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Case Report

Spontaneous retroperitoneal hematoma induced by vitamin K antagonist therapy: A case report^{☆,☆☆,★}

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ARTICLE INFO

Article history:

Received 18 March 2022

Revised 25 March 2022

Accepted 25 March 2022

Keywords:

Case report

Spontaneous retroperitoneal hematoma

Anticoagulation

Vitamin K antagonists

Mechanical heart valve

ABSTRACT

Vitamin K antagonists (VKA) are recommended in patients with mechanical heart valves. Major bleeding events remain the most life-threatening complication of this therapy and sometimes it can occur in unusual anatomic areas. Spontaneous retroperitoneal hematoma is one of the rare complications of anticoagulation therapy, which needs to be recognized early and managed promptly. Here, we report a case of a 40-year-old woman with mechanical heart valve treated with acenocoumarol, who was admitted to the emergency department with abdominal pain and whose investigations came back in favor of a massive retroperitoneal hematoma. The patient was successfully treated through conservative management resulting in a good outcome. Clinicians should be careful when prescribing VKA and should always think of retroperitoneal bleeding in the event of abdominal pain or a sudden decrease in the hemoglobin levels of anticoagulated patients.

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[☆] Acknowledgments: We would like to thank the team of cardiology and radiology of university hospital for their management and availability. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

^{☆☆} Competing Interests: The authors declare no conflicts of interest.

^{*} Authors' contributions: Dr Youssra Bouhaddoune; wrote the manuscript and conducted the literature review. Dr Marwa Bilal helped in data collection and analysis. Dr Hajar Mahjoub and Pr Imane Skiker provided imaging data and helped for diagnose. Pr El Ouafi Nouda and Pr Bazid Zakaria; contributed for diagnose, treatment of the patient and supervised the writing of the manuscript.

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<https://doi.org/10.1016/j.radcr.2022.03.099>

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Introduction

Vitamin K antagonists are mostly used for the treatment and prevention of thromboembolic diseases, the prevention of stroke in patients with atrial fibrillation or prosthetic heart valves. However, those medications can cause severe complications such as bleeding or hematomas in various anatomic areas [1]. Spontaneous retroperitoneal hematoma (SRH) is rarely reported in the literature [2], as a complication resulting from VKA overdose, especially without trauma, surgery or invasive medical procedure. We report the case of a patient with a mechanical mitral valve treated with acenocoumarol, who was admitted to our hospital for abdominal pain and whose investigations came back in favor of a large retroperitoneal hematoma which was treated conservatively. Early diagnosis and prompt treatment of this complication are crucial in order to improve the prognosis.

Case presentation

A 40-years-old woman with mechanical mitral valve replacement receiving acenocoumarol for 7 years, presented to our emergency department with acute abdominal pain, asthenia and vomiting. There was no history of trauma, vasculitis, coagulopathy or strenuous exercise. Physical examination revealed generalized pallor, tachycardia at 120 beats/min and blood pressure at 110/60 mmHg. Abdominal examination revealed a moderately distended abdomen with diffuse tenderness on palpation, without externalized bleeding. Cardiovascular examination was unremarkable.

Laboratory investigations showed severe anemia (hemoglobin 2.8 g/dl) with diminished hematocrit (18%), a markedly high international normalized ratio (INR at 7), a normal platelet count at 359.000 / μ L (150 000 à 400 000 / μ l), a partial thromboplastin time of 25 seconds (24–41), prothrombin time of 11 seconds (9–12), and fibrinogen at 3.5 g/l. Liver function and renal function tests were normal. VKA was immediately interrupted, and the patient was transfused by 4 units of packed red blood cells, 6 units of fresh frozen plasma (FFP). Furthermore, prothrombin complex concentrates at a dosage of 25 IU/Kg and 10 mg of vitamin K were administered.

A computed tomography (CT) scan of the abdomen and pelvis revealed a large left retroperitoneal hematoma measuring 143 × 113 mm (Figs. 1 A and B). There was no sign of active hemorrhage or extravasation of contrast medium. On the second day after administration, arteriogram was performed which revealed no active bleeding and without extravasation of contrast medium (Fig. 2).

