Intestinal intramural hematoma: A rare complication of Anticoagulation Therapy

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ABSTRACT

Objective: Anticoagulant therapy is commonly used in the treatment of cardiac and thromboembolic diseases, with bleeding being the most common side effect, which increases in likelihood with prolonged usage. Intestinal intramural hematoma, although rare, is a potential complication of anticoagulant therapy.

Case: Herein, we present the case of a 49-year-old male patient who presented to our outpatient general surgery clinic with complaints of nausea, vomiting, and abdominal pain. Upon examination, electrocardiography (ECG) revealed sinus rhythm without any ischemic changes, and echocardiography findings were within normal limits. The patient reported the use of warfarin, and his International Normalized Ratio (INR) was found to be 14.7 (normal range: 0.8-1.1). A 10 mg (1 ampoule) intravenous (IV) infusion of vitamin K was administered, and the warfarin dosage was adjusted accordingly. Subsequent follow-up assessments showed normalization of the INR levels.

Conclusion: Intestinal intramural hematoma is an exceedingly rare condition that necessitates prompt diagnosis and intervention, as delayed recognition can lead to life-threatening complications. Clinicians should maintain a high index of suspicion for intestinal obstruction secondary to anticoagulant therapy in patients presenting to the emergency department with symptoms such as abdominal pain, nausea, and vomiting.

Keywords: Intestinal intramural hematoma, Anticoagulation therapy, Warfarin, Computed Tomography

INTRODUCTION

Anticoagulant therapy is commonly employed in the management of various medical conditions, including cardiac ailments, thromboembolic disorders, blood clotting disorders, and myocardial infarction. While anticoagulants effectively prevent blood clot formation, their use is associated with an increased risk of bleeding in different anatomical sites. Among the rare complications of anticoagulant therapy is intestinal intramural hematoma (IMH) (1-5), characterized by the accumulation of blood within the layers of the intestinal wall.

Anticoagulant medications are indispensable in preventing thrombotic events, yet they can predispose individuals to bleeding complications. Disruption or injury to blood vessels within the intestinal wall can result in the accumulation of blood, forming a hematoma. This can manifest clinically as abdominal pain, distension, and in severe cases, intestinal obstruction.

Patients receiving anticoagulant therapy are particularly susceptible to developing intestinal intramural hematoma due to their heightened bleeding tendency. Although the precise pathophysiology of this condition remains incompletely understood, it is believed to involve the anticoagulant-mediated disruption of blood vessels within the intestinal wall. Contributing factors include the fragility of blood vessels, impaired coagulation mechanisms, and weakening of the intestinal wall. It is noteworthy that while anticoagulant therapy represents a significant risk factor, other factors such as trauma, underlying vascular disorders, or concurrent medical conditions affecting blood vessels can also contribute to the development of intestinal intramural hematoma.
Diagnosis typically relies on imaging modalities such as Computed Tomography (CT), which enables visualization of the hematoma and assessment of its extent. Management strategies often entail discontinuation or adjustment of anticoagulant therapy, coupled with supportive measures. In severe cases, surgical intervention may be warranted to address the hematoma and any resultant tissue damage.

CASE

A 49-year-old male patient presented to the outpatient general surgery clinic with complaints of nausea, vomiting, abdominal tenderness, and chest pain. He reported experiencing nausea and vomiting shortly after consuming microwaved eggs, along with abdominal pain. His medical history revealed a prior history of bypass surgery and placement of stents, necessitating the use of anticoagulant medications.

Upon physical examination, the patient's blood pressure was measured at 160/90 mmHg, with a pulse rate of 82 beats per minute, oxygen saturation of 97%, body temperature of 36.2 degrees Celsius, and respiratory rate of 16 breaths per minute. The patient was conscious, alert, and cooperative, with clear abdominal findings and no signs of rebound tenderness, guarding, or lymphadenopathy.

Laboratory investigations revealed normal levels of Troponin 1, but elevated C-reactive protein (CRP) levels at 3.5 mg/dL (normal range: 0-0.5 mg/dL). Activated partial thromboplastin time (aPTT) measurements were notably prolonged, with values of 114.6 seconds and 132.8 seconds obtained at two separate intervals, well above the normal range of 21-40 seconds. The international normalized ratio (INR) was markedly elevated at 14.7 (normal range: 0.8-1.1), prompting immediate administration of 10 mg of intravenous vitamin K (konakion). Routine biochemical parameters were within normal limits.

A contrast-enhanced abdominal computed tomography (CT) scan revealed the presence of an intramural hematoma at the level of the jejunum. Extensive concentric wall thickening and diffuse narrowing of the lumen spanning approximately 11 cm in the third part of the duodenum and jejunum junction were observed. Additionally, heterogeneous enhancement and linear hypodense striations were noted in the adjacent mesenteric fat planes.

Given the patient's history of anticoagulant therapy, the radiographic findings were suggestive of an intramural hematoma. Differential considerations included inflammatory bowel diseases and neoplastic processes; however, as the patient's symptoms subsided, surgical intervention was deemed unnecessary.

