

Recurrent Acute Pancreatitis in the Setting of Abnormal Pancreaticobiliary Junction

Authors: Kais Antonios MD, Neil Shah MD, Timothy McGorisk MD



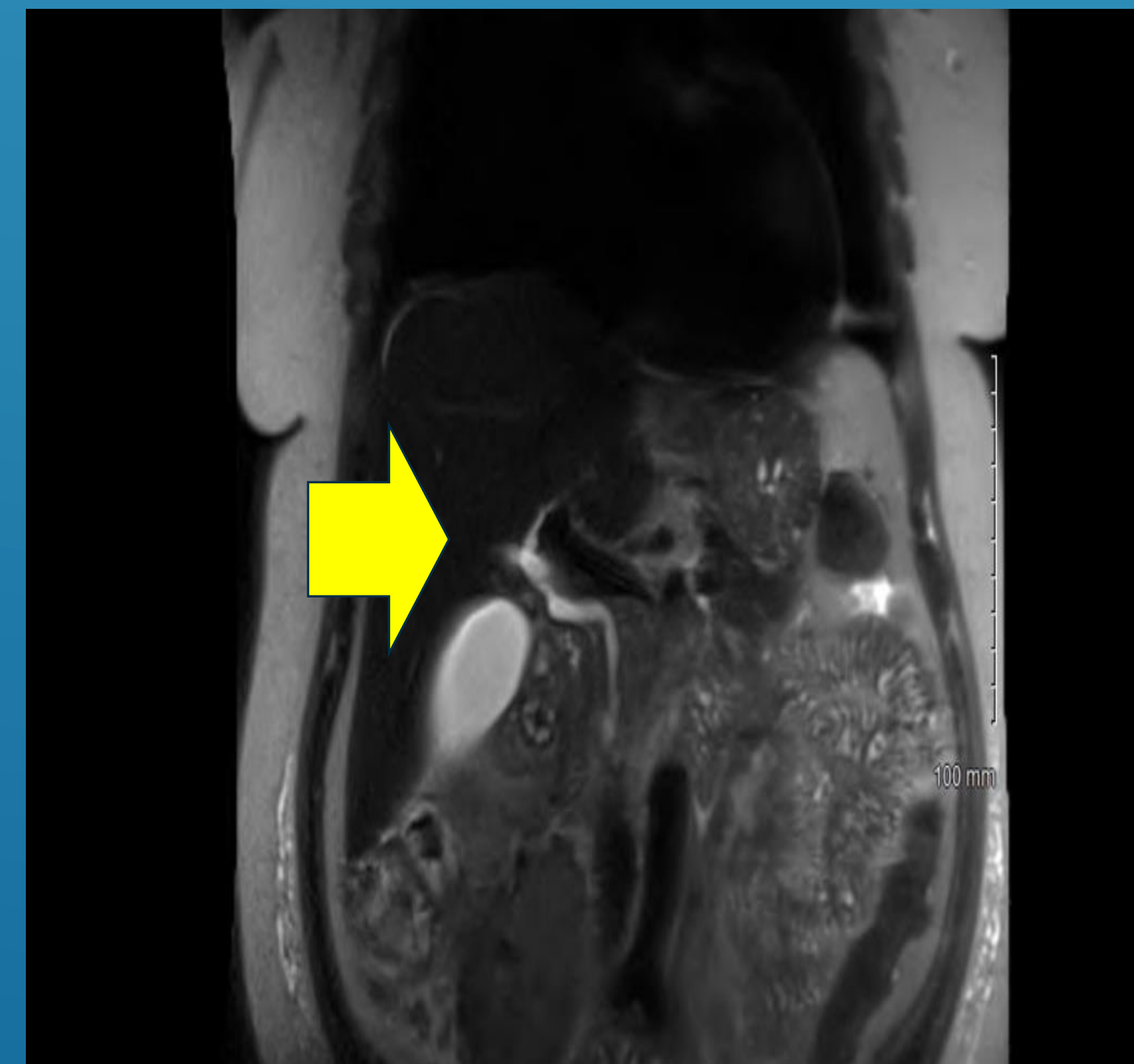
INTRODUCTION

- Abnormal pancreaticobiliary junction (APBJ) is a rare condition that can pose a diagnostic challenge. Certain types can cause recurrent acute pancreatitis (RAP).
- Normally, the major pancreatic duct and the common bile duct open into the second part of the duodenum alone or after joining as a common channel.
- The junction of the common bile duct and pancreatic duct is crucial for sphincter control of bile and pancreatic juice drainage. However, bidirectional regurgitation can occur if the union is above the sphincter of Oddi.
- An abnormal pancreaticobiliary junction happens when the common bile duct and the main pancreatic duct join outside the wall of the duodenum and form a long common channel (>8 mm).

