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Type A Pancreas Divisum Presenting as Recurrent Abdominal Pain in an Adolescent Female: A Case Report

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Abstract: Pancreas divisum is the most common congenital pancreatic ductal anomaly resulting from failure of fusion of the dorsal and ventral pancreatic ducts. Although frequently asymptomatic, it may present with recurrent abdominal pain or pancreatitis. We report a case of a 17-year-old female presenting with recurrent abdominal pain and non-bilious vomiting, diagnosed with Type A pancreas divisum on MRCP and managed conservatively with favorable clinical recovery. This case highlights the importance of early radiological diagnosis and the role of conservative management in mild presentations.

Keywords: *Pancreas Divisum, Recurrent Abdominal Pain, Adolescent, MRCP, Conservative Management.*

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I. INTRODUCTION

Pancreas divisum is a congenital anomaly arising from incomplete fusion of the dorsal and ventral pancreatic ductal systems during embryological development. It is observed in approximately 5–10% of the general population and represents the most common pancreatic ductal variant. While most individuals remain asymptomatic, a subset develops recurrent abdominal pain or pancreatitis due to impaired drainage of pancreatic secretions through the minor papilla. Magnetic resonance cholangiopancreatography (MRCP) serves as a non-invasive and highly sensitive diagnostic modality. We present a case of Type A pancreas divisum in an adolescent female successfully managed conservatively.

II. CASE PRESENTATION

A 17-year-old female presented with recurrent episodes of upper abdominal pain for six months associated with non-bilious vomiting. The pain was episodic, localized to the epigastrium, radiating to the back, and aggravated after meals. There was no history of jaundice, fever, trauma, alcohol intake, or drug use. On examination, the patient was hemodynamically stable with mild epigastric tenderness and no peritoneal signs.

III. LABORATORY INVESTIGATIONS

Table 1 Laboratory Investigations

Investigation	Result	Reference Range
Hemoglobin	12.8 g/dL	12–16 g/dL
Total leukocyte count	11,200 /mm³	4,000–11,000 /mm³
Serum amylase	320 U/L	30–110 U/L
Serum lipase	580 U/L	13–60 U/L
AST	32 U/L	<40 U/L
ALT	28 U/L	<40 U/L
Total bilirubin	0.8 mg/dL	0.2–1.2 mg/dL
Serum calcium	9.2 mg/dL	8.5–10.5 mg/dL
Serum triglycerides	110 mg/dL	<150 mg/dL

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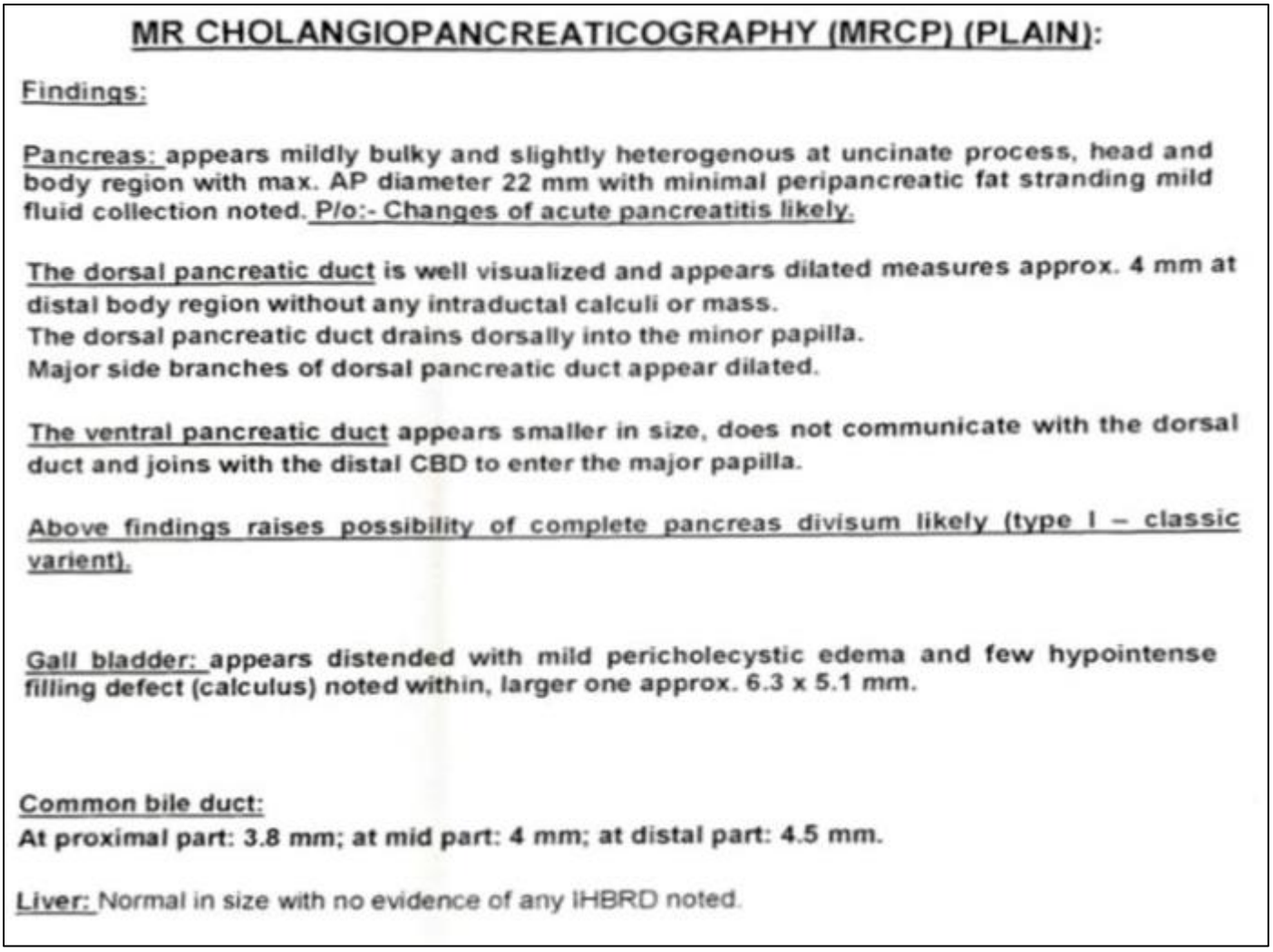
IV.

