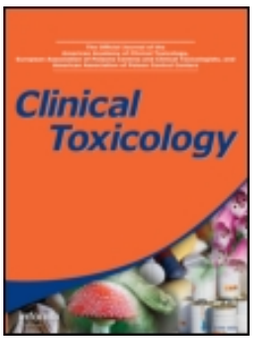

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CASE REPORT

Intramuscular hemorrhage resulting in shock associated with warfarin toxicity

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Keywords Bleeding; Hemorrhage; Warfarin toxicity; Hemorrhagic shock

Introduction

Oral anticoagulant therapy effectively prevents thromboembolism and its major complication is hemorrhage. The majority of life-threatening hemorrhagic events associated with warfarin use consists of intracranial, intraabdominal and most frequently, gastrointestinal bleeding (1,2). Hemorrhagic complications have been identified in soft tissue (including wounds, 21%), gastrointestinal tract (15%), urinary tract (15%), nose and pharynx (35%), intracranial (4%), thorax (3%), joints (0.5%), intraocular (2%), and retroperitoneum (1%) (1).

We describe a patient with warfarin toxicity suffering from hypovolemic shock due to a large hematoma in his back. Although there are a large number of patients with hematomae in soft tissues, the specific location of the present case resulting in shock is unique and worth reporting.

Case report

A forty-eight year-old man was brought to the Emergency Department (ED) by his wife due to malaise and a history of near-syncope. He appeared sweaty and pale with a blood pressure of 90/65 mm Hg, heart rate 109 beats/minute, and respiratory rate 28 breaths/minute.

According to his wife, he had taking warfarin (Coumadine) 5 mg tablets after aortic valve replacement for nearly six months. Upon awakening one morning, he had a visible lump in his left back region, he was very pale, and complained of dizziness, lightheadedness and blackouts. He reported that the mass in his back was enlarging and he had a near-syncope episode en route to the hospital. The patient and his wife denied any direct injury, hit, or fall that could result in the mass recently.

Physical examination disclosed a pale and ill-appearing patient with a 18 x 13 cm lump in his back from left thorax to lumbar area (Fig. 1a-b). There was no skin discoloration over the lump, which was tender on palpation. Digital rectal examination was negative for occult or gross blood and there was nothing remarkable on the examination of other systems. Laboratory examination revealed hemoglobin (Hg) 8.9 g/dL, hematocrit (Htc) 23.5%, prothrombin time (PT) >140 sec, activated partial thromboplastin time (aPTT) >140 sec, international normalized ratio (INR) 12. Values recorded one month before were Hg 15.1 g/dL, Htc 31.7 %, INR 2.6. His ECG was not remarkable in terms of ischemic or arrhythmic findings. There was no sign or finding suggestive of cardiogenic shock.

Thoracoabdominal computed tomography revealed a large hematoma with a thickness of 5 cm in thoracic sections, and a craniocaudal length of 20 cm between intercostal muscles and serratus anterior and latissimus muscles, reaching into subcutaneous fat tissue just lateral to abdominal oblique muscles (Fig. 2a-c).

The patient was treated with 2 L normal saline in two hours in the ED. Additionally, four units of fresh frozen plasma and two units of erythrocyte suspension were given, and intravenous menadione sodium bisulphate (vitamin K) 40 mg was administered (phytonadione was not available). Use of recombinant factor VIIa was reserved in case of failure of improvement. The course of his coagulation profile and complete blood count is depicted in Table 1.

He was admitted into the Intensive Care Unit run by cardiologists where he received additional two units of erythrocyte suspension. The patient was then followed on the ward for 26 days in order to ensure that the bulk of clot was completely resolved. His lump resolved in the meantime with no adverse events. The patient was informed and educated on side and untoward effects of warfarin treatment and was discharged with recommendations. The lump in his back was

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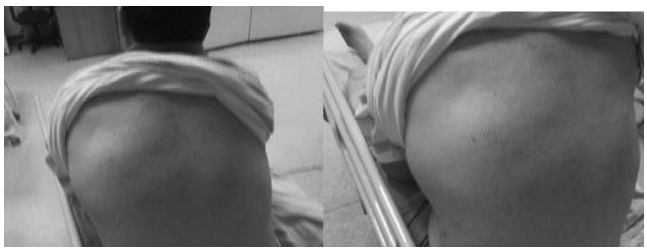

Fig. 1. a-b. Painless mass in the left thoracolumbar area.

completely resolved in his follow-up visit one month later and his coagulation profile was within acceptable limits.

Discussion

Anticoagulant agents are nowadays used commonly to prevent acute ischemic stroke, deep vein thrombosis, pulmonary embolism, in the setting of acute myocardial infarction, atrial fibrillation, and valvular heart diseases. Warfarin is the most commonly prescribed member of the family. Untoward consequences attributed to Warfarin are not infrequent in the routine medical practice. Bleeding is the most significant adverse event (1).

Major bleeding episodes are reported to occur in 1 to 12% of cases (3) while a similar study cited the rate as 3% (1). The rate of major bleeding in Turkey was reported as 21.6% (4). The authors commented the high incidence of major bleeding episodes in Turkey could be attributed to social and cultural diversity, difficulties in follow-up of bleeding profiles and genetic factors (4,5). For example, it is somehow more difficult in our country to reach the physician following the patient, or to get an outpatient follow-up date to have the prothrombin time checked.

