**Hemosuccus pancreaticus** treated with gastroduodenopancreatectomy: a case report and review of literature

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**ABSTRACT**

Introduction: *Hemosuccus pancreaticus* is a rare cause of upper gastrointestinal bleeding and usually occurs as a complication of chronic or acute pancreatitis. Its recognition requires a high clinical suspicious, and sometimes the complementary exams are only suggestive but not definitive for diagnosis. The treatment strategy depends on the cause of the *hemosuccus pancreaticus*. Case Report: We report a patient with chronic pancreatitis that presented acute abdominal pain and acute upper gastrointestinal bleeding. An upper digestive endoscopy showed an active bleeding from the major duodenal papillae, leading the diagnosing of *hemosuccus pancreaticus*. An abdominal Angio-CT scan identified a gastroduodenal artery aneurism, followed with embolization of this aneurism. Due to recurrence of bleeding, the patient was submitted to a gastroduodenopancreatectomy, as a rescue measure after embolization failure. Conclusion: The diagnosis for *hemosuccus pancreaticus* requires a high clinical suspicious, once the visualization of an active bleeding during an upper digestive endoscopy occurs in the minority of cases. Angioembolization is the initial therapy in many cases, but sometimes surgical procedures are mandatory for a definitive treatment.

Keywords: Chronic pancreatitis, gastroduodenopancreatectomy, hemosuccus pancreaticus.

**INTRODUCTION**

*Hemosuccus pancreaticus* is a rare cause of upper gastrointestinal bleeding, representing only 1:1.500 of all cases. The main cause is peripancreatic arterial pseudo aneurism secondary to acute or chronic pancreatitis, especially in the splenic artery. Involvement of the common hepatic, superior mesenteric, gastric, pancreatoduodenal and gastroduodenal arteries were already described, but are less common. Other causes include benign or malignant tumors, trauma and iatrogenic.[1]

In most cases, patients with this condition present with acute exacerbation of a chronic pancreatitis associated to intermittent gastrointestinal bleeding, as well as sometimes with long-term anemia as the unique symptom.[8] Usually the site of the bleeding remains obscure, as the visualization...
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of an active bleeding from the major duodenal papillae is unusual, enhancing the difficulty of the diagnosis.\textsuperscript{[1,2,3]}

The management of these patients depends on the hemodynamic condition and the origin of the \textit{hemosuccus pancreaticus}. Radiological images often reveal signs of pancreatitis and may suggest a peripancreatic arterial aneurism. Visceral angiography are useful because it confirms a suspected arterial abnormality, may define the diagnosis of hemosuccus pancreaticus if it shows an active bleeding (although a rare event), and allows a therapy with embolization. The success with this procedure allows the hemodynamic clinical stabilization of the patient as well as can be the final treatment.\textsuperscript{[2]}

Despite the efficacy of the embolization in stopping an active bleeding, usually it is unable to avoid future hemorrhages and frequently a surgical treatment is necessary. The procedure of choice depends on the exact site of bleeding, and may include a splenectomy with distal pancreatectomy, surgeries for the treatment of pancreatic pseudocysts associated to peripancreatic pseudoaneurism excision, exclusive approach to the arterial abnormality, or even major pancreatic resections, such as total pancreatectomy or gastroduodenopancreatectomy.

**CASE REPORT**

We report a case of a 54-years-old afro descendent male with the diagnosis of chronic pancreatitis for 23 years, without symptoms of diabetes or diarrhea. He was a smoker and a former alcoholic consumer (300 g/day for more than 20 years, stopped a year ago), referring five clinic admissions due to acute pancreatitis since the diagnosis of chronic pancreatitis. In December 2011 was admitted with a new episode of acute pancreatitis and a gallstones disease was diagnosed. The patient was successfully submitted to a laparoscopic cholecystectomy in January 2012.

