

Recurrent gastrointestinal blood loss of obscure origin : report of an exceptional case

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Abstract

A 66-year old tailor was admitted because of venous insufficiency of the left lower leg. During the hospital course, recurrent severe gastrointestinal blood loss developed. A classical approach was extended by enteroscopy and radionuclide scanning, followed by exploratory laparotomy with removal of two intra-abdominal sewing needles and a jejunal leiomyoma. After surgery, bleeding did not recur.

This case illustrates the difficult diagnostic work-up of obscure gastrointestinal bleeding. It also shows that intra-abdominal sewing needles may migrate in the intestinal tract and remain silent during many years, eventually causing gastrointestinal bleeding. (*Acta gastroenterol. belg.*, 1998, 61, 382-384).

Key words : gastrointestinal, bleeding, needles, obscure.

Introduction

Recurrent gastrointestinal blood loss of obscure origin remains a diagnostic and therapeutic challenge for the clinician. Since obscure digestive blood loss is defined as bleeding for which no definite source can be identified by routine endoscopic and barium studies, other investigations are necessary to make a diagnosis. The diagnostic work-up, including small bowel endoscopy, angiography, radionuclide scanning and exploratory laparotomy with intraoperative endoscopy constitutes the basis of this report. In our patient, several investigations showed the presence of a jejunal leiomyoma and multiple sewing needles in close relation to the digestive tract. The possible role of a leiomyoma and multiple intra-abdominal needles causing gastrointestinal blood loss is discussed.

Case report

A 66-year-old tailor was admitted to the section of dermatology because of chronic pain and skin abrasion of the left leg, due to venous insufficiency. The patient had a history of arterial hypertension, myocardial infarction, ischemic heart failure, arrhythmia and a cholecystectomy. During his work as a tailor, he had ingested several sewing needles. An unsuccessful attempt to remove a thoracic needle was made several years earlier. The patient's home treatment consisted of lisinopril (Zestril) 20 mg, aspirin (Asaflo) 100 mg, amlodipine (Amlor) 5 mg, nitroglycerine (Cedocard) 2 × 2.5 mg and sotalol (Sotalex) 2 × 80 mg daily.

Physical examination on admission revealed a patient in good general health. Blood pressure was 160/100 mmHg and heart rate was regular at 76 beats per minute. Temperature was 37.0°C. Heart and lung auscultation were normal. Abdominal examination revealed no organ enlargement. Signs of venous insufficiency were noted on both legs, with major varicose veins, skin discoloration and extensive abrasion of the left lower leg. Neurologic examination was unremarkable. Rectal examination was normal.

On admission the hematocrit, the white blood cell count and the platelet count were normal. The iron status was within the normal range. The values of serum ureum, creatinine, calcium, phosphorus and electrolytes were all within the normal range, as were the values of transaminases, LDH, CK, alkaline phosphatase and gamma-glutamyltranspherase. Chest radiography showed a slightly enlarged cardiothoracic index and the presence of a metallic density projecting over the cardiac shadow. CT scanning of the chest confirmed the presence of a needle in the left ventricular cavity.

On day 52 after admission the patient reported hematemesis. Physical examination was unchanged. Blood pressure was 160/100 mmHg and heart rate was 88 beats per minute. The hematocrit dropped to 26.4%. Endoscopy of the upper gastrointestinal tract showed three antral ulcerations without active bleeding or stigmata of recent bleeding. Treatment with lansoprazole (Dakar) 30 mg daily was initiated.

During the following days blood loss with hematemesis and melena recurred despite treatment. Repeated endoscopy after twelve days no longer demonstrated ulceration or active bleeding. Colonoscopy revealed mild erythematous lesions predominantly in the descending colon, but no bleeding source could be identified.

