CASE REPORT

Anticoagulation-induced spontaneous intramural small bowel haematomas

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SUMMARY

Small intestinal intramural haematomas may develop spontaneously, especially in patients with deranged clotting function. We present a case of a 57-year-old man who developed abdominal pain in the setting of abnormal clotting function secondary to an inadvertent warfarin overdose. A CT scan showed thickening of parts of the distal ileum, terminal ileum and duodenum. Dilation of the small bowel proximal to the thickening was also reported, indicative of a degree of small bowel obstruction. The patient was treated conservatively with a nasogastric tube and intravenous fluids. His anticoagulation was fully reversed with fresh frozen plasma and vitamin K. The patient remained well 6 months following discharge, with well-controlled anticoagulation levels and resolution of the findings on CT.

BACKGROUND

Small bowel intramural haematomas have long been recognised secondary to blunt abdominal trauma, especially in children. They were first reported on autopsy in 1838 by McLouchan who described them as ‘false aneurysms’ of the intestinal wall. The non-traumatic variety of spontaneous small bowel haematomas is in general a rare finding. Despite this, they are being recognised and reported more often.

CASE PRESENTATION

A 57-year-old man presented to the emergency department with a 2 day history of epistaxis, lower lip haematoma, bleeding gums, bruising and fresh rectal bleeding. The patient had a medical history of hepatitis C on ribavirin and interferon α , ischaemic heart disease, pacemaker/implantable cardioverter-defibrillator (ICD), congestive heart failure, stage 3 chronic kidney disease and paroxysmal atrial fibrillation on warfarin. The patient had ingested an accidental overdose of 15 mg warfarin daily for 3 consecutive days, then reverting to his normal dose 4 days prior to admission. On further questioning, the patient also gave a 1 day history of relatively mild abdominal pain. At the time of admission International Normalised Ratio (INR) was >10 , with a prothrombin time (PT) of >120 s and an activated partial thromboplastin time of 3.71 s. Haemoglobin was 11.1 g/dl. Creatine concentration was $129 \mu\text{mol/l}$, with a calculated estimated-glomerular filtration rate of $53 \text{ mL/min/1.73 m}^2$ and normal electrolyte concentrations. Physical examination was normal and the patient was haemodynamically stable. The patient was

admitted for reversal of anticoagulation with fresh frozen plasma and vitamin K.

Twelve hours after admission, the initially trivial abdominal pain had increased in intensity. However, the patient was not particularly distressed and only requested mild analgesia. The pain was periumbilical, radiating to the back and constant in nature. There was no associated history of trauma, coughing or excessive physical exertion. There were no clinical features of intestinal obstruction. Physical examination only revealed mild tenderness in the periumbilical and epigastric regions, with no guarding or rebound tenderness. No signs of peritonism were elicited. Blood pressure was 93/66 mm Hg and pulse 83 bpm. The patient was on β -blockers and an ACE-inhibitor, which were administered a few hours prior to examination. Serum amylase was 54 ug/l and repeat haemoglobin 10.2 g/dl . Subsequently the patient developed nausea, followed by three episodes of bilious vomiting.

INVESTIGATIONS

Given these findings, an abdominal ultrasound was performed, which revealed thickening of the duodenal wall with a sliver of free fluid around the duodenum. The ultrasound was otherwise unremarkable. This was followed by an urgent CT scan which showed thickening of parts of the distal and terminal ileum and duodenum up to 14 mm in thickness. Free fluid was noted around these sites and in the pelvis (figures 1 and 2). Dilation of the small bowel proximal to the thickening was reported. Incidental gallstones and an appendicolith were noted.

Figure 1 Unenhanced CT scan of the abdomen showing narrowing of small bowel lumen secondary to haematoma.

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Figure 2 CT scan of abdomen showing small bowel obstruction with dilation secondary to intestinal wall haematomas.

TREATMENT

The patient was managed conservatively with a 24 h period of bowel rest. His anticoagulation was also reversed on admission with 10 mg of intravenous vitamin K. A repeat coagulation screen 24 h after administration of vitamin K confirmed full reversal, with an INR of 1.2 and a PT of 14 s.

OUTCOME AND FOLLOW-UP

The patient was discharged from hospital at 1 week postadmission. His anticoagulation was restarted as an outpatient after 2 weeks with frequent monitoring. The patient remained well and a CT was repeated 6 months postdischarge, which showed resolution of the haematomas and the small bowel dilation (figure 3).

