

## Recurrent Spontaneous Jejunal Hematomas Resulting in Bowel Obstruction

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### ABSTRACT

Spontaneous intramural small bowel hematomas are rare complications of anticoagulation therapy. We present a case of a 71-year-old male presenting to hospital twice with supratherapeutic international normalized ratio (INR) and bowel obstruction, resulting in the diagnosis of recurrent intramural small bowel hematoma. This case illustrates the importance of stringent INR monitoring in those anticoagulated with warfarin and also demonstrates the importance of remaining clinically suspicious for this complication in patients who present with abdominal pain or intestinal obstruction symptoms in the setting of a supratherapeutic INR.

**Keywords:** Small bowel; Anticoagulation; Obstruction; Hematoma; Warfarin

### INTRODUCTION

Spontaneous small intestinal intramural hematomas are a rare complication of anticoagulation therapy, with the jejunum being the commonest affected region of the bowel. The estimated incidence of intramural hematomas amongst anticoagulated patients is one in 2500 patients per year [1]. The incidence is 50 times higher in those anticoagulated with warfarin as compared to heparin [1,2]. A retrospective study conducted by Abbas et al evaluated 13 patients with spontaneous intramural small intestinal small bowel hematomas over the course of 17 years and found that eight of these patients had a supratherapeutic international normalized ratio (INR) on warfarin, with a mean INR of 11.6. The remaining five patients had bleeding predilections including hemophilia, chemotherapy-induced liver failure, known liver cirrhosis, idiopathic thrombocytopenia purpura, and systemic lupus vasculitis. None of these patients had recurrence of their small bowel hematoma at median follow up time of 35 months [3].

There are few extant reports in the literature of spontaneous small bowel hematoma causing bowel obstruction. In this report, we present a case of recurrent intramural small bowel hematoma secondary to supratherapeutic INR.

### CASE REPORT

A 71-year-old male initially presented to a tertiary hospital emergency department with upper quadrant abdominal pain, nausea, and non-bloody vomiting of two days duration. The patient had a history of paroxysmal non-valvular atrial fibrillation and ischemic cardiomyopathy for which he had been taking warfarin and low-dose acetylsalicylic acid (ASA). Other relevant medical history was significant for diabetes and advanced chronic kidney disease. Initial blood pressure was 104/67 mmHg and heart rate was 69 beats per minute. His abdomen was soft and not distended. Bowel sounds were present in all four quadrants. There were superficial hematomas visible at his insulin injection sites. The rest of the physical examination including cardiac and respiratory examinations was unremarkable.

Initial investigations revealed hemoglobin of 128 g/L, platelet count of  $312 \times 10^9/L$ , INR of 8.2 and prothrombin time (PT) of 96.5 s. Review of serial INRs performed as outpatient revealed values ranging from one to six and warfarin was titrated to achieve a target INR of two to three. An uninfused CT scan of the abdomen revealed hyper dense wall thickening of the jejunum measuring up to 1.6 cm (Figure 1). The involved segment of the jejunum was 15 cm in length with moderate amount of fat stranding. There was proximal dilatation of the small bowel consistent with a bowel obstruction.

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**Figure 1:** Intramural small bowel hematoma marked by an arrow on non-contrast abdominal CT scan with thickened segment of the jejunum measured up to 1.6 cm. The involved segment of the jejunum measured 15 cm in length.

In the emergency department, the patient received the diagnosis of an intramural small bowel hematoma. Intravenous vitamin K and 4-factor prothrombin complex concentrate was administered to reverse the patient’s coagulopathy on warfarin. Surgery was consulted for managing the bowel obstruction and suggested non-operative management. Warfarin was held and the patient was admitted to the internal medicine ward for conservative management. The patient’s symptoms clinically improved and he was soon able to tolerate oral intake, and hence the patient was discharged in stable condition one week later. Follow-up abdominal CTscan two weeks post-discharge revealed resolution of the intramural jejunal hematoma (Figure 2). Warfarin was hence resumed and the initial INR after resumption of anticoagulation was 2.1.

