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Surgery

PANCREATIC DIVISUM WITH PSEUDOPANCREATIC CYST- A CASE REPORT

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ABSTRACT Pancreatic divisum is a congenital anomaly where the dorsal and ventral pancreatic buds fail to fuse embryologically. This leads to majority of pancreatic duct secretions draining through the duct of Santorini (dorsal duct) into the minor papilla. A case of 17 years old male complaining of abdominal pain, nausea and vomiting is presented. He was initially treated for acid peptic disease and later admitted with aggravation of abdominal pain with elevated serum amylase and lipase levels. Present case report highlights on the fact that a high index of suspicion for diagnosing pancreatic divisum should be considered in young patients presenting with first attack of acute pancreatitis in absence of history of smoking, alcoholism and family history of pancreatic disease. This report also highlights the use of Magnetic Resonance Cholangiopancreatography (MRCP) in the definite diagnosis of Pancreatic Divisum.

KEYWORDS : Pancreatic Divisum, Acute Pancreatitis, Mrcp

INTRODUCTION

The pancreas develops early in embryonic life from a single dorsal and two ventral endodermal buds along the distal foregut. The two ventral buds are closely associated with developing hepatic diverticulum. One of the ventral buds, usually the left, typically undergoes atrophy, with the remaining bud rotating posteriorly behind the distal foregut to lie caudal to the dorsal analage. The dorsal analage forms the superior portion of the pancreatic head, as well as the body and tail and is initially drained via the duct of Santorini through the minor papilla. The ventral analage becomes the inferior portion of the head of the pancreas and drains through the duct of Wirsung at the ampulla of Vater. Usually the ductal system fuse, and the body and tail drain through the duct of Wirsung. The duct of Santorini regresses to a diminutive size, playing a minor accessory role in drainage, or it may even regress entirely. When the ductal systems fail to fuse, it results in a congenital anomaly-Pancreatic Divisum with an overall incidence of 4-14%[1,2]. (Fig 1)[3]

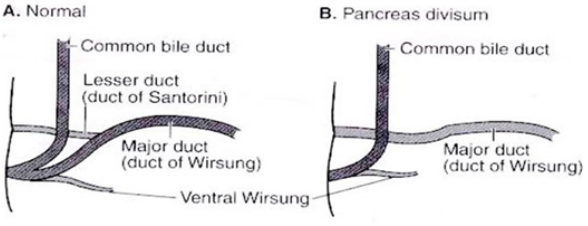

Fig. 1 – Anatomy of pancreatic duct

There are three major types of Pancreatic Divisum[2]
Type I- Complete failure of fusion of dorsal and ventral bud
Type II-Absence of ventral duct so minor papilla drains entire pancreas
Type III-Small remnant communication between dorsal and ventral duct

CASE REPORT

17 years old male presented to surgical outpatient department with acute abdominal pain associated with nausea and vomiting. Patient was treated symptomatically and advised to follow up with ultrasonography (USG) of abdomen. Patient did not feel relieved with treatment and came back with acute abdominal pain, nausea, vomiting and fever. Clinical examination revealed pulse rate of 90 beats/min with mild tenderness in epigastrium. Patient was admitted and investigated, his USG was suggestive of bulky hypoechoic pancreas. Serum amylase was 499 and lipase was 2628 suggestive of acute pancreatitis. Contrast Enhanced Computed Tomography (CECT) of abdomen pelvis showed severe necrotising pancreatitis with intra pancreatic acute necrotic collection communicating with main pancreatic duct, with CT SEVERITY INDEX=10.

As patient had acute necrotising pancreatitis with complication of pseudocyst, with no history of alcoholism or any definitive causative factor for pancreatic disease, patient was advised MRC. MRCP showed a well-defined T2W1 hyperintense and T1W1 hypointense collection in the region of distal body of pancreas measuring 4x5.6x2.8 cms with maximum wall thickness of 4mm.Main pancreatic duct dilated 3.6mm and displaced inferiorly and posteriorly. The dorsal duct was seen coursing anterior to the common bile duct and draining into the minor papilla suggestive of Type II Pancreatic Divisum (Fig 2)

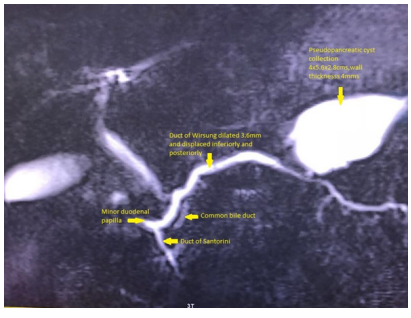

Fig.2 MRCP showing Pancreatic divisum (Type II)

Patient was managed conservatively and after the abdominal signs subsided, patient was posted for Endoscopic Retrograde Cholangiopa ncreatography (ERCP) guided pancreatic duct stenting (Fig. 3).

