Small bowel obstruction caused by intramural hemorrhage secondary to anticoagulant therapy

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Abstract

Intramural hemorrhage as a cause for small bowel obstruction is extremely rare. We presented an unusual case report of small bowel obstruction caused by intramural jejunal hemorrhage secondary to anticoagulant therapy. An 85-year-old male patient with atrial fibrillation on long-term warfarin presented with nausea and vomiting for 2 days, accompanied with no bowel movement since the onset. Physical exam was unremarkable except soft abdomen with distension but no tenderness, hyperactive bowel sounds and positive fecal occult blood test. Investigations showed anemia with hemoglobin/ hematocrit of 10 (g/dl) / 30%, prothrombin time with an International Normalized Ratio (INR) of 9.58. Abdominal x-ray showed air fluid levels suggestive of small bowel obstruction. Contrast-enhanced abdominal computerized tomography showed circumferential wall thickening, luminal narrowing and partial small bowel obstruction secondary to intramural jejunal hemorrhage. Patient recovered completely 48 hours after medical treatment (nothing per oral, intravenous fluids, nasal gastric tube, Vitamin K, frozen fresh plasma and packed red blood cell transfusion). Spontaneous intramural small-bowel hematoma is rare and occurs in patients who receive excessive anticoagulation with warfarin or who have some other risk factors for bleeding. Intramural hematoma most commonly involves the jejunum, followed by the ileum and the duodenum. The spectrum of presentation is wide, from abdominal pain, emesis to gastrointestinal tract hemorrhage. Abdominal CT is the key for diagnosis, with characteristics including circumferential wall thickening, intramural hyperdensity, luminal narrowing, and intestinal obstruction. Early diagnosis is crucial because most patients are treated nonoperatively with a good outcome. (Acta gastroenterol. belg., **2008**, 71, **342-344**).

Key words : intramural hemorrhage, anticoagulation therapy, abdominal CT.

Introduction

The most common causes for small bowel obstruction are postoperative intra-abdominal adhesions, hernias, and neoplasms. Intramural hemorrhage as a cause for small bowel obstruction is extremely rare. Meanwhile, spontaneous intramural hematoma is a rare complication of anticoagulant therapy (1,2). We presented an unusual case report of the combination of these rare situations : small bowel obstruction caused by intramural jejunal hemorrhage secondary to anticoagulant therapy.

Case report

An 85-year-old male patient presented with nausea and non-bloody, non-bile vomiting for 2 days duration, without abdominal pain, fever, chills or diarrhea. The patient had poor appetite and no bowel movement since the onset, but was able to pass gas. He had past medical history of coronary artery disease with coronary artery by-pass graft, colon cancer with partial colectomy, atrial fibrillation and chronic congestive heart failure. He was on long-term therapy of warfarin and metoprolol. Physical exam revealed stable vital signs, dry mucus membranes, soft abdomen with distension but no tenderness, hyperactive bowel sounds and positive fecal occult blood test. Investigations showed anemia with hemoglobin of 10 g/dl (N : 14.0-18.0 g/dl) and hematocrit of 30% (N : 42-54%), prothrombin time with an International Normalized Ratio (INR) of 9.58 (Therapeutic INR : 2.0 to 3.0, the patient did not come for monitoring INR for 3 months). Abdominal x-ray showed air fluid levels suggestive of small bowel obstruction (Fig. 1). Contrast-enhanced abdominal Computerized Tomography (CT) showed circumferential wall thickening, luminal narrowing and partial small bowel obstruction secondary to

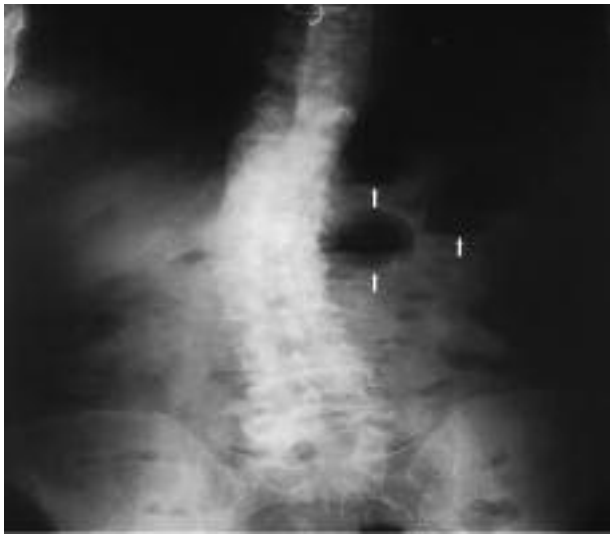

Fig. 1. — Abdominal X-ray showed air-fluid levels (arrow)

