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A Rare Case of Duodenal Obstruction: Annular Pancreas in a 22 Years Old Patient: Case Report

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Abstract **Case Report**

Annular pancreas is a rare congenital condition in which a ring of ectopic pancreatic tissue partially or completely surrounds the second part of the duodenum [1]. This Congenital anomaly is usually presented in infants and newborn, rarely in adult life. It can present in a wide range of clinical severities making it difficult to diagnose. CT scan can illustrate the pancreatic tissue encircling the duodenum. Surgery still remains necessary to confirm diagnosis and bypassing the obstructed segment. We report the case of a 22 years old female patient who presented with history of vomiting and weight loss causing a stature weight growth delay, the diagnosis was made by the CT scan. Then the patient was scheduled for a gastroenteroanastomosis. The evolution was favorable.

Keywords: Annular pancreas, ectopic pancreatic tissue, adult life, CT scan, diagnose, gastroenteroanastomosis.

INTRODUCTION

Annular pancreas (AP) is a rare congenital anomaly characterized by partial or complete circumferential encasement of the second part of the duodenum by a band of pancreatic tissue during embryogenesis.

Old studies have reported the prevalence of AP in three of 20,000 autopsies and three of 24,519 surgical cases [2]. Many individuals with this anomaly remain asymptomatic throughout their lifetime and are often diagnosed incidentally on imaging or during autopsies.

Yogi *et al*., classified AP into six subtypes with type I type demonstrating communication of APD (Annular pancreatic Duct) with the duct of Wirsung and type II showing the duodenum encircled by MPD (Main Pancreatic Duct). Types I and II are the most common subtypes with the other 4 subtypes being less frequently encountered and correspond to the communication of the APD with the duct of Santorini or the common bile duct (CBD) [3].

CASE REPORT

22 years old women presented an old history of post prandial vomiting responsible for failure to thrive, along with epigastric pain. There was no history of smoking or alcohol.

The patient was underweight (BMI: 19% kg/m2).

Esophagogastroduodenoscopy (OGD) revealed a stenosing narrowing between the second and third part of the duodenum, with dilated upper part of the duodenum.

A biopsy was taken, which was negative for malignancy.

The abdominal CT scan showed a solid pancreatic tissue surrounding the second portion of the duodenum, a distended stomach with air-fluid level, and dilated first part of the duodenum.

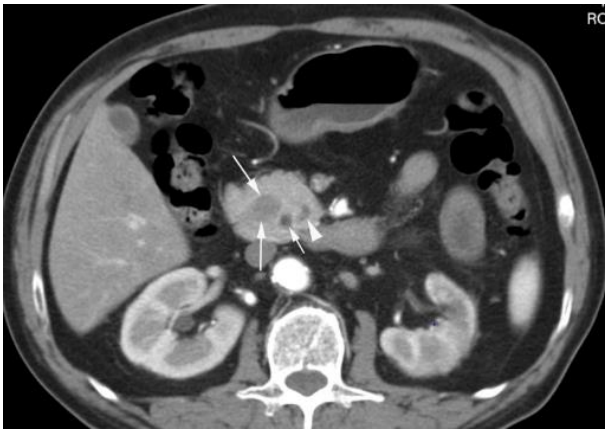

Figure 1: Axial CT image shows the pancreatic parenchyma encircling the second portion of the duodenum (large arrows)

We approached through a midline laparotomy, the exploration revealed a complete annular pancreas associated with massive dilatation of the stomach, pylorus, and upper part of the duodenum.

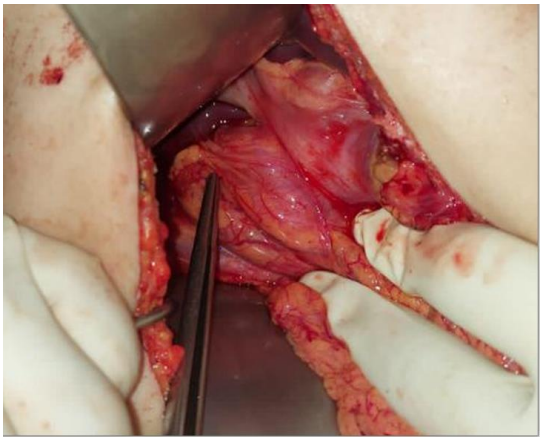

Figure 2: Pancreatic tissue surrounding the duodenum

A bypass procedure was performed through a gastrojejunostomy.

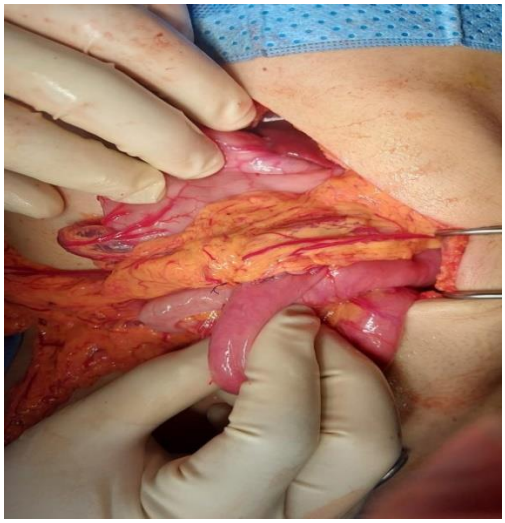

Figure 3: Gastro jejunostomy with epiploplasty

The patient was discharged 5 days after surgery. She gained 4Kg at 2-months follow-up and became asymptomatic.

DISCUSSION

The pancreas is normally formed from the fusion of the dorsal and ventral pancreatic buds between the first 4–8 weeks of embryonic life.

Annular pancreas results due to failure of the ventral bud to rotate and elongates to encircle the upper part of the duodenum.

It is usually located above the papilla of Vater in approximately 85% of diagnosed cases [4].

Many individuals with this anomaly remain asymptomatic throughout their lifetime and are often diagnosed incidentally on imaging.

Most cases are diagnosed presenting symptoms of gastric outlet obstruction [5]. Sometimes the obstruction is not significant until inflammation of the annulus narrows the duodenum, in other cases the diagnosis is incidentally made when the patient is evaluated for symptoms of pancreatitis or peptic ulcer disease [6].

Based on the morphologic distribution of pancreatic tissue, AP has been classified into a complete or incomplete type. Complete type AP shows pancreatic parenchyma or annular duct completely encircling the second part of the duodenum confirmed by macroscopic inspection, and incomplete type AP demonstrates partial circumferential encasement of the duodenum by pancreatic tissue confirmed by endoscopic retrograde cholangiopancreatography (ERCP) or surgical evaluation [7].

The imaging techniques used to AP are computed tomography (CT), endoscopic retrograde cholangiopancreatography (ERCP), and magnetic resonance cholangiopancreatography (MRCP) [8, 9].

Despite many advances in diagnostic techniques, the gold standard test for diagnosing AP remains to be laparotomy with a thorough gross examination of the duodenum and the head of the pancreas [10].

When the AP is symptomatic and associated with an effective duodenal obstruction, the treatment of choice is the surgical procedure: The preferred treatment is a by-pass operation such as gastro-jejunostomy or duodeno-jejunostomy.

Pancreatico-duodenectomy has been recommended only when an AP is associated with pancreaticolithiasis complicated by chronic pancreatitis [11].

CONCLUSION

Annular pancreas is one of the rare causes of duodenal obstruction in adults. Preoperative diagnosis is often difficult. CT scan, ERCP and MRCP are the imaging methods used for diagnosis. But still surgery is necessary to confirm the diagnosis and bypassing the obstructed segment.

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