CASE REPORT

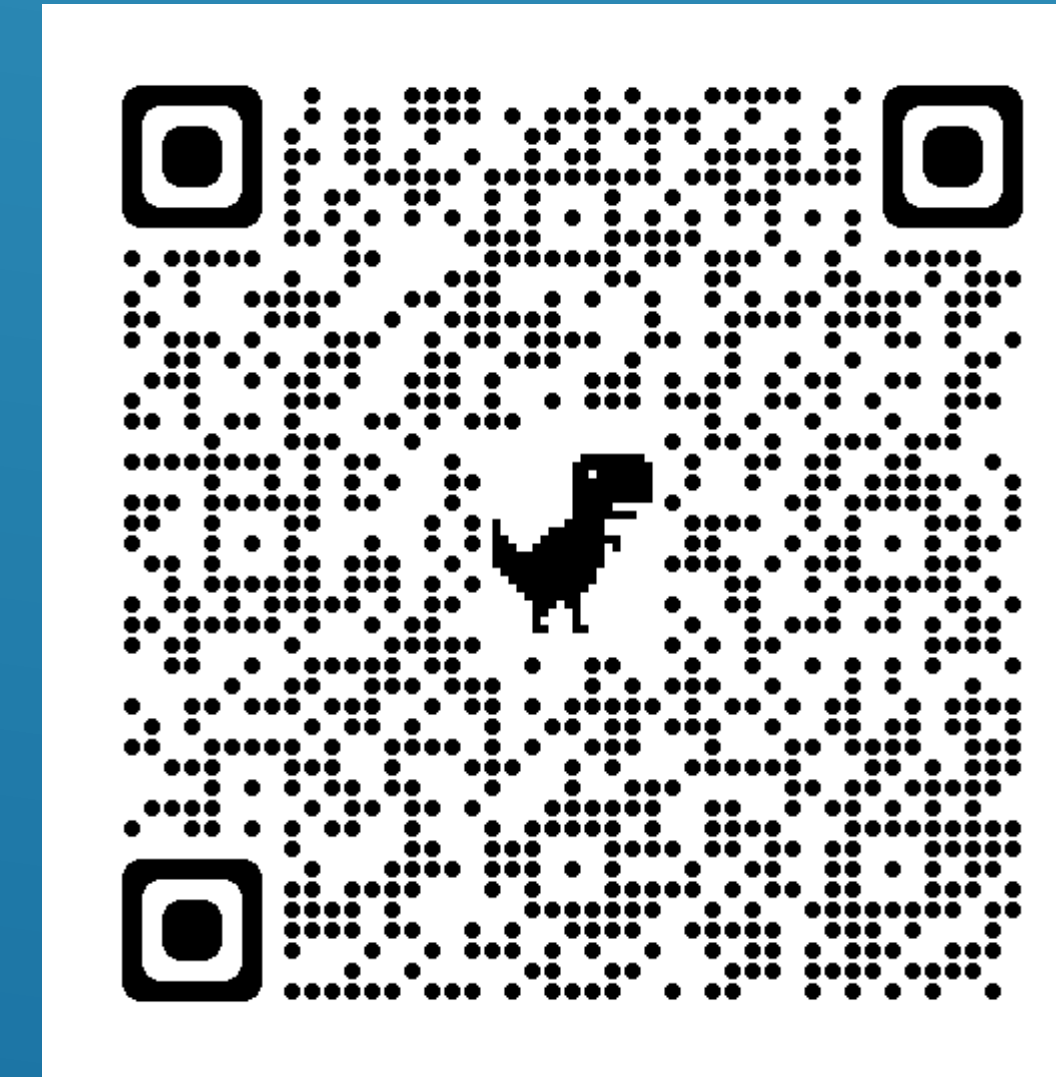
- A 51-year-old female with a history of CKD and recurrent acute pancreatitis presented with epigastric pain radiating to her back.
- Lipase level of 5131 U/L (Reference range 11-82 U/L).
- This was the 6th documented episode of acute pancreatitis in the past 6 years.
- No history of alcohol use. Multiple abdominal ultrasounds and images did not show signs of cholelithiasis or choledocholithiasis.
- MRCP on this admission demonstrated aberrant pancreatic duct anatomy with a long common channel of the distal bile duct and the main pancreatic duct measuring approximately 24mm in length.

IMAGING



MRCP: Aberrant pancreas duct anatomy with a long common channel of the distal common bile duct and the distal main pancreatic duct measuring 24mm in length

FOR RECURRENT ACUTE PANCREATITIS, CONSIDER ABNORMAL PANCREATICOBILIARY JUNCTION AS UNDERLYING ETIOLOGY



DISCUSSION

- APBJ is an important, albeit rare, cause of recurrent acute pancreatitis along with alcohol use and gallstones.
- The frequency of APBJ ranged from 1.5%-3.2% in different populations. The recurrence rate for acute pancreatitis was at its highest among these patients.
- Diagnosis is typically made with either MRCP or ERCP.
- Certain features that were associated with a higher incidence of acute pancreatitis include a long (>21mm) and wide (>5mm) common channel, a wide diameter of the proximal pancreatic duct (>2.5mm), the presence of a filling defect in the common channel, and the presence of a pancreatic duct anomaly.
- APBJ has been associated with chronic pancreatitis, pancreatic carcinoma, and gallbladder carcinoma as the reflux of pancreatic juice into the gallbladder may cause increased bile pressure, and result in epithelial hyperplasia.
- Most treatment options for APBJ have been surgical, including cholecystectomy and hepaticojunostomy depending on the presence or absence of an accompanying choledochal cyst. In the presence of cysts, Komi classification is used to divide APBJ into three types based on the angle of union of the ducts to help determine surgical intervention and long-term follow up.
- Total resection of the extrahepatic bile duct and hepaticojunostomy is recommended in children diagnosed with APBJ.