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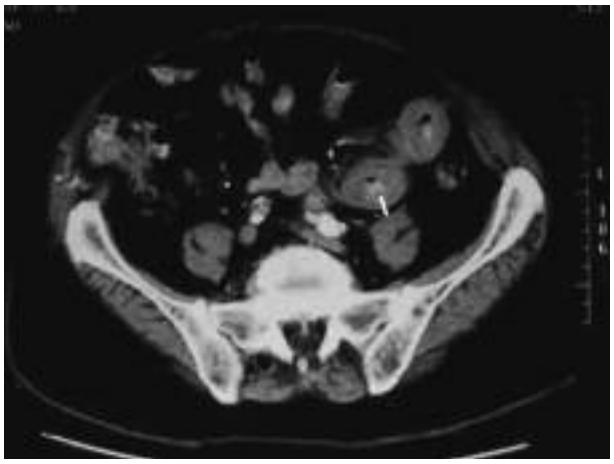

Fig. 2. — Contrast-enhanced abdominal Computerized Tomography (CT) showed intraluminal hyperdensity (arrow).

Fig. 3. — Contrast-enhanced abdominal Computerized Tomography (CT) showed circumferential wall thickening (stealth arrow), luminal narrowing (oval arrow).

intramural jejunal hemorrhage (Fig. 2-3). Patient was treated by nothing per oral, intravenous (IV) fluids, nasal gastric tube for decompression, Vitamin K, 2 units of frozen fresh plasma and 1 unit of packed red blood cell transfusion. Patient recovered completely 48 hours later with first bowel movement and INR of 2.29. Patient was discharged without symptoms 3 days after admission.

Discussion

Spontaneous intramural small-bowel hematoma is rare. It occurs in patients who receive excessive anticoagulation with warfarin or who have some other risk factor for bleeding. Despite intramural hematoma is exceedly rare cause for small bowel obstruction, small-bowel obstruction was a major presentation among the patients with intramural hematoma (3). Abbas *et al.* reported that spontaneous small-bowel hematomas most often were single lesions and most commonly involved the jejunum, followed by the ileum and the duodenum (3).

The spectrum of clinical presentation is wide, from different degree of abdominal pain, emesis to gastrointestinal tract hemorrhage. Abdominal CT evaluation improves the accuracy of diagnosis of intramural hematoma (1). CT characteristics include circumferential wall thickening, intramural hyperdensity, luminal narrowing, and intestinal obstruction. Abbas *et al.* recommended the use of IV contrast material because it was helpful in the visualization of many gastrointestinal tract disorders (i.e., ischemic or gangrenous gut, Crohn's disease, or malignancy) and did not hinder the ability of the radiologist to make the diagnosis of spontaneous intramural small-bowel hematoma (3). Early diagnosis is crucial because most patients are treated nonoperatively with a good outcome (3). Our patient recovered rapidly with medical management. As a result, the gold standard of a surgical diagnosis was absent.

Intramural hematoma is a rare complication of anticoagulation by warfarin, however, among the intramural haematoma, excessive anticoagulation by warfarin is the leading cause (4-17). Although it might be expected that excessive anticoagulation by heparin can also cause spontaneous intramural small-bowel hematoma, to our knowledge, there has been no case report describing it so far. The common location for hemorrhage is usually in the submucosal layer of the bowel and originates from a small vessel that produces slow bleeding (10,11).

In summary, as a result of a growing size of aging population requiring more chronic long-term anticoagulation treatment, the incidence of nontraumatic spontaneous intramural small-bowel hematoma is expected to increase. Therefore, prompt and early recognition of nontraumatic spontaneous intramural small-bowel hematoma by abdominal CT is crucial for improving prognosis and may prevent unnecessary exploratory surgery. Clinicians should keep in mind the possible spontaneous intramural small-bowel hematoma in patients presenting with abdominal pain or emesis who are undergoing anticoagulation therapy with abdominal X-ray of obstruction or CT findings of small-bowel wall thickening and obstruction. Meanwhile, close monitoring INR for patients receiving warfarin is very important to decrease side effect of bleeding due to its wide interaction with medications and food. In addition, it is critical to evaluate the indications for starting warfarin therapy by carefully weighing the benefits and risks of bleeding, especially in elderly patients. New anticoagulants such as Rivaroxaban© or Dabigatran© might be promising in high risk patients in decreasing the risk of excessive anticoagulation and side effects.

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