Apixaban-Associated Spontaneous Rectus Sheath Hematoma: A Geriatric Anticoagulation Dilemma in an 87-Year-Old Woman

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Abstract

Spontaneous rectus sheath hematoma (RSH), a rare complication of anticoagulation therapy, presents significant diagnostic and management challenges. We report the case of an 87-year-old woman with atrial fibrillation, hypertension, and chronic kidney disease (CKD) who developed spontaneous RSH while receiving apixaban. She presented with acute abdominal pain and a palpable mass, accompanied by anemia and coagulopathy. Non-contrast computed tomography (CT) confirmed a large rectus sheath hematoma. Conservative management, including the discontinuation of apixaban, administration of tranexamic acid, and close monitoring, led to clinical improvement without the need for invasive intervention.

This case highlights the importance of recognizing RSH in anticoagulated patients, particularly elderly individuals with renal impairment. Clinicians must maintain a high index of suspicion for atypical bleeding sites in patients receiving direct oral anticoagulants (DOACs) and consider conservative strategies when managing hemodynamically stable cases. The report underscores the need for individualized risk-benefit assessments when resuming anticoagulation and emphasizes the importance of patient education regarding bleeding risks.

Keywords: Spontaneous rectus sheath hematoma (RSH), Apixaban, Abdominal pain

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Introduction

Rectus sheath hematoma (RSH) is a rare cause of acute abdominal pain, typically resulting from the rupture of the epigastric vessels or their branches. While trauma and anticoagulant therapy are common predisposing factors, spontaneous RSH can occur, particularly in elderly patients with comorbidities. Apixaban, a direct oral anticoagulant (DOAC), has been associated with an increased risk of bleeding complications, including spontaneous RSH [1].

We report a case of spontaneous RSH in an 87-year-old woman receiving apixaban, highlighting the challenges in diagnosis and management. Clinicians should remain vigilant for atypical bleeding sites in DOAC-treated patients, particularly those with additional risk factors such as advanced age, renal impairment, or concurrent use of antiplatelet agents. This case underscores the importance of patient education in recognizing early signs of bleeding and the necessity of regular monitoring to balance thromboprophylaxis efficacy with bleeding risks.

Case Presentation

An 87-year-old woman with a history of atrial fibrillation, hypertension, and chronic kidney disease presented to the emergency department with sudden-onset abdominal pain. She had been taking apixaban (5 mg twice daily) for stroke prevention over the past three years. She denied any recent trauma, strenuous activity, or coughing episodes.

On physical examination, the patient was hemodynamically stable but exhibited tenderness in the left lower abdomen with a firm, non-pulsatile mass. Laboratory tests revealed a hemoglobin level of 9.5 g/dL (normal: 12–15 g/dL), a platelet count of 187,000/µL (normal: 150,000–450,000/µL), and an elevated creatinine level of 2.4 mg/dL (normal: 0.6–1.2 mg/dL). Coagulation studies showed a prolonged prothrombin time (PT) and activated partial thromboplastin time (aPTT).

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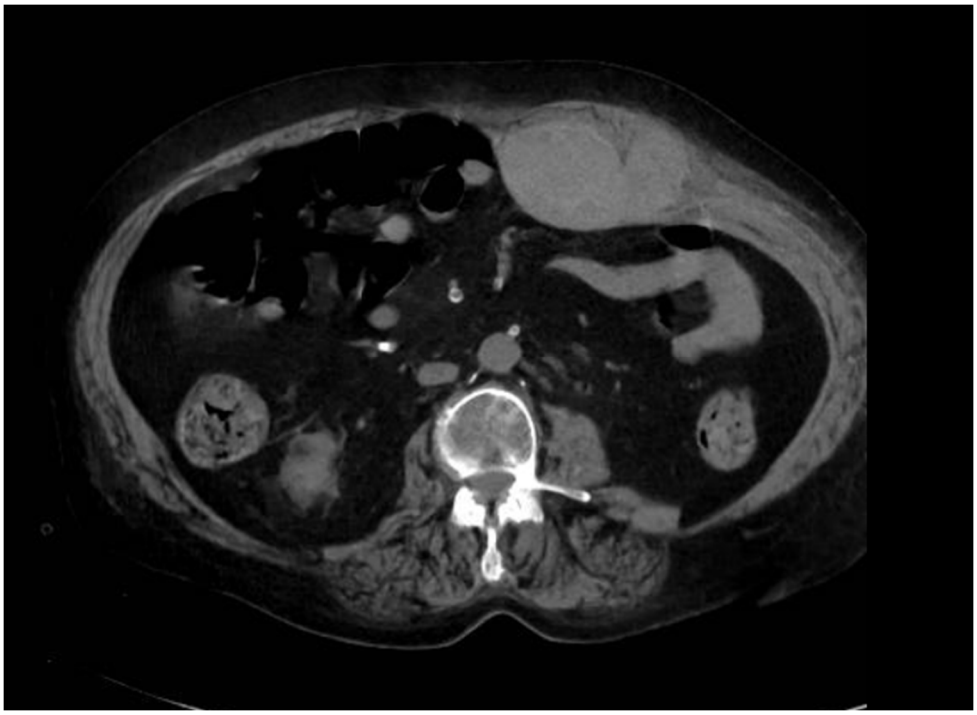

Fig. 1: Axial image of non-contrast computed tomography scan of the abdomen demonstrate a left-sided RSH measuring 77 × 22 × 70 mm in a 87year-old woman under apixaban therapy.

