CASE REPORT

GASTROINTESTINAL HEMORRHAGE DUE TO SPLENIC ARTERY ANEURYSM PANCREATIC DUCT FISTULA IN CHRONIC PANCREATITIS

A case report and review of the literature

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Gastrointestinal hemorrhage due to splenic artery aneurysm pancreatic duct fistula in chronic pancreatitis is rare. It is, however, important to diagnose this condition particularly in patients having chronic pancreatitis, since it may result in a life-threatening situation. The diagnosis is usually difficult to establish and it may take repeated admissions for intermittent gastrointestinal bleeding until the real source is recognized. Clinical attacks of epigastric pain followed by GI-bleeding 30–40 minutes later are characteristic. Occasionally these attacks are followed by transient jaundice. The present case report describes this rare complication and reviews the current literature.

INTRODUCTION

While hemobilia is now well recognised (Sandblom), hemorrhage through the pancreatic duct, termed “hemowirsungia” by Bismuth¹, “hemosuccus pancreaticus” by Sandblom², “hemoductal pancreatitis”³ and “wirsungorrhagia”⁴ is less frequently documented as a cause of gastrointestinal hemorrhage.

While close to 110 cases of bleeding through the pancreatic duct have been published^{5–13} only 26 cases due to rupture of a splenic artery aneurysm into the pancreatic duct in combination with pancreatitis are to be found in the literature^{14–18}.

The typical triade of attacks of gastrointestinal hemorrhage, pain in the epigastric area and occasional jaundice should blood enter into the biliary tract, are similar to the symptomatology of hemobilia and while undiagnosed upper gastrointestinal bleeding in the presence of chronic pancreatitis should suggest the diagnosis, the

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condition may persist for long periods of time and be the true cause of repeated gastrointestinal hemorrhage remaining masked.

This paper reports the case of gastrointestinal hemorrhage due to splenic artery aneurysm pancreatic duct fistula in chronic pancreatitis. The relevant literature is reviewed.

CASE REPORT

A 61 year old male was admitted to hospital in 1990 having had several attacks of upper abdominal pain followed by the passage of bright red blood per rectum, occurring some 30 minutes after the onset of each attack. The history revealed that the patient had had a ski accident with chest trauma in 1970. Multiple left sided rib fractures and an injury to the right shoulder were treated at that time but later in the same year he began to suffer from recurrent attacks of acute pancreatitis. Ten years later he developed a sudden onset of abdominal pain followed shortly afterwards by melaena. At that time no source of bleeding was detected at gastroscopy or colonoscopy. The history was otherwise unremarkable.

On admission to hospital after another attack of abdominal pain it was found that the hemoglobin was 7.8 g/% but other hematological investigations including liver function tests and pancreatic enzymes were normal. Colonoscopy was unremarkable and gastroscopy revealed several non bleeding gastric varices. A CT scan of

Figure 1 Angiography of celiac trunk. Arrow shows "aneurysma-like" dilatation of splenic artery. (See colour plate at the back of this issue).

the abdomen detected multiple calcifications in the head of the pancreas and Duplex sonography showed thrombosis of the splenic vein and splenomegaly. Blood transfusion was necessary and the patient was then transferred to the Department of Visceral Surgery at Inselspital Bern with a diagnosis of portal hypertension associated with splenic venous thrombosis. Examination of the patient was normal except for gross splenomegaly.

While in hospital the patient suffered a further attack of melaena associated with upper abdominal pain and shock. Gastroscopy again showed non bleeding gastric fundal varices and emergency colonoscopy no source of bleeding but blood in the entire length of the colon. A repeat colonoscopy after bowel preparation was normal. Emergency coeliac access and superior mesenteric angiography did not

Figure 2 ERCP showing a stenosis of the pancreatic duct in the neck of the pancreas in projection on the spine. (*See colour plate at the back of this issue*).

reveal any source of bleeding. However an aneurysm of the mid portion of the splenic artery was detected (Figure 1). Radio-labeled erythrocyte scintigraphic scanning proved negative. Endoscopic retrograde cholangiopancreatography (ERCP) (Figure 2) showed a stenosis of pancreatic duct in the region of the neck, very suggestive of post traumatic change combined with multiple ductal irregularities and evidence of distal pancreatitis in the tail of the pancreas.

The patient was taken to operation and at laparotomy after opening the lesser sack a grossly scared neck of the pancreas was identified lying directly over the vertebral column. A posttraumatic aneurysm of the splenic artery 5 mm in diameter precisely within the area of scaring was also evident. Thrombosis of the splenic vein was confirmed. Splenectomy and pancreatic tail resection including the entire aneurysm was performed. Examination of the specimen revealed splenic artery aneurysm-pancreatic duct fistula in a chronically inflamed pancreas (Figure 3 showing the fistula macroscopically). The patient had an uneventful postoperative course and was well at follow up one year later.

DISCUSSION

Chronic pancreatitis complicated by splenic artery aneurysmal rupture into the pancreatic duct with gastrointestinal hemorrhage is rare but life-threatening. The key to therapy is the high diagnostic index of suspicion in patients with chronic pancreatitis who present with gastrointestinal bleeding of unknown cause. A review of the literature reveals that every patient suffering from the condition has

Figure 3 Splenic artery with aneurysm (arrow). (*See colour plate at the back of this issue*).

complained of intermittent epigastric pain followed by episodes of acute gastrointestinal bleeding which occur some 30 to 40 minutes after the onset of symptoms. Characteristically multiple admissions to hospital precede the correct diagnosis. Indeed 70% of patients required more than one admission to hospital prior to diagnosis and indeed symptoms may have been present for up to 10 years (Table 1)¹⁴⁻¹⁸. Angiography has revealed the existence of a splenic artery aneurysm in 25 of

Table 1 Summary of 27 reported cases (including present case)

<i>Number of Admissions</i>	
Mean	2.7
Range	1-3
<i>Duration of Symptoms Until Diagnosis (years)</i>	
Mean	2.44
Range	1-120 mo.
<i>Age (years)</i>	
Mean	54.3
Range	16-80
Male:Female	1.7:1
<i>Angiography</i>	
Splenic Artery Aneurysm	25
Leak into pancreatic duct	5

Figure 4 Pancreatic duct (arrow). Fistula from splenic artery aneurysm into the pancreatic duct. Head of the probe (arrow). (See colour plate at the back of this issue)

27 cases (including the present case). In two cases the diagnosis was found at autopsy. A frank communication with a leak of contrast into the pancreatic duct was demonstrated in only 5 patients. Emergency gastrointestinal endoscopy only rarely identifies bleeding from the papilla of Vater since the bleeding is intermittent and is usually stopped by the time examination is carried out or visibility may be impaired by active hemorrhage. ERCP usually reveals the ductal irregularities characteristic of pancreatitis but not the aneurysm.

Treatment may be by embolisation (Hemingway, Allison, Blumgart) or by surgical operation. Of the 27 reported cases operation was carried out in 26. The standard surgical procedure being pancreatectomy, aneurysectomy and splenectomy. There have been no operative deaths reported in the literature and short term follow up was uneventful in each case. The one patient treated by radiological embolisation also fared well. Indeed while operation will continue to be the first choice for many the availability of good interventional radiology should encourage embolisation in suitable cases and it may even be used in the unstable patient to bide time for resuscitation and subsequent surgery²⁰.

The key to successful treatment rests on a high index of diagnostics suspicion, good angiographic studies and a surgical procedure or interventional radiological approach, which effectively occludes or removes the aneurysm and thus the risk of bleeding. At surgical operation it is usually necessary to excise the aneurysm along with the damaged pancreatic tail and spleen.

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