After a discussion among cardiologists, visceral surgeons and anesthesiologists, we finally opted for a therapeutic abstention with strict clinical monitoring. The patient was given low molecular weight heparin as a bridging therapy to prevent the risk of prosthetic valve thrombosis.

Five days later, repeat abdominal computed tomography revealed resolution of retroperitoneal hematoma (Fig. 3). After 7 days, in the absence of any clinical, biological or radiological deterioration, we decided to restart anticoagulant therapy. She was discharged home 12 days after admission, in good health on acenocoumarol 2mg/j without any signs of recurrent bleeding, with a hemoglobin level at discharge at 11.9 g/dl with an INR at 3.5. After 1 month, she didn't present any other bleeding episode with a control hemoglobin level at 12 g/dl. A control abdominal computed tomography scan showed that the retroperitoneal hematoma had completely resolved.

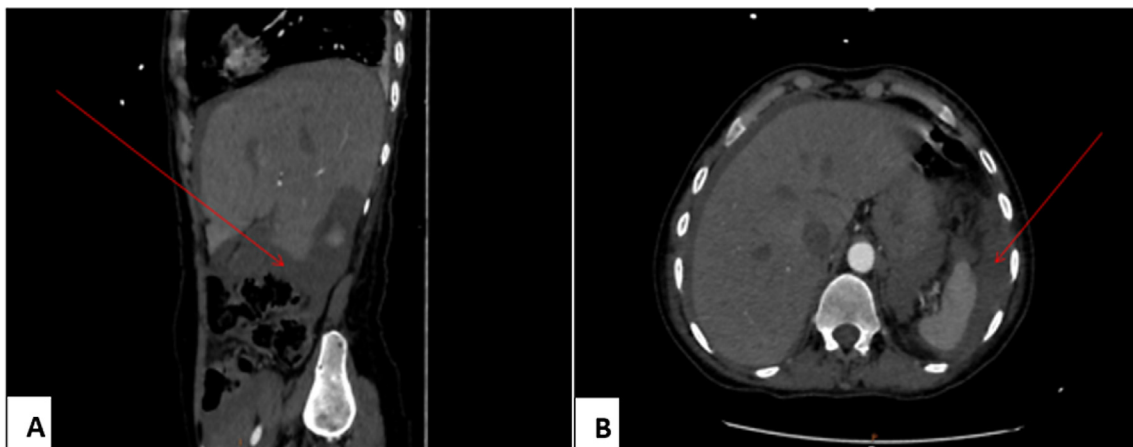


Fig. 1 – (A) Sagittal view and (B) axial view of abdominal computed tomography scans revealed a large left retroperitoneal hematoma (arrows).

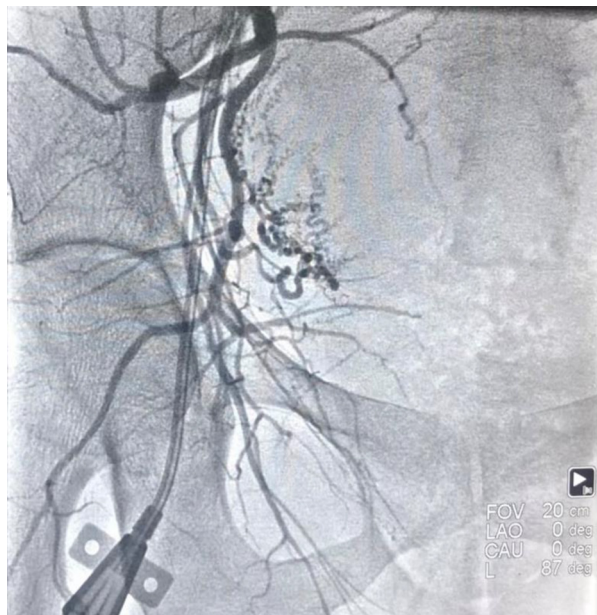


Fig. 2 – A peripheral angiogram of the left iliac arteries does not show extravasation of the contrast medium.



