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Rare Presentation of a Massive Intermittent Upper Gastrointestinal Bleed

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Background

- Hemosuccus pancreaticus (HP) is a rare cause of upper gastrointestinal bleeding (UGIB) defined as bleeding from the ampulla of Vater through the main pancreatic duct. First described in 1970 by Dr. Sandblom and characterized by GI bleeding that can easily be overlooked, originating from a splenic artery aneurysm. Aneurysms and pseudaneurysms (PA) are not the only causes of HP (Table 1).

<table>
<thead>
<tr>
<th>Table 1. Hemosuccus Pancreaticus Etiology</th>
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<tbody>
<tr>
<td>Acute Pancreatitis</td>
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<tr>
<td>Chronic Pancreatitis</td>
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<tr>
<td>Vascular malformations</td>
</tr>
<tr>
<td>Pancreatic tumors (endocrine carcinoma, pancreatic carcinoma, serous cystadenoma)</td>
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<td>Blunt abdominal trauma</td>
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<tr>
<td>Iatrogenic (laparoscopic surgery with vessel manipulation and EUS-FNA)</td>
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<tr>
<td>Pancreatitis</td>
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<tr>
<td>Pseudophlebitis</td>
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<tr>
<td>Rupture of true aneurysm (atherosclerosis, vascular fibromuscular dysplasia, syphilitic affection, hereditary dystrophy of elastic tissue, alpha-1 antitrypsin deficiency)</td>
</tr>
</tbody>
</table>

- Bleeding is intermittent and repetitive and can be massive, but rare to cause hemodynamic instability. Diagnosis is difficult since endoscopy rarely reveals active hemorrhaging and CT imaging or angiography is needed to locate the source. Interventional radiology for embolization or surgical consult with use of intraoperative pancreatoscopy are needed based on the hemodynamic stability of the patient and ability to identify the source of hemorrhaging.

References:

Case Presentation

- A 35 year old male with complaints of progressive fatigue and generalized weakness over two weeks presents to an outside facility with a past medical history of occult gastrointestinal bleed, previous alcohol abuse and acute pancreatitis. He denied melena, hemachromasia, hematemesis, nausea/vomiting, or chronic ibuprofen usage. Laboratory studies revealed a hemoglobin of 2.8 g/dL.
- Initial esophagogastroduodenoscopy (EGD) revealed an actively bleeding mass at the major papilla, a non-bleeding ulceration at the GE junction and absence of gastric and esophageal varices. Colonoscopy revealed no pathology.
- The patient developed epigastric tenderness and spiking fevers as high as 102°F and elevated lipase level at 803 U/L upon presentation to our institution.
- Repeat EGD revealed a clean based ulcer in the distal esophagus and mild thickening of the duodenal sweep mucosa; no bleeding or mass at the ampulla. Duodenal biopsies revealed signs of chronic inflammation.
- A CT scan of the abdomen/pelvis revealed pancreatitis consistent with splenic artery pseudoaneurysm image 1, splenomegaly and a pancreatic head lesion image 2.
- Interventional radiology performed an abdominal angiography identifying an 8mm splenic artery pseudoaneurysm from the proximal-mid splenic artery with no active bleeding. Coil embolization image 3 and repeat imaging confirmed no residual pseudoaneurysm (image 4) and a new splenic infarct (image 5).
- Follow-up MRI showed an ill-defined area of decreased attenuation in the head of the pancreas, fatty infiltrates within the liver and splenic infarct. Patient was afebrile with no abdominal pain, a stable hemoglobin and vaccinated for encapsulated bacteria at time of discharge.

Discussion

- HP is a rare disease with a male predominance (7:1). Pathophysiology is either from direct or indirect rupture of a vessel into the main pancreatic duct. Weakening of the vessel wall forms the PA.
- PAs form in the setting of chronic or acute pancreatitis most commonly in the splenic artery (60%), gastroduodenal (20%), pancreaticoduodenal (10%), hepatic (5%) and left gastric (2%) arteries.
  - Complications include rupture into the gastrointestinal tract, a pseudocyst, peritoneal cavity, retroperitoneal space or adjacent organs.
  - Frequency of rupture in the setting of pancreatitis is 5-10% and 20% with a pseudocyst.
  - Mortality is 90-100% with a risk reduction to 12-57% if treated.
- Bleeding is intermittent due to clotting within the main pancreatic duct. Bleeding from the major ampulla is seldom seen with EGD. Residual blood clots located near the ampulla with lack of other bleeding sources can be indicative of the disease.
- If a nondiagnostic EGD, CT scan of the abdomen is the imaging modality of choice to identify pancreatic pathology followed by angiography, gold standard for detecting PAs.
- Coil embolization has a 79-100% success rate and mortality rate of 12-33%. Coils, glue or non-coated metallic stents are acceptable depending on the vessel tortuosity and infarct risk reduction.
- If hemodynamically unstable or embolization has failed, surgery is recommended. Common procedures include bipolar arterial ligation, direct intra-pseudocyst ligation with drainage, pancreaticoduodenectomy or splenopancreatectomy.
- The incidence of HP may rise in the future as a result of increasing alcohol use, primarily in males in the western countries, leading to more cases of pancreatitis.

Conclusion

HP is a rare cause of an UGIB that is difficult to diagnose with endoscopy alone and often requires additional imaging. It should be included in the differential for any male patient presenting with melena, generalized weakness and fatigue with a low hemoglobin with a history of pancreatitis that cannot be explained by a more common cause. Treatment by embolization should be attempted prior to surgical interventions. The incidence of HP may rise with an increase in laparoscopic surgeries, the use of EUS-FNA and the continued trend of alcohol use inducing pancreatitis.