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Journal of Pancreatic Research, Disorders & Therapy

A Case of Pancreatic Arteriovenous Malformation Presenting with Abdominal Pain

Abstract

Pancreatic arteriovenous malformations are rare, with less than 100 cases reported so far. Here we report a case of a 50-year-old male patient who presented with abdominal pain and found to have pancreatic AV malformation in the head of the pancreas. Diagnostic workup, imaging findings, and differential diagnosis are highlighted here.

Keywords: Epigastrium; Pancreatic head; Diagnose; Gastrointestinal bleed; Esophageal; Mesenteric artery

Case Report

Volume 1 Issue 1 - 2017

Mandip KC[1]* and Guru Trikudanathan[2]

[1]*Department of Medicine, University of Minnesota, USA*

[2]*University of Minnesota, USA*

***Corresponding author:** Mandip KC, Department of Medicine, University of Minnesota, 401 East River Parkway, Suite 131, Minneapolis, Minnesota, USA 55455, Email: kcxxx011@umn.edu

Received: January 17, 2017 | **Published:** March 15, 2017

Case

A 50-year-old male smoker with history of cholecystectomy (six years ago) was referred for 6-year history of right upper quadrant pain. Physical exam was significant for tender epigastrium. A contrast enhanced CT showed vascular malformation involving the head of the pancreas (Figures 1A & 1B) resulting in enlargement of the pancreatic head. The arterial supply was from the celiac axis via the gastroduodenal artery as well as a branch of the superior mesenteric artery, and drained into the superior mesenteric vein close to the portal splenic confluence (Figures 2 & 3-angiograms). There was no evidence of thrombosis. Trans-catheter ligation was not amenable due to large nidal size, very small shunt vessel size and direct portal venous drainage. Whipple pancreaticoduodenectomy was recommended, but patient declined, and was lost to follow up.

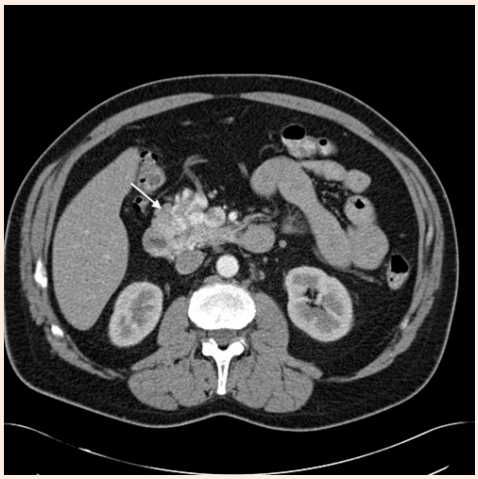

Figure 1A: Axial section of Arterial phase of Contrast enhanced CT showing pancreatic AVM.

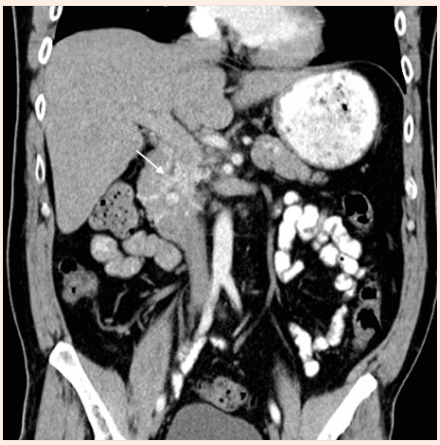

Figure 1B: Coronal section of Arterial phase of Contrast enhanced CT showing pancreatic AVM.

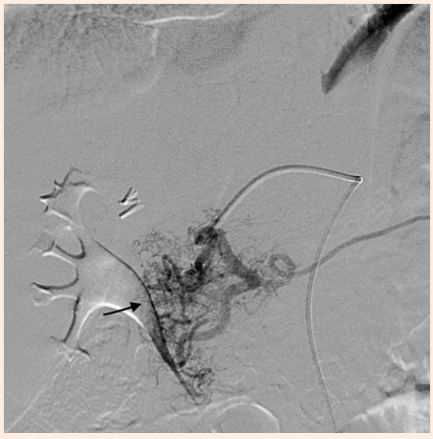

Figure 2: Mesenteric Angiogram. Angiogram via a branch of Celiac Trunk showing vascular network in the head of the pancreas.

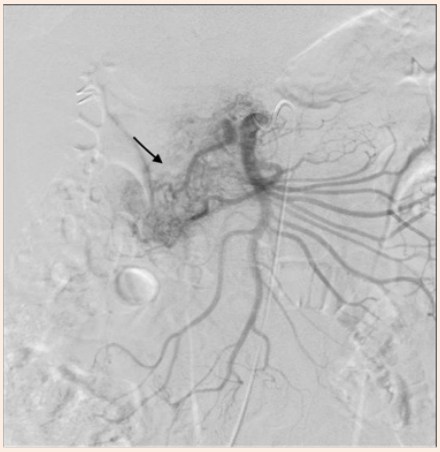

Figure 3: Mesenteric Angiogram. Angiogram via superior mesenteric artery showing vascular network in the head of pancreas.

Discussion

We hereby present a rare case of pancreatic AVM (pAVM) as an unusual cause for abdominal pain. A very small fraction of visceral AVMs is found in the pancreas with less than 100 cases reported to this date [1]. pAVM can be congenital or acquired, are mostly asymptomatic. They can present as gastrointestinal bleed, abdominal pain, or rarely as jaundice. It has been hypothesized that abdominal pain is caused by steal syndrome, with shunting of blood away from mesenteric circulation through the AVM [2].

Diagnosis of pAVM can be made with various imaging modalities including CT, MRI, angiogram or sonography and should be differentiated from other hypervascular neoplasms such as, cystadenocarcinoma, angiosarcoma and islet cell tumor [3]. Angiogram can be used to diagnose as well as to guide treatment by trans-catheter arterial embolization. Pancreatic AVMs progressively increase in size eventually leading to development of portal hypertension, which can be resistant to treatment even after complete resection of the AV malformation [4]. Furthermore, it can lead to complications such as GI bleeding or rupture of esophageal varices if left untreated [5]. Therefore, early recognition and treatment is recommended.

References

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Citation: Mandip KC, Trikudanathan G (2017) A Case of Pancreatic Arteriovenous Malformation Presenting with Abdominal Pain. J Pancreat Res Disord Ther 1(1): 00001. DOI: 10.15406/jprdt.2017.01.00001