Spontaneous Intramural Small-Bowel Hematoma as a cause of Intestinal Obstruction

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Section: Abdominal imaging
Area of Interest: Abdomen
Procedure: Diagnostic procedure
Imaging Technique: CT
Special Focus: Obstruction / Occlusion
Case Type: Clinical Cases
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Patient: 63 years, male

Clinical History:

A 63-year-old male presents to the emergency room with nausea and vomiting, which had lasted for the past four days. He refers brown-coloured vomiting immediately after oral intake. The patient was under chronic anticoagulant therapy (acenocumarol), recently started NSAIDs and follows no hemostasis control. Haemoglobin levels dropped 3 points within 20 days (from 10.6 to 7.3).

Imaging Findings:

Non-enhanced CT shows a circumferential and hyperdense thickening (60 HU) of a proximal segment of jejunum with associated fat stranding. Furthermore, pelvic fluid showed an obvious layer of high attenuation (hematocrit effect, displaying 60 HU). A remarkable gastric distension with abundant liquid-like content was also noted.

The CT findings were therefore compatible with a narrowing of the intestinal lumen with retrograde distension. In the setting of the patient's anticoagulant state and based on the imaging findings, a spontaneous intramural intestinal hematoma was diagnosed and a recommendation to clinically evaluate for peritonism and mechanical occlusion was given. The findings of haemorrhagic ascites were attributed to leakage of blood from an an engorged, thickened and inflamed bowel wall with submucosal bleeding extending into all layers.

After reevaluation the referring physicians concluded the patient had an intestinal obstruction and eventually admitted its cause to be the CT scan-diagnosed spontaneous intramural intestinal hematoma.

Discussion:

Spontaneous intestinal intramural hematoma represents a rare complication under anticoagulant therapy. Its incidence is higher in males and the average age at presentation is 57.6 years. Over-anticoagulation with warfarin represents its most common cause and the small bowel is affected in up to 85% of cases.

The spectrum of manifestations is broad and varies from a mild vague abdominal pain to intestinal obstruction and an acute abdomen. Nausea and vomiting are present in up to half of the cases and are related to high intestinal obstruction involving the duodenum and proximal jejunum. The average duration of anticoagulation therapy is 25.4 months on average [1].

CT plays a critical role in the diagnosis. Some authors advocate that noncontrast CT should be performed before
oral and intravenous contrast medium injection as contrast-enhanced CT alone may disguise the presence of intramural bleeding. CT most characteristic features include circumferential wall thickening, intramural hyperdensity which is considered by some authors pathognomonic in the right context [2], luminal narrowing and intestinal obstruction [3]. The involved bowel segments are usually longer in spontaneous hematomas than in traumatic hematomas with an average length of 23 cm. Wall thickening may however also be found in other pathologies such as malignancy and inflammatory and ischemic bowel disease. Nevertheless, in contrast to the latter, complete resolution of the CT findings will usually occur within 2 months after the onset of symptoms. In fact, this diagnosis is confirmed by the spontaneous normalization of the findings on a follow-up CT [1]. Haemorrhagic ascites might be present and is related to leakage of blood from an engorged, thickened, and inflamed bowel wall with submucosal bleeding extending into all layers [2]. MRI findings of small bowel hematoma comprise a well-defined concentric ring of high signal intensity (ring sign) in the subacute bleeding [4].

This entity should be searched for in any patient with abdominal pain who is receiving anticoagulant therapy, especially if the INR is excessively prolonged [5]. The triad of warfarin toxicity, circumferential thickening of the small bowel, and intestinal obstruction is very suggestive. Its recognition is of utmost importance in order to avoid an unnecessary surgery, since the outcome is usually excellent after conservative treatment.

In conclusion, although nontraumatic spontaneous intramural small-bowel hematoma is rare, its incidence is rising as a result of a growing number of patients with hematologic malignancies receiving chemotherapy and an aging population requiring chronic long-term anticoagulation treatment [1].

**Differential Diagnosis List:** Spontaneous Intramural Small-Bowel Hematoma as a cause of Intestinal Obstruction, Neoplastic Small-Bowel Disease, Inflammatory Small-Bowel Bowel Disease, Ischemic Small-Bowel Disease

**Final Diagnosis:** Spontaneous Intramural Small-Bowel Hematoma as a cause of Intestinal Obstruction

**References:**


Description: Remarkable gastric distension.

Careful evaluation also allows recognition of the circumferential thickening of the proximal segment of jejunum. **Origin:** Radiology Department, Hospital del Mar, Barcelona
Figure 2

Description: CT shows a circumferential thickening of a proximal segment of jejunum with associated fat stranding. Origin: Radiology Deparment, Hospital del Mar, Barcelona
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Figure 3

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Figure 4

Description: Remarkable gastric distension with abundant liquid-like content. Origin: Radiology Department, Hospital del Mar
Description: Non-enhanced CT shows a circumferential and hyperdense thickening (60 HU) of a proximal segment of jejunum with associated fat stranding. Origin: Radiology Department, Hospital del Mar
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