ORIGINAL RESEARCH PAPER

Radiodiagnosis

INCIDENCE OF CONGENITAL PANCREATIC ANOMALIES ON CROSS SECTIONAL IMAGING AND THEIR DIVERSE CLINICAL PRESENTATIONS.

KEY WORDS:

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INTRODUCTION:

Congenital anomalies of the pancreas are commonly encountered at radiologic evaluation and can simulate a variety of conditions and may manifest with rather uncommon presenting features which may pose a diagnostic challenge for the radiologist. Hence familiarity with these entities, their variable presentation and imaging manifestations is important to avoid misdiagnosis.

AIMS:

1. To review the salient features of various congenital pancreatic anomalies.
2. To highlight the diversity of clinical presentations of such anomalies to avoid misdiagnosis.
3. To assess the incidence of various pancreatic anomalies.

METHODS:

This study was conducted in the Department of Radio diagnosis at D Y Patil Hospital, Nerul, Navi Mumbai. The study was conducted over a period of one year.

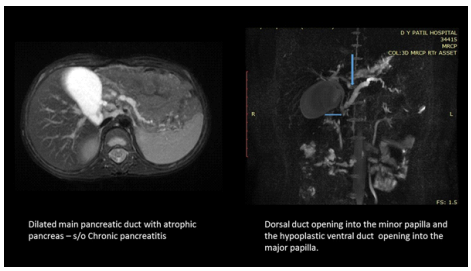
All possible cases of congenital pancreatic anomalies were evaluated by CT scan and MRCP studies. Special emphasis was given on the clinical presentations of these anomalies.

GE optima 128 slice CT scanner and 1.5 Tesla GE MRI scanners were used.

RESULTS:

Pancreatic divisum was the most commonly encountered of all the anomalies. Of the six patients with pancreatic divisum, 4 were asymptomatic and 2 presented with chronic nonspecific abdominal pain. Five patients had partial dorsal agenesis of pancreas. Off these, 3 patients were asymptomatic, 1 had early onset diabetes mellitus and 1 presented with acute epigastric pain which was later diagnosed with acute pancreatitis. A middle aged patient who presented with imaging features of gastric outlet obstruction, was diagnosed with annular pancreas.

CASE 1: A 45 year old male patient came with long standing epigastric pain.
He gives history of 3 episodes of acute pancreatitis over a span of 5 years.On MRCP we see;



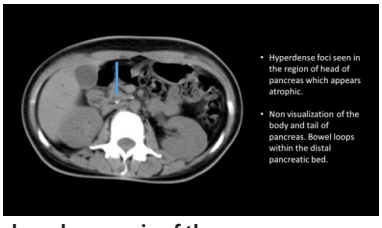
DIAGNOSIS: Pancreatic Divisum

CASE 2: 38 year old male patient with non-specific abdominal pain.

DIAGNOSIS: Pancreatic Divisum

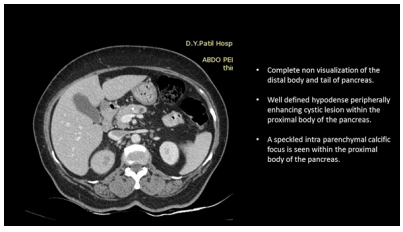
- After the left ventral bud disappears, the right ventral bud rotates around the duodenum and fuses the dorsal bud. The ventral and dorsal pancreatic ducts fail to fuse together.
- Most common congenital anomaly of the pancreas.
- The body, tail, and part of the head of the pancreas (dorsal pancreas) drain through Santorini's duct into the minor papilla, while another part of the head (ventral pancreas) drains through Wirsung's duct into major papilla.
- Short and rudimentary ventral duct in pancreas divisum is thought to be caused by hypoplasia of the ventral pancreas.
- Most patients are asymptomatic.
- A relative obstruction to pancreatic exocrine secretory flow through the duct of Santorini and minor papilla ----- result in pancreatitis in a small number of patients.
- Treatment: Endoscopic stenting and sphincterotomy of the minor papilla.

CASE 4: 45 year old male patient with repeated attacks of acute pancreatitis. No h/o smoking, drinks alcohol occasionally. No h/o gall stones.



