Colon Obstruction due to Anticoagulant Induced Intramural Hematoma

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Key Words
Anticoagulant; Intramural hematoma; Colon obstruction

Case Report

A 67-year-old male presented at emergency department (ED) due to painful abdominal distension and vomiting for two days. He had suffered progressive abdominal distension over the preceding one-week period and no stool or flatus passage for three days. He had been taking the anticoagulant (Coumadin® 5 mg perday) to manage an earlier cerebrovascular accident for a period of two years, the

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last value of INR checked one month ago was 1.13. He had commenced additional herbal therapy with compound drugs for a short period of time. At the ED, his vital signs were stable. His abdomen featured distension with a ball-shaped appearance, and was moderately tender in the right lower quadrant. His bowel sounds are hyperactive with occasional high-pitched tones. His leukocyte count was 11,600/µL. His prothrombin time (PT) and activated partial thromboplastin time (APTT) were rather prolonged, ie both in excess of 100 seconds. A plain abdominal roentgenogram indicated distended bowel loops above the distal ileum, compatible with clinical ileus. Abdominal computed topography (CT) scan revealed the wall thickening of the cecum without mesocolic infiltration (Fig. 1). Intestinal obstruction was inferred but no definite pathophysiological etiology was able to be ascribed to his condition.

Initially, he was treated conservatively, this comprising bowel rest, nasogastric-tube insertion, intravenous fluid hydration, and prophylactic antibiotic therapy. Anticoagulant therapy was discontinued, and a fresh frozen plasma transfusion augmented with Vitamin-K administration was given. A barium-enema (BaE) study was performed on the next day of hospitalization, indicated blockage of barium reflux to the ileocecal area, with a rather irregular surface over the ascending colon and cecum (Fig. 2). His PT and APTT returned to within the normal range three days later. Unfortunately, the patient exhibited a more-aggravated clinical course, fever flared up and more-obvious peritonitis than first presentation presented with prolonged ileus. Because of his deteriorating condition and indefinite diagnosis, exploratory laparotomy was performed on the sixth day of hospitalization, we noted an eight-cm long lesion consisting of an annular intramural hematoma at the cecum and the proximal ascending colon (Fig. 3) and being associated with a

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**Fig. 1.** Abdominal CT revealed a general thickening of the wall of the proximal ascending colon, cecum and ileocecal valve with distended small bowels.

**Fig. 2.** BaE revealed blockage of barium reflux to the ileocecal area, with a rather irregular surface over the length of the proximal ascending colon and cecum.

**Fig. 3.** Resected specimen: the lumen of colon was opened and intact mucosa with annular submucosal hematoma were revealed.
massive hemoperitoneum (Fig. 4). At this time, we practiced a right hemicolectomy with an ileo-transverse-colostomy. The pathological diagnosis of the resected specimen confirmed intramural hematoma of the bowel with intact overlying mucosa and serosa. The patient demonstrated an uneventful postoperative recovery and was discharged 17 days subsequent to surgery.

**Discussion**

Various etiologies associated with intramural hematoma in the abdomen have been described previously, including blunt abdominal trauma, anticoagulant therapy, blood dyscrasias, Henoch-Schönlein purpura, surgical trauma, peritoneal dialysis, vascular malformation, and iatrogenic causation.1,2

Both the duodenum and the small intestine are common alimentary-tract locations for AIH.1 As best we are aware, both the colon3-5 and rectum2 constitute rarely as sites featuring AIH.

Successfully treating patients suffering from AIH typically warrants a cessation of anticoagulants in the first instance, and to attempt to correct the patient’s coagulation parameters by way of the administration of fresh-frozen plasma together with vitamin-K.5

Precise diagnosis of AIH before exploratory laparotomy is often quite difficult and requires a high index of clinical suspicion.5 A BaE has been a commonly sought diagnostic tool for alimentary-tract investigations, it typically resulting in two principal findings for intramural hematoma: (1) the “picket-fence” sign and (2) the “coiled-spring” sign.1 For our patient, BaE investigation did not clearly disclose these signs, although we acknowledge that these signs are not necessarily specific only to cases of intramural hematoma.1 Abdominal CT appears to be a beneficial imagery technique and typically revealing two common intramural hematoma-associated signs, namely: the “coiled-spring” sign and the “pseudo-kidney” sign;5,6 these signs are also not specific only to cases of intramural hematoma,5,6 and were not clearly seen in the abdominal CT image of our patient.

Most patients suffering from AIH would appear to feature abnormal coagulatory function,1 however, AIH may occur amongst patients featuring a prothrombin-time value within the therapeutic range,1 Further, the specific duration of preceding anticoagulant therapy does not appear to play any role as regards causing AIH.1,7,8 Indeed, the identity of that specific factor which may influence the prothrombin time for a patient who features a long-term regular anticoagulant therapy would appear to be quite elusive to clinicians. Certainly, changes in medication (pattern, dosage, and interval of medicaments) and/or diet may affect serum-warfarin or vitamin-K levels. The range of medication that may prolong a patient’s prothrombin time for patients receiving anticoagulant therapy includes anabolic steroids, cimetidine, anti-inflammatory drugs, and antibiotics. However, our patient denied any change in his medication regimen, diet, alcohol consumption, or other lifestyle, apart from he choosing to commence a herbal-therapy recently. From a review of the relevant literatures, sufficient evidence exists to support the notion that a wide range of herbals could interact with the warfarin.9,10 Our patient had taken some compound herbals over a short period of time before developing his symptoms. It may be that the interaction between the herbal therapy and the warfarin consumption may

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**Fig. 4.** Intraoperative findings, include distended small bowels, hemoperitoneum, hematoma of bowel wall over ileocecal valve to proximal ascending colon.
have played a role in the development of his AIH. From such an outcome, clinicians would keep in mind that any use of alternative therapies coinciding with ongoing anticoagulants therapy should be questioned for patients featuring dysfunctional coagulation, particularly the use of herbals.

Conservative treatment is advised to be the optimal therapy of the AIH in the first instance. Furthermore, these authors mostly also suggest that surgical treatment should be preserved for those patients who has a doubtful diagnosis and/or who exhibit a deteriorating condition and/or unrelenting intestinal obstruction. If AIH is confirmed during laparotomy, more conservative procedure for the obstruction, like diversion stoma, may be an another choice.

References

病例報告

抗凝血劑引起腸壁內血腫導致大腸阻塞

靳志堅 1,3  業建裕 2  郭益宏 1  黃文詩 1,3  葉重宏 1  王正儀 1

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使用抗凝血劑最常見的併發症是出血，而抗凝血劑引起腸壁內血腫導致大腸阻塞的情形卻是相當少見的副作用。我們在此報告一個由腸壁血腫所導致大腸阻塞的病例，此病例為長期使用抗凝血劑，並在發病前使用過一段時間的複方中藥，到院時的凝血功能明顯異常，我們在此闡述其臨床的表現、影像檢查結果、治療過程、病因病理探討及相關的文獻回顧。

關鍵詞  抗凝血劑、腸壁內血腫、大腸阻塞。