Fig. 3 – Control abdominal computed tomography scan revealing resolution of retroperitoneal hematoma.

Discussion

Retroperitoneal hematomas generally happen after penetrating or blunt trauma, in the context of ruptured abdominal aortic aneurysms, adrenal bleeding, an obstetrical pathology or a tumorous pathology [3]. Spontaneous retroperitoneal hematoma is a rare and serious entity because it can be life-threatening and often very difficult to diagnose because of its nonspecific symptoms. It is defined as the presence of blood within the retroperitoneal space without any trauma, surgery or invasive medical procedure [2]. Vitamin K antagonists (VKA) are recommended for patients with mechanical valves. It is of critical importance in secondary prevention of the thrombosis of these prosthetic valves because of their excessive thrombogenicity. However, those medications can cause severe complications such as bleeding or hematomas at various anatomic areas [1]. The incidence of SRH has been noted in 0.6%-6.6% of the patients receiving anticoagulant therapy [4]. The main risk factors for developing SRH are advanced age, impaired renal function, liver disease and concomitant administration of drugs that modify hemostasis [5,6]. Early diagnosis and prompt treatment of this complication are very important because SRH is associated with high mortality and morbidity rates due to compression of adjacent organs and massive blood loss [7].

Clinical presentation is variable and can be nonspecific, especially in the early stages, which leads to a delay in diagnosis [8]. Sunga et al [2] reported that 10.1% of patients with SRH were misdiagnosed initially. Patients classically present with abdominal pain, nausea and vomiting [2]. Severe cases may also involve circulatory instability or hypovolemic shock.

Diagnosis is based on abdominal ultrasound, abdominal CT scan or MRI. These methods can confirm and rule out other differential diagnoses, they also help assess the size and distribution of the hematoma and the underlying cause as well [8].

In this mini-review, we reported a case of spontaneous retroperitoneal hematoma in a patient treated with VKA and presented to our emergency department with intense abdominal pain with an anemic syndrome, however, she has no history of trauma, vasculitis, coagulopathy or strenuous exercise.

Therapeutic management of hemorrhagic patients on anticoagulant therapy in patients with mechanical heart valve prostheses was very difficult, restarting treatment could lead to the recurrence of the bleeding, nevertheless, suspending or stopping treatment could lead to prosthesis thrombosis. The management of retroperitoneal hematomas depends on the severity of the hemorrhage and hemodynamic status of the patient and may include numerous methods such as a conservative approach, surgery or arterial embolization [8–11]. Supportive measures are crucial in the treatment of SRH. It involves a cessation of VKA, blood transfusions if necessary, rapid reversal of anticoagulation with prothrombin complex concentrates, fresh frozen plasma, and the administration of vitamin K. Conservative management is recommended in hemodynamically stable patients, with close monitoring of vital signs, hemoglobin measurements and INR [12]. Intra-arterial embolization is increasingly used in cases where the angiogram reveals active bleeding sites [13]. We should resort to surgery if the hemorrhage was uncontrolled by conservative treatment, if interventional radiology was unavailable or if the patient remains hemodynamically unstable.

In our case, immediate discontinuation of VKA, blood transfusion, administration of vitamin K, FFP and even prothrombin complex concentrate were performed with a favorable evolution, the patient had no other bleeding episodes under acenocoumarol treatment, the hematoma resolved almost entirely at the end of 1 month follow-up.

Conclusion

Spontaneous retroperitoneal hematoma is a rare clinical entity. It can be life-threatening for the patient, hence the importance of early diagnosis and management to improve the prognosis. The use of vitamin K antagonists must be strictly monitored because of their potential interactions with other drugs and their narrow therapeutic index. Physicians should be careful when prescribing VKA and should always think of retroperitoneal bleeding in the event of abdominal pain or a sudden decrease in the hemoglobin levels of anticoagulated patients

Consent for publication

Obtained.

Guarantor

- Prof. Bazid Zakaria
- Dr Youssra Bouhadoune

Provenance and peer review

Not commissioned, externally peer-reviewed.

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