Diagnosis: dorsal agenesis of the pancreas

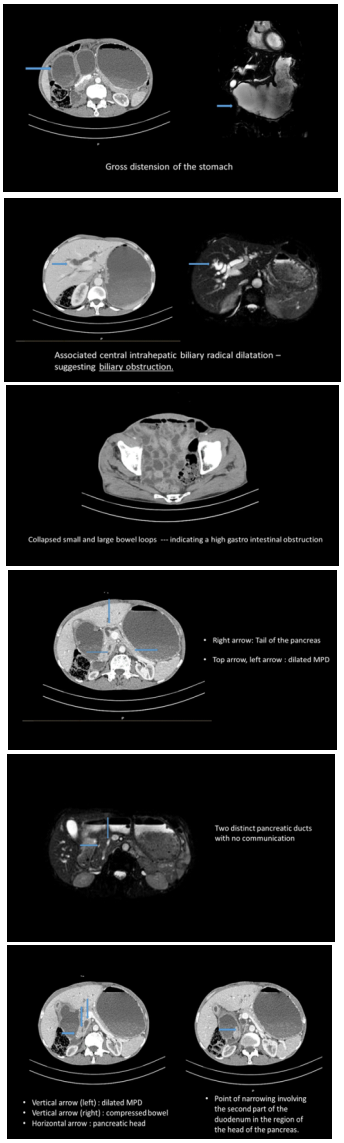
CASE 5: 36 year old female was imaged for a broad ligament fibroid. Incidentally;



Diagnosis: dorsal agenesis of the pancreas

- Also known as congenital short pancreas.
- There is a regression in the dorsal evagination during embryogenesis.
- It is a rare congenital malformation, in which there is only one pancreatic duct system, with no duct of Santorini, body and tail of the pancreas.
- May be complicated by recurrent acute and chronic pancreatitis.
- According to the degree of immaturity of the dorsal pancreas, there can be total or partial agenesis.
- 54 cases of total and partial ADP have been described over the last 100 years.
- There are publication of reports on some families with ADP which indicates that there might be an autosomal dominant transmission of the malformation, and an association with the HNF1 gene has been described.[1]

CASE 6: 44 year old male patient came with acute onset vomiting and severe abdominal pain. He complained of having recurrent bouts of vomiting in the past for which he never got himself examined.



Diagnosis: Gastric outlet obstruction secondary to annular pancreas.

- Annular pancreas is a rare congenital anomaly in which a ring of pancreatic tissue surrounds the duodenum.
- Formed when the left ventral pancreatic bud persists, and the right ventral bud does not rotate around the duodenum.
- The two ventral buds encircle the duodenum.
- One of every 12,000–15,000 live births
- Forms a complete (25%) or partial (75%) ring around the descending duodenum
- Associated with other congenital abnormalities such as esophageal atresia, imperforate anus, congenital heart disease, malrotation of the midgut, and Down syndrome.
- About 25-33% of cases in adults are asymptomatic and incidental finding.
- In adults, pancreatitis is the usual presentation. However, it can cause duodenal obstruction.
- More common symptoms in adults also include abdominal pain, post-prandial fullness, and vomiting, GI bleed from peptic ulcers. In rare cases, biliary obstruction may also be seen.

RESULTS AND CONCLUSION

Pancreatic divisum was the most commonly encountered of all the anomalies. Of the six patients with pancreatic divisum, 4 were asymptomatic, 1 presented with chronic nonspecific abdominal pain and 1 with chronic pancreatitis.

Five patients had partial dorsal agenesis of pancreas. Of these, 3 patients were asymptomatic, 1 had early onset diabetes mellitus and 1 presented with epigastric pain which was later diagnosed as chronic calcific pancreatitis.

Middle aged patient who presented with imaging features of high gastrointestinal obstruction, was diagnosed with annular pancreas.

Recognition of these anomalies is prudent as they might require prompt surgical intervention as in case of annular pancreas presenting with high gastrointestinal obstruction or medical treatment as in case of dorsal agenesis of the pancreas presenting with chronic calcific pancreatitis.

Therefore thorough knowledge of these varied presenting features will prevent misdiagnosis of such entities and increase diagnostic yield.

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