KOMI CLASSIFICATION

TYPES		DESCRIPTION
IA	Type I	Have single papilla & The Common hepatic and pancreatic ducts join each other at a right angle with a non dilated common channel.
	A	
IB	Type I	Have single papilla & The Common hepatic and pancreatic ducts join each other at a right angle with a dilated common channel.
	B	
IIA	Type II	Have single papilla & The Common hepatic and pancreatic ducts join each other at an acute angle with a non dilated common channel.
	A	
IIB	Type II	Have single papilla & The Common hepatic and pancreatic ducts join each other at an acute angle with a dilated common channel.
	B	
IIIA	Type III	Have two papilla & are equivalent to the classic pancreas divisum with biliary dilatation.
	A	
IIIB	Type III	Have two papilla & are characterized by the absence of the Wirsung's duct.
	B	
IIIC1	Type III	Have two papilla & contain a tiny communicating duct between the main duct and the accessory ducts.
IIIC2	C1	Have two papilla with & characterized by a common channel made up of common and accessory ducts of equal caliber.
	C2	
IIIC3	C2	Have two papilla with intricate network of dilated ducts that join each other by total or partial dilatation of the ductal system.
	C3	

REFERENCES

- Ono A, Arizono S, Ito H, Togashi K. Imaging of Pancreaticobiliary Maljunction. *Radiographics*. 2020;40(2):378-392. doi:10.1148/rng.2020190108
- Maria SP, Gulati P, Thoral MK, Vij JC, Aviano BS. Pancreaticobiliary ductal union in biliary diseases. An endoscopic retrograde cholangiopancreatographic study. *Gastroenterology*. 1989;96(3):807-812.
- Sarles H, Sarles JC, Camatte R, et al. Observations on 205 confirmed cases of acute pancreatitis, recurring pancreatitis, and chronic pancreatitis. *Gut*. 1965;6(8):545-559. doi:10.1136/gut.6.8.545
- Takuma K, Kamisawa T, Hara S, et al. Etiology of recurrent acute pancreatitis, with special emphasis on pancreaticobiliary malformation. *Adv Med Sci*. 2012;57(3):244-255. doi:10.1016/j.ams.2012.04.017
- Roulois NE, Kuhn JA, McCarty TM. Association of an abnormal pancreaticobiliary junction with biliary tract cancers. *Proc (Bayl Univ Med Cent)*. 2000;13(1):11-15. doi:10.1080/08982640011927836
- Sujayama M, Azumi Y, Kuroda A. Pancreatic disorders associated with anomalous pancreaticobiliary junction. *Surgery*. 1999;125(3):492-497.
- Jeong JB, Whang JH, Ryu JK, Yoon YB, Kim YT. Risk factors for pancreatitis in patients with anomalous union of pancreaticobiliary duct. *Hepato-gastroenterology*. 2004;51(58):1187-1190.
- Harada K, Itoh M, Fujii K, et al. Pathology and cellular kinetics of gallbladder with an anomalous junction of the pancreaticobiliary duct. *Am J Gastroenterol*. 1986;81(10):1007-1011.
- James TW, Crockett SD. Management of acute pancreatitis in the first 72 hours. *Curr Opin Gastroenterol*. 2018;34(5):330-335. doi:10.1097/MCG.0000000000000456
- Ono S, Furuta S, Imai N. Diagnosis and treatment of pancreaticobiliary maljunction in children. *Surg Today*. 2011 May;41(5):801-5. doi:10.1007/s00595-010-4482-9. Epub 2011 May 1. PMID: 21533929
- Sujayama M, Baba M, Azumi Y, Harada K, Mizutani Y, Hachisu J. Diagnosis of anomalous pancreaticobiliary junction: value of magnetic resonance cholangiopancreatography. *Surgery*. 1998 Apr;123(4):591-7. PMID: 9551064
- Nobuhiko Komi, Hiroo Takehara, Kazumichi Kurizono, Yasuyuki Miyoshi, Toshiyuki Yagi. Does the type of anomalous arrangement of pancreaticobiliary ducts influence the surgery and prognosis of choledochal cyst? *Journal of Pediatric Surgery Volume 37, Issue 6, 1992, Pages 728-731. ISSN 0022-3466.*