V. IMAGING FINDINGS

MRCP revealed Type A pancreas divisum characterized by a dominant dorsal duct draining into the minor papilla without communication with the ventral duct. Mild dorsal duct prominence was noted without evidence of necrosis or pseudocyst formation.



MR CHOLANGIOPANCREATICOGRAPHY (MRCP) (PLAIN):

Findings:

Pancreas: appears mildly bulky and slightly heterogenous at uncinate process, head and body region with max. AP diameter 22 mm with minimal peripancreatic fat stranding mild fluid collection noted. P/o:- Changes of acute pancreatitis likely.

The dorsal pancreatic duct is well visualized and appears dilated measures approx. 4 mm at distal body region without any intraductal calculi or mass.
The dorsal pancreatic duct drains dorsally into the minor papilla.
Major side branches of dorsal pancreatic duct appear dilated.

The ventral pancreatic duct appears smaller in size, does not communicate with the dorsal duct and joins with the distal CBD to enter the major papilla.

Above findings raises possibility of complete pancreas divisum likely (type I – classic varient).

Gall bladder: appears distended with mild pericholecystic edema and few hypointense filling defect (calculus) noted within, larger one approx. 6.3 x 5.1 mm.

Common bile duct:
At proximal part: 3.8 mm; at mid part: 4 mm; at distal part: 4.5 mm.

Liver: Normal in size with no evidence of any IHBRD noted.

VI. MANAGEMENT AND HOSPITAL COURSE

The patient was managed conservatively with bowel rest, intravenous fluids, analgesics, and antiemetics. Oral sips were initiated on day 3 of admission and gradually progressed to a soft diet by day 6. The patient showed steady clinical improvement with normalization of pancreatic enzyme levels and was discharged in stable condition on day 7 with dietary advice and outpatient follow-up.

VII. DISCUSSION

Pancreas divisum results from embryological failure of fusion between the dorsal and ventral pancreatic ducts, leading to predominant drainage of pancreatic secretions through the minor papilla. Type A, or classic pancreas divisum, represents complete ductal separation and is the most frequently encountered subtype. Although often an incidental finding, pancreas divisum has been implicated in recurrent pancreatitis due to relative outflow obstruction at the minor papilla, resulting in increased intraductal pressure and pancreatic injury.

In adolescents and young adults presenting with recurrent epigastric pain and elevated pancreatic enzymes, pancreatic ductal anomalies should be considered in the differential diagnosis. MRCP has emerged as the preferred diagnostic modality due to its non-invasive nature and high sensitivity in delineating ductal anatomy. Secretin-enhanced MRCP may further improve visualization by stimulating pancreatic secretion and ductal distension.

Management of pancreas divisum depends on symptom severity and frequency. Conservative therapy remains the

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first-line approach for mild or isolated episodes and includes bowel rest, hydration, and analgesia. Endoscopic minor papillotomy or stenting is reserved for patients with recurrent or severe pancreatitis refractory to medical management. Surgical intervention is rarely required. The favorable outcome in this case supports the effectiveness of conservative management in selected patients.

Long-term follow-up is recommended to monitor recurrence and guide future therapeutic decisions. Early recognition and appropriate management can significantly reduce morbidity associated with recurrent pancreatic inflammation.

VIII. CONCLUSION

Type A pancreas divisum should be considered in adolescents presenting with recurrent abdominal pain and biochemical evidence of pancreatitis. MRCP plays a crucial role in diagnosis, and conservative management can be effective in mild cases. Awareness of this condition facilitates timely diagnosis and appropriate treatment.

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