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Unusual presentation of annular pancreas as gastric outlet obstruction in an adult female: A rare case report

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Abstract

Annular pancreas (AP) is a rare congenital anomaly, usually present in childhood, with symptoms due to duodenal obstruction; however, this condition can manifest in adulthood with abdominal pain, gastric outlet obstruction, pancreatitis and pancreatic head mass. A 35-year-old female patient presented as vomiting and epigastric fullness after intake of food. Diagnosis was confirmed with contrast enhanced CT scan of the abdomen. Patient successfully underwent Gastro-Jejunostomy with uneventful postoperative recovery. Though rare, annular pancreas should be considered as differential diagnosis in patient presenting as gastric outlet obstruction after excluding common causes.

Keywords: Unusual presentation, pancreas as gastric outlet obstruction

Introduction

Annular pancreas (AP) is a congenital anomaly which consists of a ring of pancreatic tissue encircling the descending portion of the duodenum. This malformation once considered rare ^[1] has been reported with increasing frequency in the adult population ^[2]. In some reports, clinical manifestations appear after childhood in 50% of the cases ^[3].

Despite the congenital nature of the disease, the clinical manifestations may ensue at any age. Furthermore, it is estimated that two thirds of the patients remain asymptomatic for life ^[4]. In infancy or later in childhood, symptoms, when present, depend upon duodenal obstruction. In adulthood, clinical manifestations occur during the 3rd or 4th decades ^[5]. Presenting symptoms in adults are most frequently pain, vomiting, gastro-duodenal ulceration and pancreatitis ^[6]. Duodenal obstruction symptoms in infancy and clinical manifestations in adult age in the same patient have not been described in the literature.

Case report

A 35-year-old female stayed asymptomatic until the age of 34 when she presented several episodes of postprandial epigastric pain with back and intermittent vomiting of 3-month duration. During the last year, she lost weight around 5 kg. Upon admission in our unit, physical examination was unremarkable. The endoscopic evaluation of the upper gastrointestinal tract showed only Antral gastritis otherwise it was normal. USG whole abdomen showed over distended stomach and proximal duodenum with collapsed distal small bowel loops possibility of superior mesenteric artery syndrome. Abdominal contrast enhanced CT showed that pancreatic tissue was completely surround the second part of duodenum leads to duodenal narrowing and dilatation of proximal duodenum and stomach suggestive of complete annular pancreas. The pancreas appeared normal in the size and enhancement. The per pancreatic fat also appeared normal. No per pancreatic collection seen. Distance between superior mesenteric artery and aorta was 10 mm within normal limit.

Due to the intensity of symptoms, operative treatment was indicated.

On exploration, pancreatic tissue was completely encircling the second part of duodenum leads to duodenal narrowing and dilatation of proximal duodenum and stomach. The Gastro-Jejunostomy was successfully done. Postoperative period was uneventful and patient discharged in clinical satisfactory condition at the 12th postoperative day. At the moment of this writing, the patient is free of symptoms after 1 month of follow-up.

