



Case Report

A case of upper left extremity deep vein thrombosis with right side middle lobe syndrome

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ABSTRACT

Upper extremity deep vein thrombosis is an extremely important clinical entity with potential for considerable morbidity and mortality. A 64-year-old woman was brought to the emergency department with complaints of left upper limb and neck swelling for 4 days. Ultrasonography of the neck showed thrombosis of the left internal jugular and other surrounding veins associated with local lymphadenopathy. Computed tomography (CT) of the neck also showed a hypodense 0.6 cm × 0.8 cm × 1.2 cm lesion in the right middle lobe bronchus, causing complete occlusion and collapse of the right middle lobe of the lung. Fine-needle aspiration cytology and a lymph node biopsy showed nongranulomatous lymphadenitis. The patient was started on fondaparinux 10 mg subcutaneously once daily. She was discharged on oral anticoagulants for 6 months. Repeat CT scan after 6 months showed dissolution of the lesion and reexpansion of the right lung.

KEYWORDS: *Lymphadenopathy, Middle lobe syndrome, Upper extremity deep vein thrombosis*

INTRODUCTION

Upper extremity deep vein thrombosis (UEDVT) is relatively rare, accounting for no more than 10%–20% of all cases of deep vein thrombosis (DVT). Secondary DVT is more common than primary DVT [1]. Patients with “idiopathic” primary UEDVT (much less likely), when compared with those with effort-related primary UEDVT (i.e., Paget-Schroetter syndrome) tend to be older with a female predominance secondary UEDVT (which comprises the vast majority of cases) arises generally in the presence of recognizable risk factors, such as central venous catheters and cancer [2]. The current state of evidence on UEDVT is rather poor, due to the absence of large randomized controlled trials. UEDVT is infrequent in the general population. Its incidence, however, increases exponentially when moving to the hospital setting, mainly the intensive care unit. Despite the poor data on this condition, anticoagulation is indicated for acute UEDVT [2].

Chronic or recurrent collapse of the right middle lobe is termed middle lobe syndrome (MLS). MLS continues to fascinate clinicians as it is a distinct but uncommon clinical presentation which is yet to be fully appreciated [3]. We present here a patient with “idiopathic” primary UEDVT with MLS.

CASE REPORT

A 64-year-old woman (a homemaker) was brought to the emergency department with complaints of left upper limb and neck swelling for 4 days. Other symptoms included mild pain

in the area of the swelling, generalized uneasiness, lethargy, fever, and mild sputum formation for the past 7 days. There was no history of tingling or numbness, focal motor or sensory deficits, giddiness, fall or injury. There was also no history of anorexia or weight loss and no family history of DVT. She had hypertension and had taken a calcium channel blocker for a year and a half. She had no history of diabetes mellitus, bronchial asthma, chronic obstructive pulmonary disease, or coronary artery disease. There was no history of alcoholism or smoking. On examination, the patient had diffuse pitting edema in the left supraclavicular region and left arm. There was very minimal tenderness but no redness, bruising, or skin discoloration. Her breast examination was normal. Ultrasonography of the neck showed thrombosis of the left internal jugular vein (involving the lower two-thirds with total luminal occlusion), left brachiocephalic vein, left subclavian vein, and left axillary vein. This was associated with mild enlargement of the left jugulodigastric, lateral jugular, and supraclavicular lymph nodes.