Nineteen weeks later, the patient returned to the emergency department with new-onset acute abdominal pain and emesis. He was found to have recurrence of his intramural jejunal hematoma and small bowel obstruction on non-contrast abdominal CT, this time involving a 20 cm segment of the jejunum (Figure 3). INR was supratherapeutic with a value greater than 13, he was again treated with vitamin K and 4-factor prothrombin complex concentrate. Conservative management including cessation of warfarin and aspirin was pursued. Following clinical resolution, he was discharged with arrangements for follow up abdominal CT three weeks post-discharge.

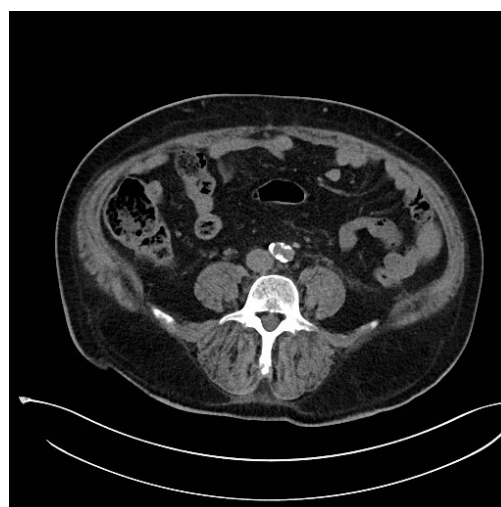
This showed complete resolution of the jejunal hematoma (Figure 4). The patient was clinically well on discharge.



**Figure 2:** Resolved Small Bowel Hematoma in Jejunum on Non Contrast Abdominal CTScan.



**Figure 3:** Recurrent small bowel intramural hematoma marked by an arrow on non-contrast abdominal CT scan. The involved jejunum measures 20 cm in length.



**Figure 4:** Resolution of second small bowel hematoma on non-contrast CT scan of the abdomen.

## DISCUSSION

This case emphasizes the importance of considering intramural small bowel hematoma in patients with supratherapeutic INR presenting with abdominal pain or bowel obstruction symptoms. In both presentations, hematoma formation was related to supratherapeutic INR.

Our patient was particularly challenging to anticoagulate because he was on warfarin with an INR that seldom at target. Aspirin and renal dysfunction also influenced his bleeding predilection. Furthermore, chronic kidney disease limited our options for anticoagulation. Case reports describe spontaneous intramural hematomas of the small bowel in those anticoagulated with warfarin [1], and low molecular weight heparin [4]. To our knowledge there are no cases of spontaneous small bowel hematomas secondary to that anti coagulated with the direct oral anticoagulants.

Clinical presentation of these patients with intramural small bowel hematomas tends to vary. In patients with intramural small bowel hematomas related to supratherapeutic INRs, a triad of symptoms has been proposed consisting of abdominal pain, bowel obstruction, and bleeding complications not limited to the gastrointestinal tract [1]. If physical examination is concerning for peritonitis, hematoma complications such as necrosis, perforation or hemoperitoneum can be suspected [4]. Gastrointestinal bleeding can occur if there is rupture of the hematoma [5]. The diagnostic criteria for small bowel hematomas on CT scans include findings such as circumferential bowel wall thickening, luminal narrowing and intestinal tract obstruction [3]. Treatment of spontaneous intramural hematoma secondary to a supratherapeutic INR in the absence of the acute abdomen involves INR reversal and supportive measures, such as nasogastric decompression and discontinuation of oral intake can be employed. Resolution of hematoma can be assessed with follow up CT scan 3 weeks' time [5].

In uncomplicated cases, resolution of symptoms is expected within two months of presentation [6]. After resolution of the hematoma on imaging, it is likely safe to resume anticoagulation with warfarin, as long as INR is within therapeutic range [5,6]. Unfortunately, the therapeutic index of warfarin is narrow, and

many factors including dietary changes, poor compliance, undisclosed drug use, and alcohol consumption lead to INR fluctuations [7]. One study revealed that in those who tracked their INR every 2-4 weeks, INR was therapeutic 68.9% of the time [8].

## CONCLUSION

This case emphasizes the importance of stringent INR control in those anticoagulated with warfarin. It also highlights a rare complication of anticoagulation therapy, and the importance of remaining suspicious of the possibility of spontaneous small bowel hematoma in those anticoagulated patients presenting with obstruction and/or abdominal pain.

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