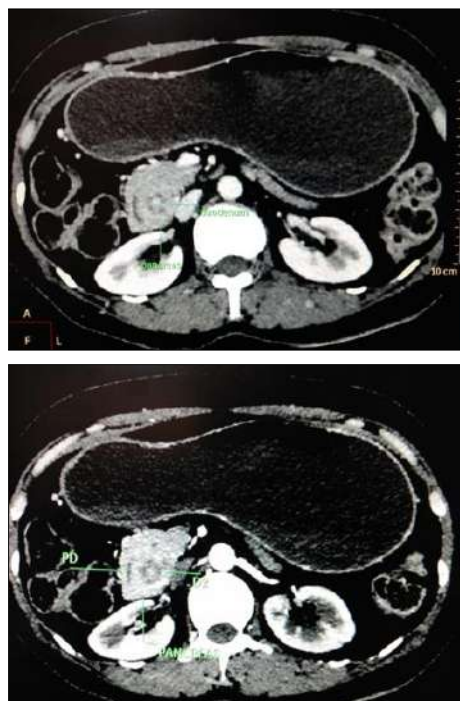


Fig 1: Contrast enhanced CT of abdomen revealing complete annular pancreas

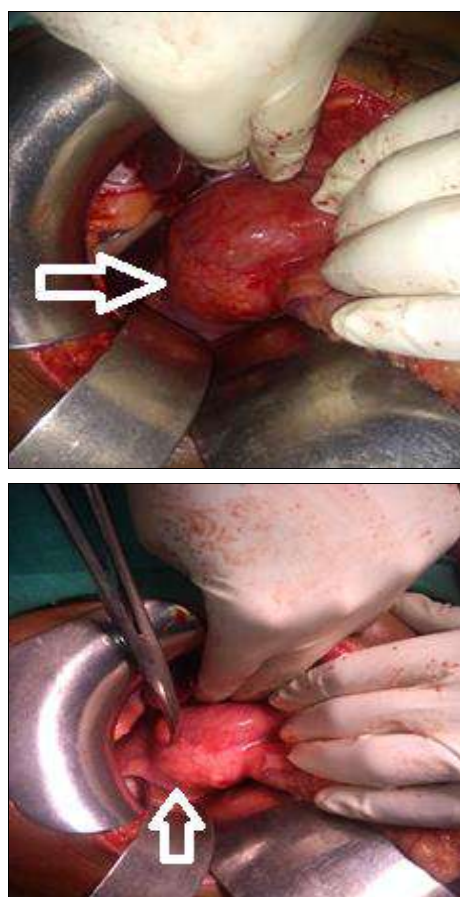


Fig 2: Showing intraoperative finding of complete annular pancreas

Discussion

With the improvements achieved in imaging techniques, the diagnosis of AP in adults increased in frequency^[7], men being affected more commonly than women^[4, 8]. There is still much controversy on the pathogenesis of AP. The two most important hypotheses concerning its formation are Lecco's^[9] and Baldwin's^[10] theories. Lecco postulated that

adhesion of the distal tip of the ventral primordium to the duodenal wall, before its migration, originates the pancreatic obstructing ring whereas Baldwin stated that persistence and further development of the left ventral bud is responsible for the formation of the annular pancreatic tissue around the duodenum^[10, 11].

Clinical features of AP vary according to the time of symptom onset^[2, 5]. In infants it is characterized by severe duodenal obstruction that requires immediate surgical intervention. On the other hand, in some cases, the obstruction may be of such minimal degree that the patient remains symptomless for life. When clinical manifestations ensue at adult age, symptoms include cramping epigastric pain, postprandial fullness and relief with vomiting^[12]. Besides, peptic ulcer disease, acute and chronic pancreatitis, obstructive jaundice and gastric outlet obstruction may also be associated conditions in AP^[13, 14]. In our case there was complete gastric outlet obstruction without any features of acute or chronic pancreatitis.

The preoperative diagnosis of AP has evolved considerably due to the development of new diagnostic imaging tools.

The main goal of surgical treatment of AP is the relief of duodenal or gastric outlet obstruction, and several procedures have been proposed with this intent^[12]. Division or resection of the pancreatic annulus as used in the past is not advised because of a high incidence of duodenal leak, postoperative pancreatitis and pancreatic fistula^[12]. Bypass surgery of the annulus by duodenostomy, gastrojejunostomy or duodenojejunostomy seems to be the preferred method of treatment^[7, 12]. In the present case gastrojejunostomy was performed with 75 mm linear cutter stapler.

Pancreatic resection for relief of duodenal obstruction in AP is rarely indicated^[16]. Pancreaticoduodenectomy has been recommended when AP is associated with pancreatolithiasis^[17].

Conclusion

Annular pancreas is rare entity. It should be kept in mind in new born children as well as in adult population. Symptoms may occur in adults due to duodenal obstruction by annular pancreas. It may diagnosed radiologically or intra operatively. Surgical treatment of annular pancreas is indicated only in case of duodenal obstruction.

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