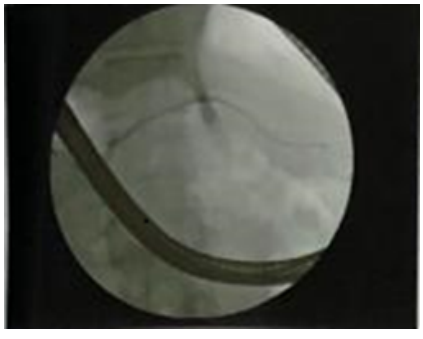

Fig.3 ERCP showing pancreatic duct stenting

The pancreatic stent was removed 14 days later and follow up MRCP was done. MRCP showed complete resolution in the size of pseudopancreatic cyst collection after stenting as the collection was communicating with major pancreatic duct (Fig.4). The patient was maintained on pancreatic enzyme supplementation and low fat diet. Follow up after 6 months has shown patient to be symptom free.

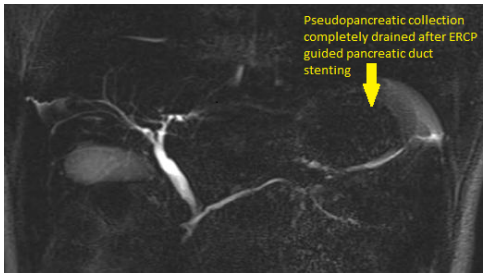

Fig. 4 Follow up MRCP scan after stent removal showing resolution of Pseudopancreatic cyst collection

DISCUSSION

Most patients with pancreatic divisum are asymptomatic and the condition is diagnosed coincidentally on ERCP. Few patients present with recurrent acute attacks of pancreatitis and still very few present with complications like formation of a pseudocyst with acute necrotizing pancreatitis, calculi, abscess or hemosuccus pancreatitis. Kuzel Aaron et al[2] in his case report ,reported a frequency of acute pancreatitis as a result of pancreatic divisum ranging between 25-38% and also quoted these patients to develop chronic pancreatitis. Present case did not give any previous history of repeated attacks of abdominal pain ,rather he presented directly with a complication of pseudocyst formation detected on CECT and MRCP. This emphasizes on the need to investigate patients with acute abdominal pain with a raised serum amylase and lipase. In present case, patient responded to symptomatic treatment of simple bowel rest, intravenous hydration therapy and analgesics. Kuzel Aaron et al[2] in his case report mentioned that a 20 year old female had first attack of acute pancreatitis at the age of 6 years, however a definitive diagnosis of pancreatic divisum was made at the age of 20 years when MRCP was done. Her Computed tomography study performed in 2010 and 2017 showed evidence of pancreatis. Present patient was only 17 years old with no history of alcoholism, smoking or any family history for pancreatic disease. This raised suspicion for investigating the patient to look for a definitive etiology. Hence MRCP was done to arrive at the definitive diagnosis of pancreatic divisum with pseudopancreatic cyst as a complication[4]. ERCP has both diagnostic and therapeutic role in pancreatic divisum[5]. In present case the pseudopancreatic cyst collection showed complete resolution after ERCP guided pancreatic duct stenting. This prevented repeated attacks of acute pancreatitis and its further consequences. Repeated mild attacks of acute pancreatitis may lead to chronic pancreatic mass in the head of pancreas[6]. Delay in diagnosis would have ended the patient in repeated attacks of acute pancreatitis as well as in future irreversible functional impairment of pancreas over a long period of time. Early definitive diagnosis has made the treatment minimally invasive and avoided a major surgical procedure in a young patient. This has resulted in better outcome overall.

CONCLUSION

This case report highlights the importance of thorough investigation of patients with first attack of acute pancreatitis presenting in second decade of life with no definite etiological history. It is imperative to insist for a definitive diagnosis for cause of pancreatitis and Magnetic Resonance Cholangiopancreatography is the investigation of choice to make the definitive diagnosis when other investigations have failed to give etiological diagnosis. ERCP has both diagnostic and therapeutic role in Pancreatic Divisum. Early definitive diagnosis in this patient enabled us to treat his condition with a minimal invasive operative technique thereby decreasing the morbidity and mortality associated with pancreatic disease.

References

1. Farooq P.Agha, Kenneth D. Williams :Pancreas divisum,incidence,detection and clinical significance.The American Journal of Gastroenterology Vol 82,no 4,1987
2. Kuzel et al :Pancreatic divisum- An unusual cause of chronic pancreatitis in a young patient 2017.Cureus9(11):e1856. DOI:10.7759/CUREUS.1856
3. Pancreasyakidato.blogspot.com
4. Zen Shen,Stefan Munker et al:The accuracies of Diagnosing Pancreas Divisum by MRCP and EUS:A Systematic Review and Metaanalysis .SCIENTIFIC REPORTS/ 6:35389/ DOI:10.1038/srep35389
5. Lamprinos Michailidis,Bilal Aslam et al: The efficacy of endoscopic therapy for pancreas divisum: a meta-analysis.Annals of Gastroenterology(2017)30,550-558
6. Subodh Varshney, Colin D Johnson et al: Surgery for pancreas divisum.Ann R Coll Surg Engl 2002;84:166-169.