DISCUSSION

Among the spontaneous group, over-anticoagulation with warfarin is the commonest reported aetiological factor.¹ A study carried out in Switzerland quotes an incidence of small bowel haematomas of 1:2500 patients on anticoagulation per year.² Other aetiological factors include leukaemia, lymphoma, myeloma, haemophilia, von Willebrand's disease, idiopathic thrombocytopenic purpura, polyarteritis nodosa and Haenoch-Schonlein purpura.³ Small bowel haematomas have also been associated with pancreatitis and pancreatic carcinoma.⁴

Figure 3 Follow-up CT scan of the abdomen at 6 months, showing resolution of both the intestinal small bowel haematomas and bowel obstruction.

Clinically, the most frequent presenting complaint is abdominal pain, followed by nausea and vomiting. Most patients with spontaneous small bowel haematomas would have been symptomatic for several days prior to presentation or diagnosis.⁵ An obstructive picture may develop, with distension and absolute constipation in jejunal and ileal haematomas, vomiting being more common in duodenal haematomas. It was hypothesised that the progression of symptoms and the development of intestinal obstruction may be because of a hyperosmotic effect of the haematoma, which draws in fluid from the surrounding tissues.⁶ Haemorrhage in the digestive tract is also reported in up to 40% of cases, ranging from fresh rectal bleeding to melaena and guaiac-positive stool.⁷

Laboratory investigations are often of limited value. Most patients have an elevated INR, with a review of cases reporting an average INR of 11.6 in patients on anticoagulation.¹ Haemoglobin levels at presentation are often normal or borderline anaemic. In a number of case reports, a neutrophilic leucocytosis was often noted on the initial blood count. Similarly, in several case series, a drop in the average haemoglobin was noted on follow-up after 2 days.⁸

The diagnosis is usually not suspected clinically, with imaging being required to establish a diagnosis in most cases. The diagnostic investigation of choice is an abdominal CT scan, preferably without intravenous contrast as the latter may mask the presence of intramural haemorrhage.³ Several radiographic features have been described. These include thickening of the intestinal wall of usually >1 cm, the 'stack-of-coins' appearance due to thickened mucosal folds with sharp demarcations representing the valvulae conniventes, 'pseudo-kidney' sign, 'coiled spring' sign and a picket-fence appearance with oral contrast.¹ The intramural hyperdensity decreases after the first 10 days as the haematoma ages, after which some diagnostic difficulty can arise as it becomes challenging to differentiate from other infiltrative processes. Sonographic findings have also been described and include thickening of the bowel wall together with an echogenic submucosal layer, although these findings are non-specific and would merit further investigation.⁹ In a number of case series, most haematomas are single and usually involve the jejunum, followed by the ileum and duodenum. In contrast, traumatic haematomas most commonly involve the duodenum. Traumatic haematomas are often focal in view of their aetiology. Thus, their spontaneous counterparts tend to appear to involve longer segments of small bowel.

Owing to the rarity of this affliction, there is no standardised treatment. However, most case reports have shown a good outcome with conservative management. This includes the immediate suspension of oral anticoagulants and reversal of their effect with fresh frozen plasma and vitamin K. A regimen of nil by mouth and nasogastric drainage should be instituted in patients with obstructive symptoms. In patients requiring prolonged starvation, total parenteral nutrition may be required.¹⁰ Resolution of the haematomas, which in most cases is correlated to an improvement in clinical findings, occurs within days to weeks from onset.¹¹

Reported short-term outcome in patients with spontaneous intramural haematomas is good, with the exception of patients presenting with sepsis because of coexisting medical comorbidities. Late sequelae are rare, and include stenosis and recurrence of bleeding. From previous reports, it is considered safe to restart oral anticoagulation after the acute event as long as it is given within the therapeutic range. Exploratory laparotomy would be recommended in cases of diagnostic uncertainty, in active intraluminal haemorrhage, perforation or ischaemia.

Bowel resection is not required when small bowel haematomas are found at operation, in view of the excellent short-term prognosis and long-term prognosis.¹¹

Learning points

- ▶ Anticoagulation-induced small bowel haematomas are usually managed conservatively.
- ▶ Both short-term and long-term outcomes are good in the absence of any other concurrent conditions.
- ▶ Anticoagulation can often be safely restarted after resolution of the acute event.
- ▶ Bowel resection is not necessary if small bowel haematomas are found on surgical exploration for acute abdominal pain.

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Competing interests None.

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