The patient was started on fondaparinux 10 mg subcutaneously once daily. Plain and contrast computed tomography (CT) scan of the neck and thorax showed thrombosis

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of the left subclavian vein, brachiocephalic vein, and left mid, distal internal jugular vein, associated with conglomerated lymphadenopathy seen along the lower third of the left internal jugular vein and in the left supraclavicular region encasing the left subclavian vein, carotids, and thrombosed internal jugular vein. The left subclavian vein also did not show contrast opacification, suggesting thrombosis [Figure 1a and b]. A hypodense 0.6 cm × 0.8 cm × 1.2 cm lesion was seen in the right middle lobe bronchus causing complete occlusion and collapse of the right middle lobe [Figure 2a and b]. CT and ultrasonography of the abdomen were normal. Hematological and biochemical investigations were normal. Initial fine-needle aspiration cytology (FNAC) and a later lymph node biopsy showed non-granulomatous lymphadenitis. No malignant cells/acid-fast bacilli (AFB) were detected. Bronchoscopy could not visualize the lesion and the cytology and AFB culture of the bronchial washings were negative. No antibiotics were prescribed as the patient did not show any overt signs/symptoms or laboratory findings suggestive of infection. Repeat color Doppler ultrasound of the neck after 2 weeks of treatment with anticoagulants showed regression of the lymph nodes. There were no positive findings in chest radiography except for some prominent bronchovascular markings in the right lower zone.

After evaluating the patient completely for 2 weeks, she was discharged with oral anticoagulant therapy for 6 months. She was feeling better and was completely asymptomatic at discharge. Repeat color Doppler ultrasound of the neck after 6 months of treatment with anticoagulants showed 90% regression of the DVT. A repeat CT scan of the thorax after 6 months showed dissolution of the lesion and reexpansion of the right middle lobe, with a similar impression after 12 months [Figure 3a and b].

DISCUSSION

Up to 10% of all cases of DVT involve the upper extremity, occurring at an incidence of about 3/100,000 in the general population. The highest incidence of thrombosis in the upper extremity is in the subclavian vein (18%–67% incidence), followed by the axillary (5%–25% incidence) and brachial (4%–11% incidence) veins, with a marked predilection for the left side [4]. Recent case series have described internal jugular vein thrombosis rates of 25%–30% after functional neck dissection and hemodialysis catheter placement [5]. The strongest risk factors for development of UEDVT are central venous catheterization, hospitalization, and malignancy [6]. Pulmonary embolism is present in up to one-third of patients with UEDVT.

Patients with idiopathic UEDVT have no known trigger or obvious underlying disease. Idiopathic UEDVT may, however, be associated with occult cancer. In one study, one-fourth of patients presenting with idiopathic UEDVT were diagnosed with cancer, most commonly lung cancer or lymphomas, within 1 year of follow-up. Most of these cancers were discovered during the 1st week of hospital admission for the venous thrombosis [7]. Malignancy was undoubtedly the primary suspected clinical diagnosis in our patient, keeping in mind her age. Idiopathic upper extremity DVT cases have been associated

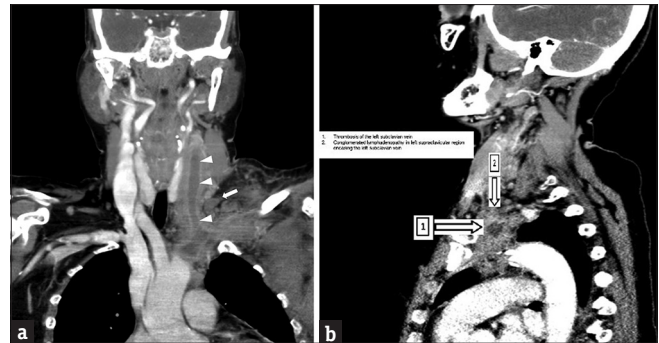


Figure 1: (a) Oblique coronal reformatted contrast-enhanced computed tomography of the neck in the soft tissue window showing acute thrombosis of the left brachiocephalic vein (arrowheads) extending below into the brachiocephalic vein. (b) Extension of Figure 1a indicating the location of the thrombosis and lymphadenopathy