During the following days melena persisted and mild right upper quadrant pain occurred. Abdominal radiography showed several metallic densities in the upper and lower part of the abdomen. CT scanning confirmed the presence of three metallic structures : one in the left liver lobe, one in the mesentery of the small bowel

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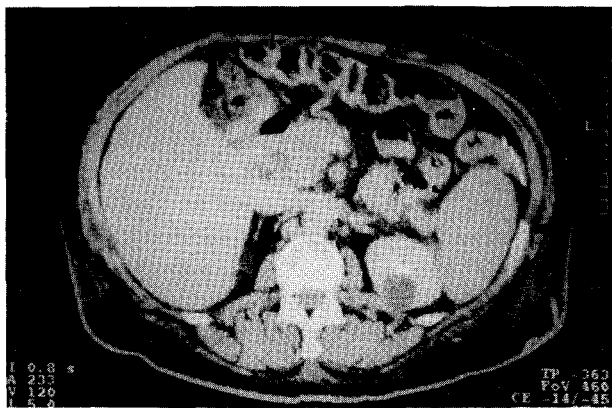


Fig. 1. — CT scanning of the abdomen with the intramesenteric needle.

and one adjacent to the descending colon (see Figure 1). Enteroclysis and barium enema were normal. ^{99m}Tc -pertechnetate scanning could not demonstrate Meckel's diverticulum. ^{99m}Tc -labeled RBC-scanning showed a bleeding source at the level of the stomach. Visceral arteriography was not performed because of intermittent blood loss and poor cardiac function. Enteroscopic examination with progression as far as 70 cm beyond the Treitz ligament could not visualize any lesion. Intermittent blood loss continued and gastroscopy was repeated. Despite treatment with lansoprazole, new antral ulcerations with bleeding signs were noted. Anatomopathological examination of gastric biopsies revealed *Helicobacter pylori*. Treatment was changed to metronidazole (Flagyl) 2×500 mg, clarithromycin (Biclar) 2×250 mg and omeprazole (Losec) 2×20 mg for ten days. Anatomopathological examination of duodenal, jejunal, ileal and colonic biopsies was unremarkable.

Because of persistent intestinal blood loss and hemoglobin concentrations regularly dropping below 8 g/dl, necessitating a total amount of 18 units of packed cells, suspicion of intermittent intestinal damage by the intra-abdominal needles was raised. On the 52th day after onset of bleeding, an exploratory laparotomy was performed. One rusty needle was found in the anterior abdominal wall in connection with the sigmoid. A second needle was found in the left liver lobe, adjacent to the stomach wall but without perforating it. A small tumoral process was located on the serosal side of the jejunum 15 cm beyond the Treitz ligament and was resected. Anatomopathological examination of the lesion showed a leiomyoma in the muscularis propria. There were no signs of ulceration. Peroperative inspection and enteroscopy could not demonstrate any other lesion possibly responsible for recurrent blood loss.

Postoperative evolution was uncomplicated, with stable hemoglobin concentrations (10.7-12.1 g/l) and normal stools. The patient was discharged on the 123th hospital day.

Discussion

Gastrointestinal bleeding is a common disorder and can be divided into acute overt bleeding, occult bleeding and bleeding of obscure origin (1). Occult gastrointestinal bleeding refers to bleeding manifested by iron deficient anemia or haem positive stools. Acute upper gastrointestinal bleeding is the most frequent presentation of gastrointestinal blood loss. Upper endoscopy can correctly identify the bleeding source in up to 95% of the cases if performed within 24 hours after the onset of bleeding (2). The identification of the bleeding source is more problematic in acute lower gastrointestinal bleeding. Colonoscopy is the procedure of choice unless bleeding is too massive, in which case angiography is more helpful. A correct diagnosis can thus be made in up to 80% of the cases (1). Obscure bleeding is defined as recurrent bouts of acute or chronic bleeding for which no definite source can be discovered by routine endoscopic and barium studies (1).

In a recent study, enteroclysis correctly identified the bleeding site in 21% of 128 patients with obscure bleeding (3). Visceral angiography can provide a diagnosis in a significant percentage (44%) of patients in whom noninvasive techniques failed to demonstrate a bleeding site (4). In few patients ERCP provides the diagnosis of hemosuccus pancreaticus (5). Radionuclide scanning is a non-invasive method of identifying the site and occasionally the nature of the bleeding lesion. ^{99m}Tc sulfur colloid scanning can detect lesions with a bleeding rate as low as 0.1 ml per minute. ^{99m}Tc pertechnetate labeled red blood cell scanning is even more sensitive, since the extravasated red blood cells with a half life of 24 hours are pooled at the bleeding site. Repeated scans can be obtained over 24 to 36 hours and detect intermittent blood loss (6).

