LESS

Case Report

Laparosc Endosc Surg Sci 2021;28(2):121-124
DOI: 10.14744/less.2021.24471

A case with annular pancreas and accompanying ectopic pancreas

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ABSTRACT

Congenital anomalies of the pancreas are quite common. The cases may present with different symptoms at different ages. While severe forms cause more noisy pictures in infancy and early childhood, mild forms may give symptoms in adulthood or they may be completely asymptomatic. Being aware of these anomalies guides clinicians in terms of diagnosis in clinical approach and helps prevent undesirable complications, especially during biliary, liver, and pancreatic operations. This case report aimed to present a case with annular pancreas and accompanying ectopic pancreas presenting in adult age with complaints consistent with severe upper gastrointestinal system obstruction with clinical, radiological, and endoscopic findings.

Keywords: Annular pancreas; congenital pancreatic anomalies; duodenal obstruction; ectopic pancreas; endoscopy.

Introduction

Annular pancreas is a morphological and functional pathology caused by the total or partial encompassing of the second part of the duodenum of the pancreas. Clinical findings and presentation time of the cases differ according to the degree of obstruction.[1] The ectopic pancreas is the localization of pancreatic tissue in a different place and can also be called aberrant, accessory, or heterotopic pancreas.[2] Although the cases are generally asymptomatic and detected incidentally, the diagnosis is important in terms of gastrointestinal stromal tumors in the differential diagnosis.[2]

To the best of our knowledge, in the literature, there is no other case report presenting the annular pancreas and ectopic pancreas together in the same case. Therefore, we aimed to present demonstrative imaging findings of ectopic pancreas found incidentally in MRI and endoscopic examination in our case, who had signs of obstruction due to annular pancreas and whose complaints regressed after the operation.

Case Report

A 50-year-old male patient, who had no known chronic disease or history of drug use, was admitted to our clinic with the complaint of epigastric pain awakening from sleep for the past 2 months. Clinical examination and laboratory tests were unremarkable. In the intravenous and oral contrast-enhanced abdominal tomography, it

Received: 07.05.2021 **Accepted:** 06.06.2021
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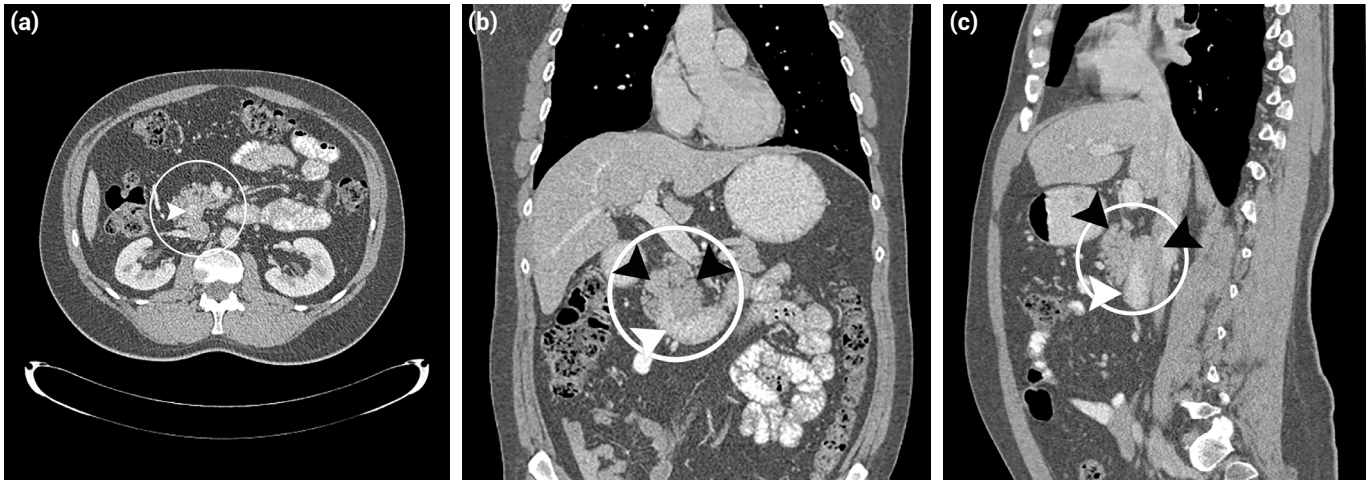

Figure 1. (a) Axial (arrowhead duodenum), **(b)** coronal (black arrowhead pancreas, white arrowhead duodenum), **(c)** sagittal CT images of the duodenum surrounded by the annular pancreas (black arrowhead pancreas, white arrowhead duodenum).

was observed that approximately 4 cm segment of the second part of the duodenum was circumferentially surrounded by the pancreas, and the lumen caliber of the duodenum in the second segment decreased to a level of approximately 1 cm in this section and was evaluated by the annular pancreas (Fig. 1). It was observed that the lumen caliber of the small intestine loops after the third part of the duodenum and after the Treitz ligament was within physiological limits. Endoscopy revealed a sessile polypoid lesion containing umbilicus in the middle of the ectopic pancreatic tissue at the level of the stomach antrum. The distal of the second part of the duodenum could not be passed with endoscopy (Fig. 2). In the MRCP examination performed to exclude possible biliary pathologies, findings compatible with the annular pancreas were observed, and the polypoid formation of the ectopic pancreatic tissue in the stomach antrum could also be visualized (Fig. 3). Roux-en-Y duodenojejunostomy was performed in the case with complete obstruction findings. The patient's complaints did not recur after the operation.

