CASE REPORT

Case Report: Large ileal intramural hematoma presenting as an intestinal obstruction in a patient on Warfarin with incidental breast cancer [version 1; peer review: 1 approved]

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Abstract

Intramural hematoma of the gastrointestinal (GI) tract, which can present as abdominal pain or obstruction, can be a rare complication of oral anticoagulants, in particular Warfarin. In this case report, we describe an 81-year-old female patient presenting with abdominal pain, nausea, and vomiting with a previous history of rectorrhagia. The patient was receiving Warfarin therapy due to cardiac valve replacement for the past 8 years. Laboratory workup revealed elevated INR and anemia. Diagnosis of ileal intramural hematoma was based on ultrasound and CT scan findings. The patient was treated by conservative approaches including administration of fresh frozen plasma, cessation of oral intake, and fluid resuscitation. In CT images, a mass on the left breast and lymphadenopathy on the left axilla were also noticed. Given that most GI intramural hematomas caused by over-anticoagulation are treated non-surgically, considering a patient's drug history, especially in older patients with abdominal pain and obstruction symptoms, is of particular importance.

Keywords

Gastrointestinal Tract, hematoma, anticoagulant therapy, warfarin.

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Competing interests: No competing interests were disclosed.

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Introduction
Abdominal pain is a common complaint in patients referred to hospital emergency departments and varies from mild and self-limiting to severe and life-threatening conditions\(^1\). Depending on the location of the pain, symptoms, physical examination and medical history, a differential diagnosis is provided\(^1\). Since mortality and the rate of surgery secondary to abdominal pain is higher in elderly patients, prompt diagnosis of the causative agent is of particular importance\(^3\). Non-specific causes, gastroenteritis, irritable bowel syndrome, urologic disorders, and gastroenteritis are among the common etiologies for abdominal pain\(^4\). An uncommon reason for abdominal pain and bowel obstruction is intestinal intramural hematoma following anticoagulation therapy\(^5,6\). Warfarin, a vitamin K antagonist, is widely used to prevent thrombosis formation due to mechanical heart valves, atrial fibrillation, pulmonary embolism and deep venous thrombosis\(^7\). The occurrence of intestinal intramural hematoma secondary to anticoagulant therapy is an uncommon condition, which affects 1/2500 patients receiving Warfarin\(^8\). The small intestine is the common site affected by spontaneous intramural hematoma, and intramural hematoma of the colon and rectum are rare\(^1\). This complication is mostly treated by non-surgical approaches.

This article reports a case of a relatively large ileum intramural hematoma developed following Warfarin use and accidental detection of breast malignancy during a CT scan.

Case presentation
An 81-year-old woman was admitted to the Mazandaran Heart Center, Sari, Iran in February, 2018 with a 4-day history of nausea, vomiting, and abdominal pain. She had been taking Warfarin (5 mg orally once a day) and aspirin (80 mg/day) for 8 years after aortic valve replacement without close monitoring and had a history of rectorrhagia caused by Warfarin toxicity one year ago. Colicky pain, an increase in bowel sounds and periumbilical tenderness without distension was determined by physical examination. The primary laboratory findings revealed anemia (Hb: 9.8 g/dl; normal value: 11.5–13.5 g/dl) and elevated INR (6; therapeutic range: 2–3.5), liver function and biochemistry tests were within normal values. Normal left ventricular systolic function, LVEF of 55–60%, septal hypertrophy, normal functioning prosthetic valve, and dilatation of the ascending aorta were reported by echocardiography.

During an abdominal and pelvic ultrasound, long mucosal thickening possibly through the ascending and sigmoid colon was observed, suggestive of intramural hematoma. The patient was placed on nil per os, received supportive care and two units of fresh frozen plasma. Due to normal cardiac evaluation and partial relief of symptoms on the second day of admission, the patient was referred to surgical consultation with the possible diagnosis of descending colon and sigmoid intramural hematoma. For re-administration of anticoagulants, heparin infusion (1000 units/hour) began with precise monitoring of prothrombin time.

