CASE REPORT

Obscure upper gastrointestinal haemorrhage: haemosuccus pancreaticus

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SUMMARY

A Caucasian man aged 28 years with a history of pancreatitis presented with fatigue, intermittent melaena and severe anaemia. Symptomatic treatment for anaemia was coupled with thorough investigation to localise the source of gastrointestinal haemorrhage. Two oesophagogastroduodenoscopies and colonoscopies failed to identify a cause. CT abdomen revealed splenomegaly secondary to splenic vein thrombosis with evidence of portal hypertension and small collateral vessels. A CT mesenteric angiogram revealed a splenic artery pseudoaneurysm as the likely source of bleeding. This was embolised successfully via interventional radiology and the patient's haemoglobin levels stabilised. During admission, the patient also developed severe epigastric pain radiating to the back secondary to acute-on-chronic pancreatitis, as evidenced by MRCP. The acute pancreatitis resolved with medical management, but the pain from his chronic condition was extremely difficult to control, even with opioids. He consequently underwent a successful splenic nerve radiofrequency ablation.

BACKGROUND

Haemosuccus pancreaticus is upper gastrointestinal haemorrhage from the ampulla of Vater via the pancreatic duct. It is usually due to a splenic artery aneurysm or pseudoaneurysm haemorrhaging into the pancreatic duct. It is associated with pancreatitis and pancreatic cancer and is a diagnostic challenge as conventional investigations such as endoscopy are often not diagnostic due to the intermittent nature of bleeding.¹

CASE PRESENTATION

A Caucasian man aged 28 years with a background of alcohol-induced pancreatitis initially presented with symptomatic iron-deficiency anaemia. Investigations, including oesophagogastroduodenoscopy (OGD) and colonoscopy, were unremarkable except for incidental gastric varices. He improved with blood transfusions and was discharged home with outpatient follow-up.

He represented 3 weeks later to the emergency department with fatigue and intermittent melaena. He appeared dyspnoeic and palloric with haemoglobin 28 mmol/L: blood tests confirmed iron-deficiency anaemia. He was resuscitated and a repeat OGD was unremarkable except for a non-haemorrhaging, chronic duodenal ulcer. Faecal calprotectin was normal, as was a HIV test performed to exclude Kaposi's sarcoma. Despite improved haemoglobin levels, he continued to have episodes

of haematochezia and melaena. CT enterography and subsequent capsule endoscopy did not reveal small bowel pathology.

INVESTIGATIONS

A CT chest, abdomen and pelvis demonstrated numerous calcifications within the pancreas suggestive of chronic pancreatitis. Splenic vein thrombosis causing splenomegaly was identified, likely secondary to pancreatitis. The portal vein measured 15 mm in diameter with evidence of portal hypertension, including collateral vessel formation. Haemorrhage from this collateral vasculature was our initial impression.

Unfortunately, the patient continued to have episodes of haematochezia. A technetium pertechnetate-99 radionuclide scan was carried out to investigate for a Meckel's diverticulum which was negative. The patient underwent a repeat OGD and colonoscopy showing insignificant non-bleeding gastric varices and a normal colon.

A CT mesenteric angiogram was undertaken to identify the source of bleeding and revealed a splenic artery pseudoaneurysm of 9.8 mm diameter near the body of the pancreas. Concurrently, the patient developed vomiting and severe epigastric pain radiating to his back. A subsequent MRCP demonstrated a 1.9 cm collection in the head-neck junction of the pancreas with peri-pancreatic oedema suggestive of acute-on-chronic pancreatitis, which was medically managed. A low faecal elastase confirmed chronic pancreatitis and pancreatic enzyme replacement was initiated.

TREATMENT

Percutaneous embolisation of the splenic artery was undertaken under local anaesthesia via a right common femoral artery puncture. Azur hydrocoils were deployed into the pseudoaneurysm which was successfully thrombosed with no distal arterial compromise (figure 1). The patient's haemoglobin levels stabilised, gradually increasing to over 100 mmol/L, with no further haemorrhage.

Following his episode of acute pancreatitis, the patient developed incapacitating epigastric pain resistant to high-dose opioid or neuropathic analgesia. He underwent a splenic nerve block under local anaesthesia which provided transient relief. A permanent splenic nerve radiofrequency ablation then resulted in significant analgesia.

