Recurrent acute pancreatitis and the reverse 'S'-shaped pancreatic duct

Vidhyachandra Gandhi,[1] Pratik Gautam,[1] Nitin Pai[2]

[1]Department of Gastrointestinal and HPB Surgery, Ruby Hall Clinic, Pune, Maharashtra, India
[2]Department of Medical Gastroenterology, Ruby Hall Clinic, Pune, Maharashtra, India

Correspondence to
Dr Vidhyachandra Gandhi, drgandhivv@gmail.com

Accepted 24 May 2019

DESCRIPTION

A 45-year-woman was admitted through emergency medical services with sudden severe upper abdominal pain in the epigastrium with radiation to the back. The pain in the upper abdomen was associated with recurrent bouts of bilious vomiting. She denied any other gastrointestinal symptoms. She had similar episodes of pain 6 months earlier and was diagnosed with acute pancreatitis (AP) in another institution and managed conservatively. She was clinically stable with tenderness in the epigastrium. Her laboratory parameters were normal except for raised amylase (950 U/L) and lipase (1250 U/L). Ultrasound of the abdomen revealed a bulky oedematous pancreas with minimal free fluid. There were no gall stones and the common bile duct was normal. A working diagnosis of mild AP was made as there was no evidence of organ failure. She was managed in the intensive care unit for 48 hours with intravenous fluids, enteral nutrition and later moved to a ward. Her lipid profile, liver function tests, serum creatinine, serum calcium, serum parathyroid hormone levels and serum IgG 4 levels were normal. Post recovery, magnetic resonance cholangiopancreatography (MRCP) was performed to further investigate the aetiology of the pancreatitis and this revealed a duct arising from the ventral aspect of the main pancreatic duct descending down initially and then ascending upwards forming a loop in a reverse S shape that then opened into the minor papilla (figure 1), which was suggestive of ansa pancreatica. The patient was managed conservatively and discharged.

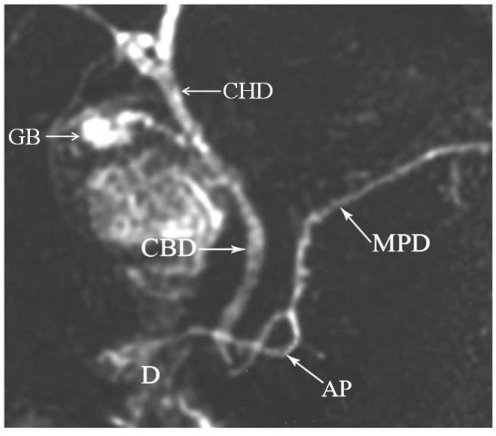

Figure 1 Magnetic resonance cholangiopancreatography image showing the reverse S-shaped pancreatic duct. The duct of santorini is arising from the ventral aspect of the dorsal pancreatic duct with crossover and opening in the minor papilla. AP, ansa pancreatica; CBD, common bile duct; CHD, common hepatic duct; D, duodenum; GB, gall bladder; MPD, main pancreatic duct.

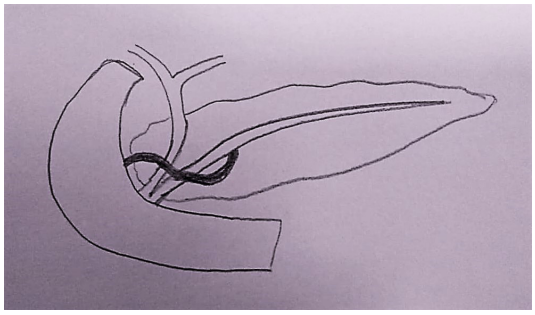

Figure 2 A drawing explaining the anatomical anomaly (illustrated by PG).

Learning points

- Magnetic resonance cholangiopancreatography (MRCP) is a non-invasive method to obtain a pancreatogram, helping to identify various pancreatic ductal anomalies.
- MRCP is an important investigation which should be included in evaluation of idiopathic recurrent acute pancreatitis.
- The typical reverse S-shaped accessory pancreatic duct draining in the minor papilla on imaging is classical of ansa pancreatica.

During embryogenesis due to obliteration of dorsal pancreatic duct at the confluence with the ventral duct, the proximal portion of the dorsal duct communicates with the inferior aspect of the ventral duct, forming a new accessory duct which courses in a reverse 'S' character, terminating in the minor papilla[1] (figure 2). In ansa pancreatica the drainage through the minor papilla is inadequate due to its oblique communication with the main duct, leading to recurrent AP.[1]

Hayashi *et al* in a retrospective analysis demonstrated ansa pancreatica as a predisposing factor for the onset of recurrent AP. The frequency of ansa pancreatica was highest in patients with alcoholic pancreatitis.[2] The exact link between alcohol consumption and ansa pancreatica leading to recurrent AP is unknown. To conclude, MRCP is an important tool to identify and define this rare congenital pancreatic ductal anomaly.

To cite: Gandhi V, Gautam P, Pai N. *BMJ Case Rep* 2019;**12**:e226492. doi:10.1136/bcr-2018-226492

Contributors VG wrote the manuscript. PG edited the image and drew a figure explaining the anomaly. NP provided the image and helped in finalising the manuscript.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES

1 Bhasin DK, Rana SS, Nanda M, *et al*. Ansa pancreatica type of ductal anatomy in a patient with idiopathic acute pancreatitis. *JOP* 2006;7:315–20.
2 Hayashi TY, Gonoi W, Yoshikawa T, *et al*. Ansa pancreatica as a predisposing factor for recurrent acute pancreatitis. *World J Gastroenterol* 2016;22:8940–8.