On the fourth day, CT scan was performed with intravenous and oral contrast (Figure 1) and intramural hematoma of ileum was diagnosed. During the CT, a radiologist noticed a mass on the left breast and a lymph node with a malignant feature on the left axilla. With the improvement of abdominal pain and

![Figure 1](https://example.com/figure1.png)
vomiting (on the fourth day), oral feeding was resumed. After mammography and breast biopsy, pathological examination revealed invasive ductal cell carcinoma with lymphatic and perineural invasion. According to the immunohistochemistry staining, tumor cells were strongly ER positive, PR negative, 15% Ki67 positive and equivocal for HER2. The patient was referred to the oncology-hematology department to receive appropriate treatment.

The patient was discharged 10 days after admission and Warfarin therapy (5 mg/d) was resumed. The patient was visited 2 weeks later with good general health assessment. Letrozole (2.5 mg/day) was started because the patient refused chemotherapy and radiotherapy.

Discussion

The most significant reason for the intestinal intramural hematoma is trauma, while non-traumatic or spontaneous causes include anticoagulation therapy, malignancies, and blood disorders, which are considered to be rare[14,15,16]. The intestinal sites involved in the intramural hematoma in order of frequency include jejunum, duodenum, and ileum[17]. The intramural hematoma can affect the esophagus, gastric and colon, but these cases are less prevalent. This complication is mostly associated with Warfarin and is more common in male subjects[18,19,20]; a patient’s chief complaints are abdominal pain, nausea, vomiting, and absence of bowel movements or flatulence[21,22]. Hyperechoic bowel wall thickening or free fluid may be noted in ultrasound findings, nevertheless, as a non-unspecific test, normal ultrasound results cannot rule out the possible diagnosis of gastrointestinal intramural hematoma. The diagnostic key test is a CT scan, but there is no agreement in the literature concerning the use of contrast materials, as it may obscure intramural hyper-density and hemorrhage, and also increase the risk of exposure[6,17]. In the review of fourteen patients by Yoldaş et al., nine patients were treated non-surgically, with eight of them were on Warfarin therapy for heart disorders. Increased INR was also observed in anticoagulant receiving patients[20]. In addition to impaired coagulation tests, increased WBC count and anemia may also present[15,16]. For early diagnosis of this complication, taking a detailed medical history of anticoagulation use, especially in older patients with abdominal pain, is required. Treatment usually is conservative and includes cessation of oral anticoagulation, serum therapy, and correction of coagulation indices by vitamin K and blood products[6,18,19,20]. Accurate recognition of this complication leads to prevention of unnecessary surgical procedures and the risk of bleeding progression. There are also evidence that Warfarin may act as an anticancer agent; Warfarin was shown to lower the incidence of organ specific cancers including lung, prostate, and breast[11,22]. Therefore, the development of invasive breast cancer in the present case, despite the long-term use of Warfarin, is interesting.

Finally, the question arises of which anticoagulant can be used as an alternative to Warfarin in patients with frequent life threatening hemorrhagic events, which requires no regular monitoring but has an acceptable efficacy.

Consent

Written informed consent was obtained from patient during admission and follow up for the publication of the patient’s clinical information and accompanying images.

Data availability

All data underlying the results are available as part of the article and no additional source data are required.

Competing interests

No competing interests were disclosed.

Grant information

The author(s) declared that no grants were involved in supporting this work.

References

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- The case is well presented, and the clinical details are well written and meticulously enumerated. The case is relevant for practice and will benefit clinicians.

- The only comment I would have is to change the word "ileum" on p.2 (2nd paragraph) to "ileal" and the word "rectorrhagia" to "hematochezia" in order to conform to the more commonly used medical terminology.

- This paper is an excellent case report that presents useful information for the clinician. I would recommend acceptance if the two semantic changes were made.

Is the background of the case's history and progression described in sufficient detail?  
Yes

Are enough details provided of any physical examination and diagnostic tests, treatment given and outcomes?  
Yes

Is sufficient discussion included of the importance of the findings and their relevance to future understanding of disease processes, diagnosis or treatment?  
Yes

Is the case presented with sufficient detail to be useful for other practitioners?  
Yes

**Competing Interests:** No competing interests were disclosed.

**Reviewer Expertise:** Functional gastrointestinal disorders
I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Author Response 14 Sep 2019

Maryam Alizadeh Forutan, Mazandaran University of Medical Science, Sari, Iran

Greetings and regards. Thanks for bothering to read this case report and for taking the time to review the article. I will consider the issues raised.

Competing Interests: There isn't any competing interest.

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