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Case Report

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A case of enoxaparin-related spontaneous retroperitoneal hematoma in an elderly patient

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ABSTRACT

Enoxaparin is a low molecular weight heparin and the most commonly used antithrombotic agent worldwide. However, this is also leading to increasing incidences of complications. One of the thesecomplication is spontaneous retroperitoneal hematoma. The aim of the present study is to evaluate spontaneous retroperitoneal hematoma associated with enoxaparin use in an 86-year-old man hospitalized for seven days with a diagnosis of chronic obstructive pulmonary disease. The usage of enoxaparin with antiplatelet agents increased the risk of bleeding in an 86-year-old patient. The usage of combination of enoxaparin and antiplatelet medications should be paid more attention.

1. Introduction

Spontaneous retroperitoneal hematoma (SRPH) is a rare, but life-threatening condition. Appropriate treatment relies based on prompt and accurate diagnosis. This is quite simple using imaging techniques. However, it may not always be easy to identify the source of the hemorrhage and the pathological state responsible.

The most commonly reported etiology of SRPH involves hemorrhages of renal cell carcinomas and angiomyolipoma, which constitute 57-72% of all cases. Other vascular causes of SRPH include polyarteritis nodosa, renal artery aneurysm, and necrotizing arteritis. SRPH has been well described among patients receiving anticoagulant therapy, and has been linked to warfarin, low molecular weight heparin (enoxaparin) and ticlopidine (Daliakopoulos, 2011).

We report a case of SRPH in an elderly patient with chronic obstructive pulmonary disease (COPD) and impaired kidney function receiving anticoagulant therapy.

2. Case report

An 86-year-old man presented to the chest diseases clinic with respiratory difficulty, cough, and generally impaired condition. In addition to COPD treatment, the patient was also receiving heart failure treatment and

antiaggregant therapy. He was admitted to the clinic. The patient was receiving digoxin 0.25 mg, enoxaparin 6000 IU, methylprednisolone 40 mg, acetylcysteine 300 mg, and acetyl silicic acid 100 mg, and was began ceftriaxone 1 g for infection treatment. On the seventh day of treatment, the patient described abdominal and left flank pain, and hypotension (80/50 mmHg) and tachycardia (135/min) developed. Control blood count decreased to 6.8 g/dl. The patient was given enoxaparin and acetyl silicic acid. His platelet count was 285.000/mm^3, INR 0.94, Prothrombin time (PT) 10.2 s, activated partial prothrombin time (APTT) 20.9 s, urea 173 mg/dl, creatinine 3.2 mg/dl and potassium 6.6 mEq/L. Emergency abdominal tomography revealed a retroperitoneal solid mass area, 110 x 70 mm in size, potentially compatible with hematoma contiguous and anterior to the left iliopsoas muscle, at the left infrarenal level (Fig. 1).

Antifactor Xa was one of the most important indicators to monitor the effect of low-molecular anticoagulants but could not be measured due to lack of equipment in the hospital. Emergency consultation was performed with the urology department on suspicion of retroperitoneal hematoma. When first consultation of urology department, his general condition was poor, and hypotension and urine retention were present. The patient was urgently transferred to the medical intensive care unit. Enoxaparin was discontinued, and the patient was given four units of erythrocyte suspension and three units of plasma. Since no more than 12 hours after the last dose of enoxaparin, the patient was administered 50 mg protamine sulfate. Respiration stopped, and he was intubated. Despite blood product transfusion and supportive treatment, death occurred 48 hours later.

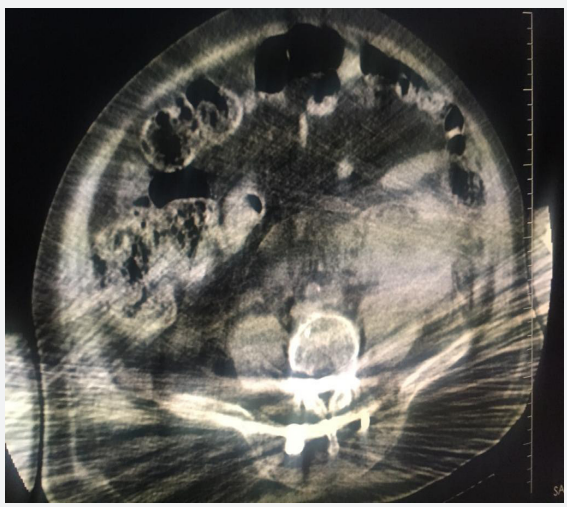

Fig. 1. Abdominal tomography revealed a retroperitoneal solid mass area, 110 x 70 mm in size, potentially compatible with hematoma contiguous and anterior to the left iliopsoas muscle, at the left infrarenal level.

3. Discussion

Tumors are the most common cause of SRPH. Enoxaparin-related SRPH is a rare entity (Vaya et al., 2003). Enoxaparin has been shown to as safe and effective as unfractionated heparin in the treatment of venous thrombosis. However, various significant complications such as acute pulmonary embolism, abdominal wall hematoma, psoas hematoma, femoral hematoma, and retroperitoneal hematoma have been reported in patients treated with enoxaparin for acute venous thromboembolism. The common feature in these cases is advanced age (Vaya et al., 2003). Enoxaparin therapy has been shown to be a risk factor for hematoma over the age of 70. An age-related decrease in glomerular filtration rates in elderly patients has been reported to result in a decrease in medication sensitivity through decreased drug clearance and a decrease in drug levels (Ernits et al., 2005).

Symptoms and findings of SRPH depend on the etiology. Immediate hypovolemic shock occurs in severe hematomas, and Grey Turner's sign may develop. The optimal method in the diagnosis of SRPH is abdominal pelvic tomography (Lissoway and Booth, 2010). Acute abdominal pain and a sudden fall in hemoglobin should suggest the possibility of SRPH. In terms of treatment, anticoagulant therapy must be stopped. Blood transfusion may be required, depending on hematocrit values. If the hemorrhage cannot be stabilized with support treatment and all interventions are unsuccessful, surgery may be required. SRPH may sometimes give rise to abdominal compartment syndrome by compressing surrounding tissues and organs, and this can only be corrected surgically (Haq et al., 2010; Daliakopoulos, 2011). In our case, anticoagulant therapy was immediately discontinued, but the patient's condition worsened rapidly, there was not enough time for surgical intervention. Abdominal compartment syndrome is not an unexpected finding due to the patient's advanced age, uremic status and development of COPD.

In addition, the use of enoxaparin together with antiplatelet agents increases the risk of bleeding. Intraocular and intracranial bleeding, and retroperitoneal bleeding-related mortality in one patient, has been reported in cases in which enoxaparin and acetyl silicic acid was used in combination (Haq et al., 2010). Our patient received both enoxaparin and acetyl silicic acid for seven days during hospitalization. These drugs may be one cause of the bleeding.

We report a case of retroperitoneal hematoma with no change in coagulation parameters in a patient receiving enoxaparin and acetyl silicic acid for the treatment of venous thrombosis. However, we think that the patient's advanced age, impaired kidney functions and development of COPD led to the development of retroperitoneal hematoma and subsequent rapid progression.

In conclusion, anticoagulant therapy with enoxaparin can lead to severe hematoma. It should therefore be remembered that when enoxaparin is used together with antiplatelet medications such as acetyl silicic acid, particularly in the elderly and in patients with impaired kidney functions, this increases the risk of hemorrhage. Greater care must be taken over the use of these drugs, particularly in the advanced age group. Further studies are therefore needed in order to determine the appropriate dose range in elderly subjects without compromising therapeutic effectiveness in acute thromboembolic patients.

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