

Hematoma of Rectus Sheath Following Subcutaneous Enoxaparin Injection

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Abstract- Anticoagulation drugs are frequently used to prevent deep vein thrombosis in high-risk patients. Subcutaneous low molecular weight heparin (LMWH) is increasingly used in both hospitalized patients and outpatient settings. This necessitates familiarity of both health care providers and patients with such treatment and vigilance on possible complications. Here we present a case of hematoma of rectus sheath that occurred following subcutaneous injection of enoxaparin and was successfully treated with conservative management.

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Introduction

Hematoma of rectus sheath is an uncommon problem that mainly occurs in patients receiving anticoagulation therapy. It can be misdiagnosed since it can mimic an acute abdomen and although it mainly resolves by conservative management significant blood loss can occur that mandates intervention (1,2). Since subcutaneous enoxaparin is being used increasingly in both outpatient and inpatient setting familiarity of both health care providers and patients with such treatment and vigilance on possible complications is necessary we here present a case of hematoma of rectus sheath that occurred following subcutaneous injection of enoxaparin and was successfully treated with conservative management.

Case Report

A 52-year old woman presented to emergency department with complaint of progressive cough and dyspnea. She had been diagnosed to have COPD and was taking salbutamol and ipratropium bromide inhalation and oral prednisolone 30mg/day. She was well until two weeks before admission when she developed deteriorating cough and dyspnea. Echocardiography, chest CT-scan and lower limb duplex ultrasonography were performed during diagnostic work-up and patient ultimately was diagnosed with exacerbation of COPD and was placed on ceftriaxone, azithromycin, salbutamol, hydrocortisone and

subcutaneous enoxaparin 60mg twice a day.

On sixth day of her stay the patient complained of sudden right abdominal pain and a surgery consultation was made. On examination right abdomen had significant tenderness and rigidity just lateral to midline. Swelling over area of tenderness was also noted. There was no tenderness or rigidity in other parts of abdomen. Lab data were as follows: WBC: 6600, Hb: 11.9 mg/dl, Platelets: 141000, PT: 15, INR: 1.5, PTT: 28.

Patient was hemodynamically stable. An abdominal ultrasonography was performed that reported a 12 in 5 cm hematoma in lower abdomen. Abdominopelvic CT-scan revealed massive hematoma within rectus sheath from hypogastrum up to right upper quadrant (Figure 1 and 2).



Figure 1. Computed tomography of abdomen showing hematoma within rectus sheath.

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Figure 2. Extension of hematoma to upper abdomen.

Anticoagulant drugs were discontinued and patient was treated with bed rest, intravenous fluids and analgesics. Three days after onset of pain the hematoma showed expansion and marked ecchymosis were noted on overlying skin. Patient developed tachycardia and hemoglobin dropped from 11.9 mg/dl to the level of 10.4 mg/dl and then to 7.9 mg/dl.

Two units of packed cell were transfused and patient was closely monitored for hemodynamic status.

She remained well and stable thereafter and hemoglobin level reached 11 mg/dl without any further decline.

Pain and hematoma gradually subsided and the patient was discharged from hospital ten days after onset of abdominal pain.

Discussion

Hematoma of rectus sheath is an uncommon problem that mainly occurs in patients receiving anticoagulation therapy but it may happen following exercise, strain of abdomen- as chronic cough or constipation, or even spontaneously (1).

Incidence of hematoma of rectus sheath is reported to be increasing due to aging of population and increased use of anticoagulation drugs, two important predisposing factors (2).

Systemic anticoagulation drugs like warfarin and intravenous heparin have been described as risk factors of rectus sheath hematoma but there is reports that use of subcutaneous prophylactic enoxaparin have been associated with hematoma of the rectus sheath and other distant locations (3-5). Still the rectus sheath hematoma is a rare cause of abdominal pain and it can be easily overlooked.

Presenting symptom is pain and abdominal swelling may be detected in most but not all patients (7).

One must bear in mind hematoma of rectus sheath while evaluating a patient- especially an elderly- who is taking anticoagulants and complains of sudden abdominal pain. It can be suspected in physical examination by finding localized tenderness and swelling, most commonly unilateral and in right abdomen, ecchymosis of overlying skin if present is a highly suggestive finding (8,9).

Ultrasonography is the preferred initial imaging (10,11) that shows collection within abdominal wall but the CT-scan is imaging of choice that diagnoses all cases (8,11).

A classification of rectus sheath hematoma based on CT-scan findings and appropriate management of each class has been proposed (12).

Since the bleeding occurs within confined space of rectus fascia, most cases can be managed conservatively with bed rest, pain management and resuscitation. Blood transfusion may be needed to address significant blood loss that lead to a hematocrit drop.

Anticoagulant drugs are discontinued upon diagnosis but can be resumed after hematoma is controlled and patient is stable (13).

Course of hematoma of rectus muscle is not always self limited and severe blood loss leading to hemodynamic instability and even death has been occurred (3,14); so the patient must be closely monitored for possible failure of conservative treatment and necessity of intervention

Surgery with exploring hematoma and hemostasis or ligation of inferior epigastric artery has been performed for control of bleeding in patients unresponsive to conservative management (15).

Angiography and embolization is a non-invasive and effective method in controlling bleeding in refractory cases of rectus sheath hematoma and if available is intervention of choice (13,16). Albeit, none of this procedures was required in our case.

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