To assess whether this haemosuccus pancreaticus was the original cause of upper gastrointestinal haemorrhage, we reviewed the initial CT abdomen scan and identified the splenic artery

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Figure 1 CT angiogram illustrating percutaneous embolisation of the splenic artery pseudoaneurysm using Azur coils with no distal compromise.

Figure 2 Original CT scan illustrating the splenic artery pseudoaneurysm.

pseudoaneurysm which had been present since the onset of his symptoms ([figure 2](#)).

DISCUSSION

Haemosuccus pancreaticus is a rare cause of upper gastrointestinal haemorrhage. It is more common in men and typically presents as epigastric pain radiating to the back coupled with sporadic gastrointestinal bleeding. Amylase may also be raised. The splenic artery is most often accountable, though other blood vessels such as the gastroduodenal, pancreaticoduodenal and left gastric arteries may be involved.² Rarely, haemosuccus pancreaticus can be caused by pancreatolithiasis or pseudocyst of the pancreas.^{3 4}

Bleeding can occur from a pseudoaneurysm and true aneurysm. Both are associated with acute and chronic pancreatitis, as well as pancreatic tumours. In the former, it is believed to

develop from pancreatic enzymatic autodigestion of the arterial wall.⁵ In our patient, the artery was further affected by portal hypertension resulting from splenic vein thrombosis. The risk of pseudoaneurysm rupture is 37% with a mortality of 90% if untreated.⁵

Haemosuccus pancreaticus is typically diagnosed on CT mesenteric angiography. Contrast-enhanced CT abdomen can identify features consistent with acute or chronic pancreatitis, but does not always visualise a pseudoaneurysm, and OGD may detect bleeding via the papilla in 30% of cases, but haemorrhage is typically intermittent which makes diagnosis difficult.⁴

Interventional radiology treatment techniques, including endovascular coiling via angiography, are first line. A surgical approach including aneurysm resection, splenectomy if the aneurysm is distal, or resection of the pancreatic head or tail, is employed where radiological treatment fails or the source of bleeding is not identified.⁴

Haemosuccus pancreaticus is a rare cause of upper gastrointestinal haemorrhage. It should be considered in any patient with a history of pancreatitis. More common causes such as peptic ulcer disease, inflammatory bowel disease and Meckel's diverticulum should be excluded first. Pain management in chronic pancreatitis is challenging and a multidisciplinary approach is key to effective management.

Our patient had haemosuccus pancreaticus based on his medical history, clinical presentation and CT scan findings. His history of chronic pancreatitis had led to a splenic vein thrombosis leading to features of portal hypertension. Another complication of pancreatitis was the formation of a splenic artery pseudoaneurysm which opened into his pancreatic duct with consequent gastrointestinal haemorrhage. This was successfully treated by endovascular coiling via angiography. Retrospective review of the initial CT abdomen images reveals what in hindsight appears to be the splenic artery pseudoaneurysm. We would recommend a lower threshold of diagnosing haemosuccus pancreaticus in patients with a similar clinical presentation.

Learning points

- ▶ Symptomatic anaemia in a young adult should be thoroughly investigated prior to discharge to ensure the underlying pathology is treated.
- ▶ Systematic investigation allows differential diagnoses of upper gastrointestinal haemorrhage to be excluded in a logical manner with more common pathologies being tested for initially.
- ▶ Haemosuccus pancreaticus should be considered when thorough investigation has not revealed alternative pathology, particularly in a patient with a history of alcohol abuse.
- ▶ Given the sporadic nature of haemorrhage through the ampulla of Vater, one should have a low index of performing a small bowel angiogram when haemosuccus pancreaticus is suspected.

Contributors PS is involved in patient care, management and organisation of scans plus literature review and manuscript write up. AK is involved in patient care, management and organisation of scans plus literature review and manuscript write up. MJ is a consultant in charge of case involved in researching case, guidelines on Upper GI bleeding, investigations and their analysis. JS is the chief consultant of

gastroenterology involved with guiding patient management and investigation and in carrying out literature review.

Competing interests None declared.

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