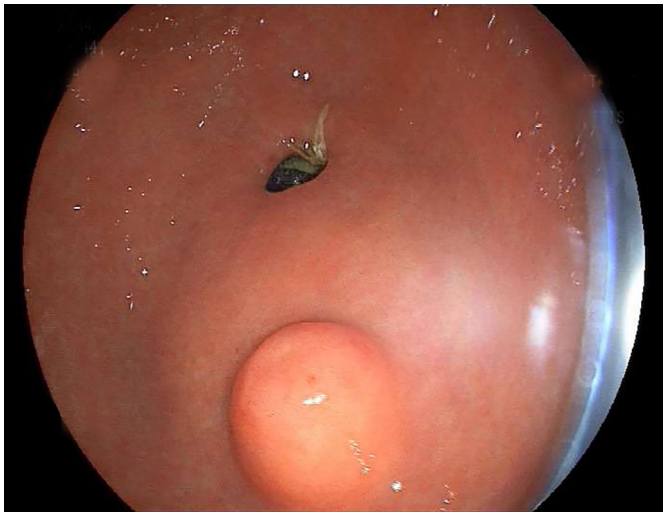

Figure 2. Sessile polypoid ectopic pancreatic tissue with umbilicus in the central detected in the antrum during endoscopy.

Discussion

Embryology

Pancreas occurs by the fusion of ventral and dorsal roots connected to the foregut in the embryological period. The ventral root joins with the dorsal root as a migrated rotation from the posterior of the duodenum to the left. The ventral part forms the pancreatic head and uncinate part and opens to the duodenum at the level of the papillae vateri through the Wirsung duct, which is the main pancreatic duct (Fig. 4).[3] The dorsal part forms the corpus and tail part of the pancreas and usually drains into the Wirsung duct via the Santorini duct, which is the accessory pancreatic duct, or it can be opened separately to the duodenum with the papilla minor.[1,3] Here, some congenital anomalies and variations occur with the fusion or migration anomaly of these ventral and dorsal roots.[1] Pancreatic divisum, annular pancreas, ectopic pancreas, pancreatic aplasia, or hypoplasia are the most common of these.[1,4] In the annular pancreas, it occurs when the ventral root can not combine with the dorsal root as a result of insufficient rotation and migration, and it forms a circumferential pancreatic ring around the duodenum.[5] Ectopic pancreas is also a migration anomaly of the pancreas and is most commonly found in the stomach, duodenum, and jejunum submucosa.[6]

Clinical Findings

The annular pancreas presents with severe duodenal obstruction signs such as gushing vomiting and feeding in-