The patient's warfarin dosage was adjusted, and he was closely monitored. During follow-up one week later, the INR level had normalized. The patient was discharged with instructions to continue warfarin therapy with daily dosing and weekly INR monitoring.

Figure 1: Coronal abdominal CT section with iv-oral contrast; massive area in the intestinal lumen causing contrast filling defect.
DISCUSSION

Due to its rarity, there is limited literature available on this specific complication of anticoagulant therapy, making accurate diagnosis challenging. Intestinal intramural hematoma can have multiple etiologies, including abdominal trauma and anticoagulant therapy. However, the most common non-traumatic etiology is anticoagulant therapy. Anticoagulants highlight the delicate balance between preventing clotting and increasing the risk of bleeding. The most frequent side effect of anticoagulant therapy is usually hemorrhage. When blood vessels within the intestinal wall are disrupted or damaged, blood can accumulate in the layers of the intestinal wall, leading to the formation of a hematoma. While blood accumulation in the layers of the intestinal wall is more common, intestinal intramural hematoma can also occur in very rare cases. In cases presenting to the emergency department with abdominal pain, it is important to inquire about anticoagulant history and consider intestinal intramural hematoma in the differential diagnosis when evaluating CT scans.

Depending on its size and location, it can cause internal bleeding, leading to anemia or other signs of blood loss. An intramural hematoma should be considered for patients with abdominal pain, anticoagulant therapy usage and increased INR levels (4). Our case was receiving anticoagulant therapy due to cardiovascular events. The high INR value, which is accepted as the etiological factor of our case, was found to be 14.7 when our patient applied to the emergency department.

Intestinal intramural hemorrhage can be seen everywhere in the gastrointestinal tract and according to a study duodenum is the most common place (3,5). According to another study, the jejunum was identified as the most common site (6-8).

In our case, it was found throughout the approximately 11 cm segment in the 3rd part of the duodenum and the jejunum junction.

Most frequently encountered symptoms of intestinal intramural hematoma are abdominal pain or tenderness with nausea and vomiting (4,8). There also may be symptoms like rebound tenderness, abdominal guarding, hematochezia (1,5). Symptoms might mimic other gastrointestinal conditions. The intensity of symptoms changes depending on the conditions (1). In severe cases, a large hematoma can lead to intestinal obstruction. This occurs when the hematoma compresses the intestinal lumen, preventing the normal passage of food and waste. Rarely, if the hematoma causes significant pressure on the intestinal wall, it can lead to perforation (a hole in the intestine). In these situations, abdominal symptoms might become unbearable. Our case was presented to our outpatient general surgery clinic with nausea, vomiting and abdominal pain after consumption of the egg that had cooked in the microwave.

A blood sample from the patient receiving anticoagulant therapy should be taken and examined. Prothrombin time (PT), activated partial thromboplastin time (aPTT), INR and Hemoglobin (Hb) levels should be checked for these patients every week. In our case, prothrombin time (PT), activated partial thromboplastin time (aPTT), and INR were very high, and the patient was treated immediately with vitamin K. Hemoglobin levels were within the normal limits.

Imaging techniques are used to monitor the hematoma's size and extent and assess the patient's progress. The most frequently used imaging technique is CT (1,4). CT has a very high sensitivity (1,8).
Generally, luminal narrowing and bowel obstruction are seen on CT scan wall thickening (1,2,4,5). In our case, CT was made and concentric wall thickening and diffuse concentric narrowing in the lumen were found throughout the approximately 11 cm segment in the 3rd part of the duodenum and the jejunum junction. Ultrasound (US) may be used but not as much as CT (4). Ultrasound can be used as an adjuvant method. The most currently used method to diagnose is abdominal CT (9). Laparotomy can be used to check the extent of the hematoma. Treatment typically involves CT scans, which can accurately assess the extent of the hematoma. Treatment typically involves discontinuation or adjustment of anticoagulant therapy, along with supportive measures such as vitamin K administration. In severe cases, surgical intervention may be necessary. Clinicians should maintain a high index of suspicion for IMH in patients presenting with abdominal symptoms and a history of anticoagulant use, appropriate diagnostic and therapeutic interventions should be promptly initiated.

CONCLUSION

Intestinal intramural hematoma (IMH) represents a rare but potentially serious complication of anticoagulant therapy. While anticoagulants play a crucial role in preventing thrombotic events, their use is associated with an increased risk of bleeding, including IMH. Prompt recognition and management of this condition are essential to prevent potentially life-threatening complications such as intestinal obstruction or perforation. Diagnosis often relies on imaging modalities such as CT scans, which can accurately assess the extent of the hematoma. Treatment typically involves discontinuation or adjustment of anticoagulant therapy, along with supportive measures such as vitamin K administration. In severe cases, surgical intervention may be necessary. Clinicians should maintain a high index of suspicion for IMH in patients presenting with abdominal symptoms and a history of anticoagulant use, appropriate diagnostic and therapeutic interventions should be promptly initiated.

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Ethical approval: The present study was conducted in strict accordance with the principles outlined in the Declaration of Helsinki. Informed consent was obtained from the participant of this study.

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