Gastrointestinal bleeding comprises the major part of major bleeding episodes attributed to warfarin toxicity (2). A literature search revealed that few reports were available regarding nontraumatic hemorrhages sparing gastrointestinal system due to warfarin toxicity; most of these data were based on retroperitoneal intraabdominal hemorrhages (6–10).

Two cases were reported to suffer from intramuscular hemorrhage resulting in hemodynamic instability hemorrhagic shock in the course of warfarin toxicity (6,11). Hematomas were noted in the anterior wall of abdomen and there were apparent masses on examination and hypovolemic shock in both cases. On the other hand, a hematoma emerged in and around serratus anterior muscle in the back, enlarged and descended into lumbar area in the present case. The hemorrhage resulted in hemorrhagic shock due to a large abdominal wall hematomas. This specific location is unique in the literature.

Symptoms emerged with a simple lump that developed into a mass, sweating, dizziness, lightheadedness, and blackouts and near-syncope associated with on-going hemorrhage. Physicians in the EDs and primary care institutions need to consider bleeding intramuscularly in the abdominal wall and back in the setting of warfarin toxicity among usual causes of hemorrhagic shock. A rapid inspection can overlook these unusual localizations of bleeding episodes. Efficient, aggressive treatment must be instituted before the hemorrhage give way to apparent hypovolemic shock.

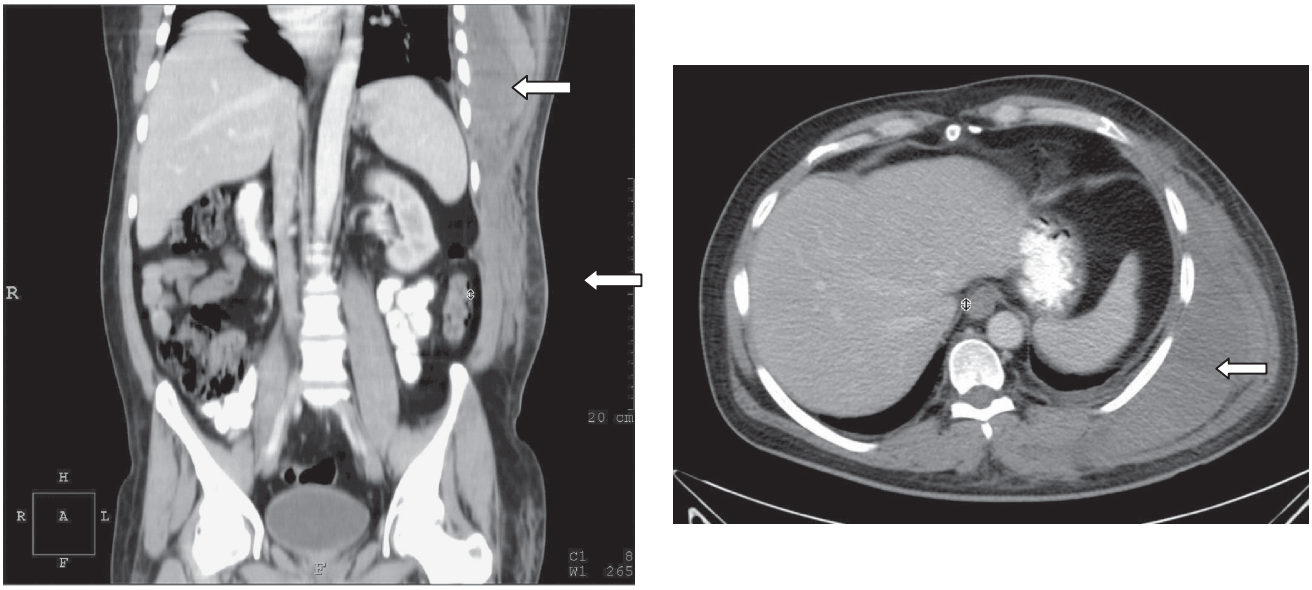

Fig. 2. a-c. Thoracic and abdominal CT images. Coronal reconstructed images (a, b), and axial CT image (c). Hypodense hematoma can be imaged in the left hemithorax between intercostal muscles and serratus anterior muscles, lateral to oblique abdominal muscles reaching to subcutaneous fat tissue.

Table 1. The course of the patient's coagulation profile and complete blood count

Time	Hg (g/dL)	Htc (%)	PT (sec)	aPTT (sec)	INR
Admission	8,9	23,5	140>	140>	12,4
5 hr	9,3	28,0	42,8	62,1	4,36
10 hr	10,0	29,6	30,2	44,9	2,79
24 hr	11,8	36,0	13,2	27,4	1,02

Hg: Haemoglobin Htc: haematocrit hr: hours.

Conclusion

Bleeding episodes associated with warfarin overdose resulting in shock states are not always detected in gastrointestinal tract and in intraabdominal area. ED and primary care physicians should never overlook major hemorrhagic complications occurring in unusual locations.

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