring 5 cm in maximum thickness. Cut sections revealed a subserosal, well-circumscribed tan/yellow 3 cm solid mass with central cystic change [Figure 2].

Histopathologic examination of the hematoxylin and eosin permanent slides of the mass showed pancreatic heterotopia with ducts, acini, islets of Langerhans, and intervening connective tissue [Figure 3]. Areas of focal chronic inflammatory reaction and fibrosis were seen. The postoperative course proved uneventful.

DISCUSSION

Heterotopic pancreas is a rare pathological entity that poses a challenge for clinical diagnosis and management. It is defined as the growth of pancreatic tissue outside of the pancreas, with no anatomic or vascular connection with normal pancreatic tissue.[1,2] It has been identified in a variety of sites in the gastrointestinal tract. Common locations include the gastric antrum, jejunum, and Meckel's diverticulum.[3]

It tends to present as a submucosal lesion in the majority of cases but sporadically also in the muscularis propria and subserosa.[4] Clinical differential diagnoses often include malignancy. Most of the patients with pancreatic heterotopia are asymptomatic; however, some of them may present with a variety of symptoms, most commonly epigastric pain, abdominal distention, and gastrointestinal bleeding in 60%, 15%, and 30%, respectively.[5] Symptomatic cases (obstructive, hemorrhagic, chronic pain) and neoplastic transformation requires surgical intervention.[6-9]

EUS-FNA has been found to be valuable in the diagnosis of upper gastrointestinal tract lesions.[10] Described EUS features of pancreatic heterotopia include irregular borders and heterogeneous echogenicity. Cytologic characteristics of pancreatic heterotopia in general are rarely described in the medical literature and should be made separate from pancreatic acinar metaplasia.

In contrast to pancreatic heterotopia, pancreatic acinar metaplasia consists of small islands of pancreatic acini. Because pancreatic heterotopia is typically a submucosal lesion, preoperative diagnosis is technically difficult. It is

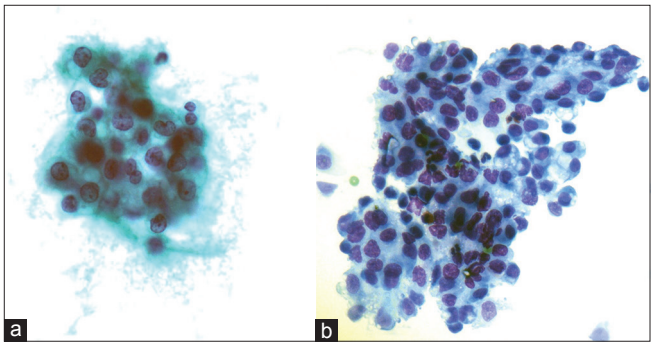

Figure 1: (a) Monotonous medium-sized epithelial cells with moderate amount of granular cytoplasm and bland looking nuclei and inconspicuous nucleoli (Papanicolau stain, original magnification ×400). (b) Clusters of benign-looking epithelial cells, mimicking acinar architecture (Diff Quick stain, original magnification ×400)

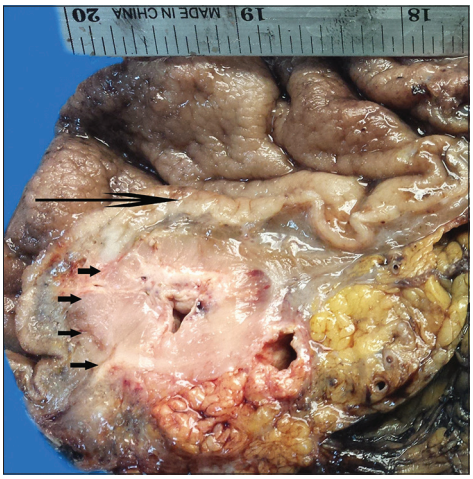

Figure 2: Gross photo shows well-circumscribed deeply seated mass (short arrows) with central cystic-like change and the outlining thickened mucosa (long arrow)

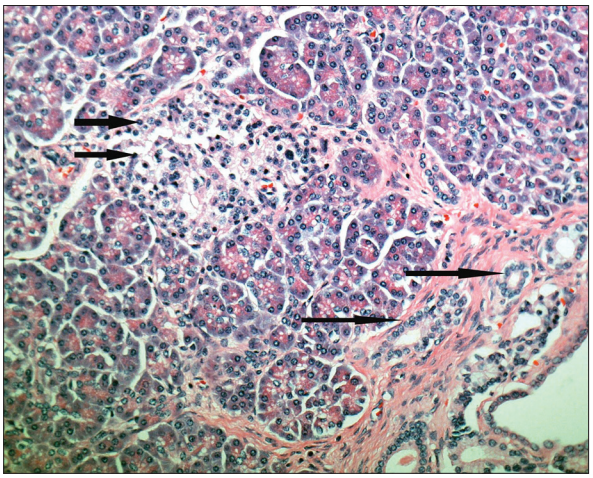

Figure 3: Histopathologic section reveals the essential components of pancreatic heterotopia including acini, ducts (long arrows), and Islets of Langerhans (short arrows)

crucial for the cytopathologist to become familiar with the appearance of certain benign lesions such as pancreatic heterotopia that are rarely encountered in daily practice; such lesions may be misdiagnosed as malignant on cytologic preparations. Cytologically, differential diagnoses of pancreatic heterotopia include adenocarcinoma and neuroendocrine tumors. A few cases[9,11] of malignant transformation of heterotopic pancreas have been reported. Histopathologic examination shows pancreatic acini, ducts, islets of Langerhans, and intervening connective tissue.

In summary, we present the cytologic findings obtained by EUS-FNA of a patient with heterotopic pancreas seated deeply as a solid mass in the gastric wall. It is essential for the cytopathologist to be aware of the appearance of certain benign lesions such as pancreatic heterotopia, that are rarely encountered in daily practice, to avoid the misdiagnosis of malignancy.

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