There are several reasons why a bleeding source may be difficult to identify. First, bleeding may originate at various sites. Second, the lesion may be in an area that is difficult to evaluate. Finally, lesions with minimal mucosal alterations may be overlooked, unless actively bleeding. Special attention should be paid to the Dieulafoy ulcer, which can be diagnosed only when actively bleeding and thus requires repeated endoscopy for its discovery.

Multiple causes of obscure bleeding have been recognized (see Table I).

Although bleeding in the small intestine is uncommon, it is a frequent cause of obscure gastrointestinal bleeding. Indeed, the diagnosis of small bowel lesions is often difficult since the small bowel is less accessible than the stomach or colon. Its free intraperitoneal location, its length and its contractility limit direct visualisation. Push or pull small bowel endoscopy have been reported to identify bleeding sites in up to 50% of patients with obscure bleeding (7). In some cases exploratory laparotomy is performed, accompanied by intraoperative small bowel endoscopy. This technique

Table I. — Causes of obscure gastrointestinal bleeding

— Aortoenteric fistula
— Bleeding in runners
— Blue rubber bleb nevus syndrome
— Dieulafoy's syndrome
— Familial hemorrhagic telangiectasia
— Hematobilia
— Hemosuccus pancreaticus
— Intussusception
— Jejunal diverticula
— Meckel's diverticulum
— Peutz-Jeghers syndrome
— Pseudoxanthoma elasticum
— Small bowel angiodysplasia
— Small bowel neoplastic lesions
— Small bowel ulcerations

identified specific mucosal abnormalities in 70% of patients with obscure bleeding (8).

Small bowel tumors account for 5 to 10% of cases of obscure gastrointestinal bleeding and are the most common cause in young patients (9).

The leiomyoma found in our patient was probably not responsible for the recurrent bleeding. Indeed, bleeding lesions beyond the Treitz ligament almost never present with hematemesis. Furthermore, even peroperatively performed enteroscopy did not show mucosal abnormalities near the leiomyoma. Finally, microscopic examination of the operation specimen showed a leiomyoma in the muscularis propria with an intact overlying mucosa.

The presence of multiple rusty needle parts in the abdomen makes this case peculiar. The needles were first seen on conventional radiography. Subsequently CT scanning focused on the needles was performed. No surrounding inflammatory changes could be identified, nor did the needles perforate the bowel wall. On several occasions, gastric ulcerations were found endoscopically, yet without visualization of a needle tip. However, an underlying needle causing transmural inflammation with bleeding can not be excluded. This could be the explanation for the non-healing gastric ulcers despite treatment. Colonoscopy also showed areas of aspecific irritation. An underlying needle was not seen but could not be excluded.

To identify the source of bleeding in our patient and to remove the sewing needles, an exploratory laparotomy was performed. Apart from a small leiomyoma, no other abnormalities than several sewing needles could be identified. Two of these needles were in close contact with the digestive tract: one adjacent to the sigmoid and another one to the gastric antrum. After surgical removal of the needles and the leiomyoma, the patient did not bleed any more. Since it is unlikely that the leiomyoma caused bleeding, we assume that the needle adjacent to the gastric antrum was responsible for the intermittent bleeding episodes in our patient. Review of the literature (Medline 1966-1996) revealed a few cases of migration of a sewing needle from the digestive tract to the liver, the peritoneum and the kidney (10,11,12). Furthermore, removal of

needles from the esophagus and stomach has been described (13,14). Only one case of gastrointestinal bleeding due to a needle causing a jejuno-aortic fistula has been reported (15).

This case illustrates that intra-abdominal sewing needles may remain silent during several years, before causing possibly severe gastrointestinal bleeding, which is often difficult to manage. In this patient, a possible provocative role of the hospital stay and a stress-induced mucosal irritation can not be excluded. Apparently no significant bleeding had occurred before the hospitalization, since the patient had a normal iron status on admission.

Conclusion

We conclude that obscure gastrointestinal bleeding may present a "diagnostic nightmare" for the clinician. Extended work-up, including exploratory laparotomy with intraoperative enteroscopy, may be necessary for a correct diagnosis. We believe that intra-abdominal sewing needles leading to bleeding should be added to the long list of exceptional causes of obscure gastrointestinal blood loss.

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