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A Rare Case of Hemosuccus Pancreaticus: Presentation Patterns, Diagnostic Approaches, and Therapeutic Strategies

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Abstract

Hemosuccus pancreaticus is a frequent but significant and even a potentially fatal cause of acute upper gastrointestinal bleeding. It is characterized by intermittent hemorrhage from the major duodenal papilla via the main pancreatic duct. Chronic pancreatitis leading to peripancreatic pseudoaneurysm is a common underlying cause. Other common causes associated can be ulcers, inflammatory bowel disease, cancer, diverticulitis and others. Rare conditions such as hemobilia, hemosuccus pancreaticus, and fistula can also be found to be associated. However, hemosuccus pancreaticus associated with gastroduodenal artery pseudoaneurysms remains extremely rare in the context of upper gastrointestinal bleeding. This report describes a rare instance of a 40-year-old male with hemosuccus pancreaticus, with initial complaint of hematochezia and abdominal pain.

Keywords: *Artery Pseudoaneurysms, Blot Clots, Gastroduodenal Artery, GI bleeding, Hemoptysis.*

Introduction

A rare clinical condition known as hemosuccus pancreaticus is characterised by intermittent bleeding from the main duodenal papilla. It remains an uncommon reason for upper gastrointestinal bleeding, with a frequency of 1 in 1500 reported cases [1]. Although melena is a typical symptom, hemoptysis, increasing anemia, and pain in the abdomen are possible additional indicators [2]. Hemorrhaging is often intermittent, leading to chronic anemia, but can be seen as hemorrhagic shock in severe cases, requiring immediate intervention [3]. Chronic pancreatitis can cause visceral artery pseudoaneurysms, which may result in potentially fatal hemosuccus pancreaticus [4]. Such pseudoaneurysms are found in approximately 10% of chronic pancreatitis cases [5]. Gasteroduodenal artery pseudoaneurysms are exceedingly rare (<2%), making hemosuccus pancreaticus due to this cause extremely uncommon. Because of the challenges involved in diagnosing this illness, there may be substantial morbidity and unfavourable clinical results [6]. Therefore, when making a differential diagnosis for individuals with upper gastrointestinal bleeding of unknown cause, hemosuccus pancreaticus should be taken into account.

Case Presentation

A 40-year-old male with chronic alcoholism presented with epigastric pain and melena background. His abdominal pain had been intermittent for three weeks, and he had noticed dark, tarry stools. No history of liver illness or gastrointestinal bleeding, nor any complaints of chest pain, shortness of breath, fever, chills, or hematuria was observed. He had a long-term history of alcohol use, poorly controlled hypertension, and chronic pancreatitis. He had not undergone recent surgery. Neither cancer nor pancreatitis ran in the family. Although he denied using illegal drugs, he was a longtime smoker. With a blood

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pressure of 180/100 mmHg, a heart rate of 110 beats per minute (bpm), a respiratory rate of 18, a temperature of 97.4°F, and 100% oxygen saturation on room air. The patient was hemodynamically stable upon presentation. Bowel sounds were normal in all quadrants, but a physical examination showed significant discomfort in the right upper quadrant and epigastric areas. Soon after, the patient developed frank hematemesis, and his vital signs deteriorated, with systolic blood pressure exceeding 200 mmHg, pulse rate of 110 bpm, and oxygen saturation dropping below 80%. The patient was intubated, a Ryles tube was inserted, and frank blood was aspirated. Urinary catheterization was performed, and input/output monitoring was established. Blood samples were taken, and per abdominal examination revealed no rigidity or guarding at first, but this developed as the patient's condition worsened. The patient was stabilised and transferred to the ICU. Upon admission, extensive laboratory testing was conducted (Table 1).

Table 1. Laboratory Investigation Profile of the Patient

Lab Parameter	**Patient Value**	**Reference Range**
Hemoglobin	11.0 g/dL	12.0-15.5 g/dL
Hematocrit	36.2 %	38.3% - 48.6%
Mean Corpuscular Volume	82.4 fL	80-95 fL
Platelet count	248 x 10% /L	150-450 x 109 /L
International Normalised Ratio (INR)	2.59	<1.1
Serum amylase	532 IU/L	23-85 IU/L
Serum lipase	>1000 IU/L	0-160 IU/L
SGOT	561 IU/L	5-40IU/L
SGPT	189 IU/L	7-56IU/L
Alkaline phosphatase	253 mg/dL	45-140 mg/dL
Total bilirubin	1.9 mg/dL	1.2 mg/dL
Sodium	138 mmol/L	136-145 mmol/L
Potassium	5.0 mmol/L	3.5-5.1 mmol/L
Chloride	100 mmol/L	98-107 mmol/L
Carbon dioxide	22 mmol/L	21-32 mmol/L
Blood Urea Nitrogen	18 mg/dL	9-18 mg/dL
Creatinine	1.3 mg/dL	0.6-1.3 mg/dL
Blood glucose	230 mg/dL	7-106 mg/dL
Total count	24620 cells/mcL	3500-10500 cells/mcL
Serum Calcium	9.0 mg/dL	8.5-10.5 mg/dL
LDH	450 IU/L	<280 IU/L

