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Adult Annular Pancreas Producing Duodenal Obstruction

KEYWORDS: Annular Pancreas,. Duodenal stenosis, Gastro-enterostomy.

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ABSTRACT *Annular Pancreas is a rare congenital abnormality, more often seen in the pediatric patient population. This abnormality results from failure of the ventral pancreatic bud normal migration during development. Ectopic pancreatic tissue persists, encircling the duodenum. Hence, this can lead to duodenal obstruction. Despite the fact that Annular pancreas is extremely rare in an adult patient population, annular pancreas deserves to be a part of a clinician's differential diagnosis. The author describes a 27 year old female presenting with annular pancreas. The Patient underwent surgical correction of the obstruction. A bypass of the ectopic pancreas tissue was performed by gastro- jejunostomy. Considering the rarity of this congenital abnormality presenting with chronic partial duodenal obstruction, and its successful correction by surgical means have prompted us to report the case.*

INTRODUCTION

Annular Pancreas is a rare congenital anomaly of the pancreatic ducts (1). This anomaly in due to incomplete rotation of the ventral pancreatic bud. Annular Pancreas is diagnosed with nearly equal frequency in children and adults (2). The factors initiating symptoms are recurrent pancreatitis, duodenal stenosis, and duodenal or gastric ulceration (3). One new case of duodenal obstruction due to annular pancreas in adult patient is presented.

CASE REPORT

A 27 year old woman presented with complains of repeated episodes of mild epigastric pain, nausea and vomiting. The symptoms had been present for more than 1year, but had become more frequent in the last three months. On examination, stomach was dilated with visible peristalsis over epigastrium. There was no organomegaly. There was no palpable mass per abdomen. Upper G.I endoscopy was performed which showed dilated stomach, dilated first and second part of duodenum with narrowing at D2-D3 junction. CECT scan revealed partial annular pancreas with focal pancreatitis (photo 1), hence a diagnosis of duodenal obstruction due to annular pancreas was made.

On exploration, we found hugely dilated stomach and duodenum up to second part. There was a rim of pancreatic tissue encircling whole circumference of second part of duodenum. We performed retrocolic side to side gastro-jejunostomy with jejuno-jejunostomy .The post operative period was uneventful and patient did not experience any vomiting. In follow-up, when last seen at 3 months post-operative, patient remained asymptomatic and gained weight.

Photo 1: Clawing of pancreas on duodenum obstructing its lumen (Black arrow) & dilated stomach.

DISCUSSION

Annular Pancreas is a rare congenital anomaly (the incidence is approximately 3 in 20,000) and it is the most common anomaly of the pancreatic ducts after pancreas divisum (2).

Three developmental theories explain the formation of an annular pancreas .Baldwin in 1910 suggested that there was a failure of atrophy of the left component of the ventral pancreatic anlage which maintains a true ventral connection (2). Lecco's theory suggests that the ventral pancreas adhered to surrounding tissues at its site of origin in the ventral mesogastrium maintaining a true ventral connection (4) .The Third theory, explained by Verga in 1972 (5), suggests that the primary abnormality is duodenal with the pancreas "Filling the Space" around a narrowed duodenum. This results in a complete or incomplete stenosis of the duodenal lumen.

The ring of normal pancreatic tissue produces symptoms when it obstructs the duodenum. It has been estimated that only about 33% of the cases are symptomatic. 50% of patients present in the pediatric age group, 86% of these present in the neonatal period. In adults, annular pancreas usually presents between age 20-50 years and is most commonly associated with abdominal pain and gastric outlet obstruction, secondary to duodenal stenosis. Additional presentations including pancreatitis, peptic ulcer disease and obstructive jaundice have been reported. Annular pancreas associated with a pancreatic tumor has also been reported (3). The diagnosis is usually made with computed tomography scanning and confirmed with upper gastrointestinal contrast fluoroscopy (6).

The treatment of annular pancreas is surgical, with various procedures being used: gastro-enteral anastomosis and truncal vagotomy; latero-lateral anastomosis of the pyloroduodenal portion with the jejunum; duodeno-duodenal anastomosis; duodeno-jejunal anastomosis with Roux en y loop; and separation & resection of the annular pancreas.

Separation of the annulus is associated with serious complications as pancreatic annulus often contains a duct that

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is sometimes adherent tightly to the duodenal wall and also, frequent associated duodenal malformation explains the abandonment of pancreatic ring resection as a method of surgery.

Now a days, annular pancreas is a rare congenital anomaly. Easy availability of CT scan imaging makes earlier and confident diagnosis. It has been found that about 33% cases are asymptomatic. In adults, annular pancreas usually presents between age 20-50 years and is most commonly associated with abdominal pain and gastric outlet obstruction secondary to duodenal stenosis. The treatment of annular pancreas is surgical, bypassing the obstructed duodenum. Gastroenterostomy is a simple operation performed frequently and have the best results.

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