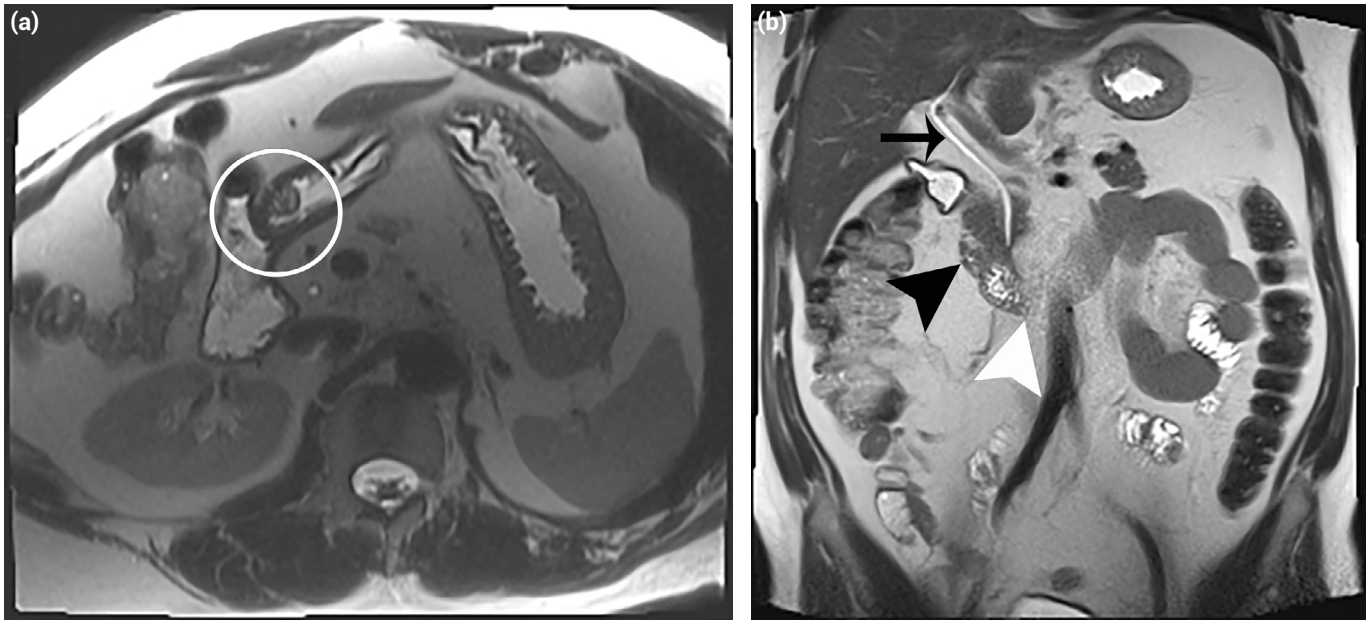

Figure 3. (a) Ectopic pancreas showing protrusion to the stomach lumen at the level of the great curvature of the stomach antrum in the T2-weighted axial section, **(b)** Note that there is no significant dilatation in the ductus choledochus (thin arrow ductus choledochus, black arrowhead pancreatic uncinate process, and white arrowhead duodenum).

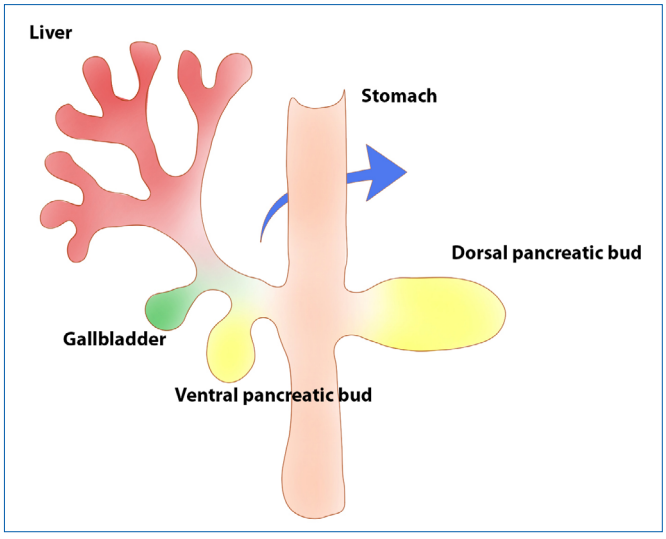

Figure 4. Embryological formation of the pancreas.

tolerance after feeding in early childhood.[5] In adulthood, it may present with abdominal distension, postprandial pain, gastric outlet obstruction, and vomiting. In milder forms, they may remain asymptomatic throughout life and can only be detected by imaging methods.[1] The ectopic pancreas is usually asymptomatic and is detected incidentally by endoscopy. Rarely, they may cause intussusception, bleeding, or obstruction.[1]

Imaging Findings

In the annular pancreas, the diagnosis is usually made by observing the pancreatic tissue surrounding the duodenum in cross-sectional imaging methods such as CT or MRI.[1] Evaluation with MRCP is important in terms of accompanying pancreatic duct anomalies, variations, or biliary tract pathologies.[1] Ectopic pancreatic tissue, which is usually diagnosed incidentally in endoscopic examinations, is usually seen as a sessile nodular formation with an umbilical opening representing the rudimentary pancreatic duct opening in the center, while it can be detected as a smooth contoured filling defect in barium passage radiographs.[7]

Treatment

Treatment modalities vary according to clinical complaints and severity of the obstruction.[8] If the obstruction is in the foreground, as in our case, surgical treatment is an option. In asymptomatic cases, conservative or medical treatments are usually sufficient.[8]

Disclosures

Informed Consent: Written informed consent was obtained from the patient for the publication of the case report and the accompanying images.

Peer-review: Externally peer-reviewed.

Conflict of Interest: None declared.

Authorship Contributions: Concept – M.E., S.K., D.E.T.S.; Design – M.E., S.K., D.E.T.S.; Supervision – M.E., S.K., Fundings: A.N.E., M.E., S.K., D.E.T.S.; Materials –

M.E., S.K., A.N.E.; Data collection and/or processing – M.E., S.K., A.N.E.; Analysis and/ or interpretation – M.E., D.E.T.S.; Literature search – D.E.T.S.; Writing – D.E.T.S.; Critical review – M.E., S.K.

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