In March 2012 was readmitted in the clinic with abdominal pain followed by hematemesis started the day before, in stable hemodynamic condition, without signs of peritonitis, with serum hemoglobin and amylase level of 7.1 g/dL and 200 U/L respectively. Upper gastrointestinal endoscopy and colonoscopy did not show the site of bleeding. A RMI revealed signs of chronic pancreatitis and a gastroduodenal artery aneurism, confirmed by an Angio-CT scan (Figure 1).

A new episode of abdominal pain without significant elevation of serum amylase levels was followed by hematemesis, requiring blood transfusion. A second upper endoscopy showed an active bleeding from the major duodenal papillae, leading the diagnosis of \textit{hemosuccus pancreaticus} (Figure 2).

The patient was submitted to an embolization of the gastroduodenal artery aneurism (Figure 3), despite the absence of an active bleeding during the arteriography.

The patient remained asymptomatic for a week, when presented a new episode of upper gastrointestinal bleeding. Due to the multiple blood transfusions and the failure of...
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A successfully postoperative recovery was observed and the patient was discharged after days. Histopathological analysis confirmed the diagnosis of chronic pancreatitis, with a recent focal vascular thrombosis, vascular congestion and recent interstitial bleeding in the gastroduodenal wall. There were no signs of malignancy in the specimen.

DISCUSSION

In 1931, Lower and Farrell[4] first described a bleeding through the pancreatic duct due to the rupture of a splenic artery aneurism, and the term *hemosuccus pancreaticus* was proposed by Sandblom[5] in 1970. *Hemosuccus pancreaticus* is a condition of difficult diagnosis and the treatment is individualized according to the cause of bleeding. While hemodynamic unstable patients deserve an immediate aggressive approach, others can be better evaluated. Even in stable patients, careful should be taken in offering a definitive therapy in order to avoid a severe life-threatening bleeding. Sakorafas et al.[3] reported that almost half of the patients in their review (3 out of 8 patients) were hemodynamically unstable at admission and one died from uncontrollable hemorrhage.

The gastroduodenal artery aneurism reported herein is unusual, as splenic artery aneurism would be more common. As reported by Liano et al.[1], the splenic artery pseudo aneurism is responsible for 60-70% of the *hemosuccus pancreaticus* cases. We interpreted the aneurism as the possible major cause of bleeding in this case, even though a neoplasm in the pancreas head could not be totally excluded at that time. Due to the multiple episodes of bleeding during the hospital stay, probably associated to a high inflammatory reaction in the pancreas, an embolization was indicated as the initial approach, despite the absence of active bleeding at the moment of arteriography. Knoefel and Rehders[6] reported that angiography is recognized as the definitive investigation for complex conditions such as *hemosuccus pancreaticus* and that angiographic hemostasis can be achieved in most cases. Etienne et al.[2] concluded in their review that endovascular treatment can control an unstable hemodynamic situation before elective surgery to prevent recurrence, which can be more severe than the first event.

The site of bleeding could not be determined at arteriography in our case, but there were evidences that it was in the head of the pancreas, where both radiologic and arteriography images revealed an abnormal hyper-vascularization. Due to absence of others therapeutic options, a gastroduodenopancreatectomy was indicated as a rescue measure. This aggressive approach has already been related by Sakorafas et al.[3], who reported a pancreatoduodenectomy and a total pancreatectomy in 2 cases each. Arnaud et al.[7], Bohl et al.[8] and Ray et al.[9] also reported surgical procedures in the management of *hemosuccus pancreaticus*.

Questions could be raised regarding the option for a gastroduodenopancreatectomy instead of a pancreatoduodenectomy in this case. The choice for the first was tactical, due to a significant inflammatory reaction in the duodenal area.
The diagnosis of chronic pancreatitis and the absence of malignancy were confirmed at the histopathological examination.

CONCLUSION

Hemosuccus pancreaticus is an unusual cause of upper gastrointestinal bleeding and is associated with chronic or acute pancreatitis. Arterial embolization is the initial treatment of choice, but a surgical procedure, such as a gastroduodenopancreatectomy, can be necessary as a lifesaving approach.

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REFERENCES