Due to impaired renal function, a non-contrast CT scan of the abdomen and pelvis revealed a large hematoma within the rectus sheath, extending into the lower abdomen, consistent with a spontaneous RSH (Figure 1). The patient was diagnosed with spontaneous RSH secondary to apixaban use.

Given the patient's advanced age, comorbidities, and stable hemodynamic status, a conservative approach was adopted. Apixaban was immediately discontinued, and tranexamic acid (1 g intravenously every 8 hours) was administered to promote hemostasis. The patient was closely monitored for signs of hemodynamic instability, and serial hemoglobin levels were checked. Blood transfusion was not required, as her hemoglobin remained stable.

Over the next five days, the patient's abdominal pain gradually resolved, and the palpable mass decreased in size. A follow-up CT scan on day 7 showed a significant reduction in the size of the hematoma. The patient was discharged on day 8 with instructions to avoid anticoagulants until further evaluation by her cardiologist.

Discussion

Spontaneous rectus sheath hematoma (RSH) is a rare condition, accounting for approximately 1–2% of all cases of acute abdominal pain [2]. It is more commonly observed in elderly patients, particularly women, and is often associated with anticoagulant therapy [3]. The incidence of RSH has increased with the widespread use of anticoagulants, including direct oral anticoagulants (DOACs) such as apixaban [4].

Advanced age, chronic kidney disease, and hypertension are significant risk factors for spontaneous RSH, as these conditions can weaken vascular structures and impair hemostasis [5]. In patients receiving anticoagulants, the risk of RSH is further exacerbated due to the inhibition of clotting mechanisms, making them more susceptible to bleeding complications [6].

The rectus sheath is formed by the aponeuroses of the lateral abdominal muscles and encloses the rectus abdominis muscle and the epigastric vessels. Spontaneous RSH typically results from the rupture of the inferior or superior epigastric arteries or their branches [7]. This rupture may occur due to increased intra-abdominal pressure from activities such as coughing, straining, or trauma. However, in spontaneous cases, it often arises without an obvious trigger [8].

In patients receiving anticoagulants, impaired clotting mechanisms heighten the risk of bleeding, even from minor vascular injuries [9]. Additionally, age-related vascular fragility and atherosclerosis can predispose elderly patients to spontaneous vessel rupture [10].

The clinical presentation of RSH is often nonspecific, posing diagnostic challenges. The most common symptom is acute abdominal pain, typically localized to the site of the hematoma [2]. A palpable

abdominal mass is present in approximately 60–90% of cases and is usually tender on palpation [3]. Other symptoms may include abdominal distension, nausea, and vomiting [4].

In severe cases, patients may exhibit signs of hypovolemic shock, such as tachycardia, hypotension, and diaphoresis, due to significant blood loss [5]. However, many patients—like the one in this case remain hemodynamically stable, making the diagnosis less straightforward [6].

The diagnosis of RSH requires a high index of suspicion, particularly in elderly patients receiving anticoagulant therapy who present with acute abdominal pain and a palpable mass [7]. Laboratory tests may reveal anemia, thrombocytopenia, or coagulation abnormalities; however, these findings are not specific to RSH [8].

Imaging is essential for confirming the diagnosis. Computed tomography (CT) is the gold standard, offering nearly 100% sensitivity and specificity [9]. CT can accurately localize the hematoma, assess its size, and determine whether it is confined to the rectus sheath or extends into adjacent structures [10]. Ultrasonography may also be used, but it is less sensitive and operator-dependent [2].

In cases where contrast-enhanced CT is contraindicated due to renal impairment, non-contrast CT, as utilized in this case, remains a valuable diagnostic tool [3].

The management of RSH depends on the patient's clinical stability, hematoma size, and presence of comorbidities. In hemodynamically stable patients, conservative management is the preferred approach [4]. This includes discontinuation of anticoagulant therapy, administration of hemostatic agents such as tranexamic acid, and close monitoring of hemoglobin levels and vital signs [5]. Blood transfusions may be necessary in cases of significant anemia [6]. Pain management and bed rest are also key components of conservative treatment [7].

Invasive interventions, such as angioembolization or surgical evacuation, are reserved for patients with hemodynamic instability, ongoing bleeding, or failed conservative management [8]. However, these procedures carry significant risks, particularly in elderly patients with multiple comorbidities [9].

Conclusion

This case illustrates spontaneous RSH as a rare but serious complication of apixaban therapy in an elderly patient with multiple comorbidities, including CKD. Despite the favorable safety profile of DOACs, bleeding risks persist, particularly in vulnerable populations with age-related vascular fragility and impaired renal clearance.

Timely diagnosis using cross-sectional imaging and prompt cessation of anticoagulation were pivotal in achieving a favorable outcome. The successful use of tranexamic acid and conservative measures in this hemodynamically stable patient underscores the value of non-invasive strategies, helping to avoid procedural risks in frail individuals. Patient education on early recognition of bleeding signs and multidisciplinary collaboration among cardiologists, hematologists, and primary care providers are critical to optimizing outcomes.

Further research is needed to establish standardized protocols for managing DOAC-related RSH and to identify patient-specific factors that predispose individuals to such complications.

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Conflict of interest

None to disclose.

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