His serum levels of alanine phosphatase, SGOT, lipase, lactate dehydrogenase, amylase, SGPT, INR, and random blood sugar were elevated. His WBC count was 24.62x10⁹/L, while total protein, albumin, and calcium were found to be within normal ranges. A 4×5×7cm complex cystic mass in the area of the pancreatic head's uncinate process was observed on a contrast-enhanced abdominal CT scan (Figure 1).

Figure 1. Pseudoaneurysm in the Background of Chronic Pancreatitis, Presented with Upper Gastrointestinal Bleed Suggestive of Hemosuccus Pancreaticus

It had an enhancing capsule and a tiny hyperdensity that indicated a peripancreatic pseudoaneurysm, which was continuously leaking into a pancreatic pseudocyst. A dilated pancreatic duct was also visible on the CT scan. A pseudoaneurysm in the peripancreatic vascular arcade, most likely a branch of the pancreaticoduodenal artery, was confirmed by angiography. Following this, the pancreaticoduodenal artery was embolized using adhesive and microcoils. The etiology of the melena was further investigated with an esophagogastroduodenoscopy (EGD) (Figure 2).

Figure 2. Esophagogastroduodenoscopy showing Old Blood in the Duodenum near the Vater's Ampulla

Although there was no blood in the stomach, there was old blood in the duodenum near the Vater's ampulla. No active bleeding source was found, and it seemed that the hemorrhagic pseudocyst's contact with the pancreatic duct was causing blood to intermittently flow out of the ampulla of Vater, which is consistent with hemosuccus pancreaticus. A few weeks later, the patient had been discharged, given follow-up imaging since there was no more bleeding or pain in the abdomen. The Arrow in the picture shows a 4 × 5 × 7 centimetres complex cystic mass in the area of the pancreatic head's uncinate process on a contrast-enhanced abdominal CT scan. It had an enhancing capsule and a tiny hyperdensity that indicated a peripancreatic pseudoaneurysm.

Discussion

Hemosuccus pancreaticus is a very rare but possibly lethal reason for upper gastrointestinal bleeding. Bleeding from the ampulla of Vater through the pancreatic duct is its defining feature [2]. Usually associated with pancreatic tumours, chronic pancreatitis, and sometimes pancreatic pseudocysts, it is one of the rarest causes of upper gastrointestinal bleeding. Early diagnosis is

difficult because of its anatomical position, rarity, and sporadic symptoms [7]. Pancreatitis, vascular malformations, and pancreatic tumours, such as serous cystic neoplasm, pancreatic carcinoma, and neuroendocrine tumours, are common causes, especially when the pancreas divisum is involved along with chronic pancreatitis [8]. Ruptures of pseudoaneurysms in the peripancreatic arteries linked to acute or chronic pancreatitis are the most common cause of the disorder [9]. The splenic, gastroduodenal, pancreaticoduodenal, gastric, and hepatic arteries are among the arteries implicated in gastrointestinal hemorrhage [10]. Bleeding into the pancreatic parenchyma or pseudocyst, peritoneal cavity hemorrhage, or upper gastrointestinal bleeding might result from the pseudoaneurysm rupturing. Abdominal pain, upper gastrointestinal bleeding, and increased amylase levels are common symptoms of hemosuccus pancreaticus patients. Increased intraductal pressure brought on by blood distending the main duct is frequently the cause of abdominal discomfort [11]. The pain is usually eased within a half-day by bleeding, which might appear as melena, hematemesis, or even hematochezia [12]. The development and breakdown of clots in the pancreatic duct or pseudocyst is frequently the cause of the bleeding's sporadic character.

Conclusions

Diagnosing hemosuccus pancreaticus is challenging because of its rarity, location, and the intermittent nature of its symptoms. An experience with hyperamylasemia, upper gasterointestinal bleeding, plus abdominal discomfort accompanied by pancreatic vascular diseases, pancreatic tumors, or chronic pancreatitis, should raise suspicion for this condition. Additionally, it's important to distinguish hemosuccus pancreaticus from other uncommon reasons for extraluminal UGIB, like hemobilia along with primary aortoenteric fistula.

Conflicts of Interest

None.

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