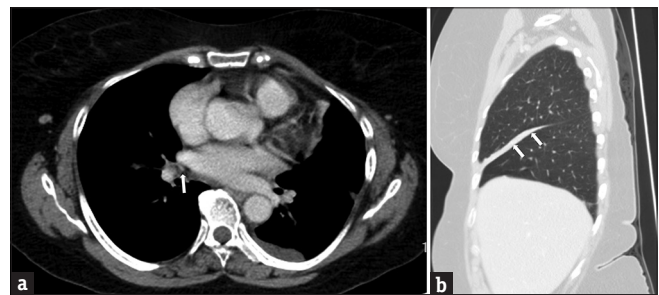


Figure 2: (a) Axial contrast-enhanced computed tomography of the chest in the soft tissue window shows a hypodense lesion in the right middle lobe bronchus. (b) Sagittal reformatted computed tomography image of the chest in the lung window shows a collapsed right middle lobe (arrows)

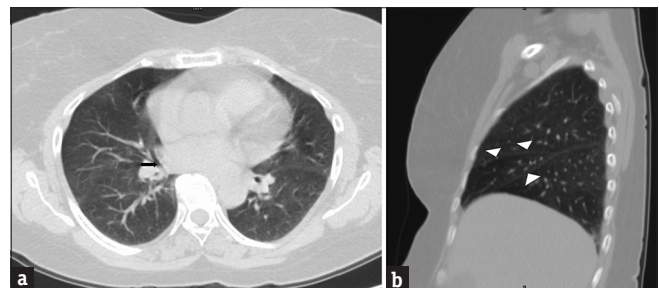


Figure 3: (a) Follow-up axial computed tomography image in the lung window shows a patent right middle bronchus (black arrow). (b) Follow-up sagittal reformatted computed tomography image in the lung window shows that the right middle lobe (outlined by white arrowheads) is completely reexpanded

with occult cancers. Findings from a past study revealed the development of a malignancy (mostly lung cancer or lymphoma) within the 1st year in one-fourth of these patients [8]. Malignancy, lymphoma, and tuberculosis were ruled out in our patient. The next most common cause for reactive lymphadenitis in the supraclavicular region is infectious, mainly viral, and hence, the cause could be an acute/subacute occult viral infection in the lung, with MLS being an important supporting factor. As a rule, swollen nodes other than supraclavicular/level V nodes usually result from reactive lymphadenopathy or infectious/viral lymphadenitis [9]. Although viral etiology was considered, there was no definite evidence of it. Furthermore, as this was the first incidence of DVT in this patient and with

the background data of lymph nodes compressing vessels leading to poor flow and venous stasis, she was not evaluated for any other hypercoagulable states or mutations leading to hypercoagulability. There was also no family history of DVT.

MLS is a rare but important clinical entity that has been poorly defined in the literature. It is characterized by recurrent or chronic collapse of the middle lobe of the right lung but can also involve the lingula of the left lung. Obstructive MLS is usually caused by endobronchial lesions or extrinsic compression of the middle lobe bronchus such as from hilar lymphadenopathy or tumors of neoplastic origin. The etiology of the nonobstructive form is not completely understood. MLS is more common in females; the ratio of female to male ranges from 1.5 to 3 in most studies [10]. In our case, the CT scan showed obstructive MLS. It is hypothesized that the middle lobe has a greater susceptibility to collapse as its bronchus is rather narrow at its origin. The length as well as the angular take-off of this bronchus makes it liable to compress from enlarged lymph nodes [3]. CT-guided FNAC was ruled out by the radiologist as the lesion was surrounded by important vascular structures. We hypothesized that this tiny lesion in the right middle lobe supported by the conglomerated lymphadenopathy could be due to sputum impaction. This case could have been an acute/subacute subclinical viral infection of the lungs, vaguely indicated by the negative blood culture. No antibiotic therapy was prescribed. Furthermore, the patient had symptoms of sputum formation, supported by the initial FNAC report suggesting lymphadenitis with adjacent lymph node involvement. This could have caused inflammation and thrombosis of overlying veins which resolved with time. To conclude, this is the unique case of multiple comorbid conditions related to UEDVT.

Declaration of patient consent

The authors certify that the patient has obtained appropriate patient consent form. In the form, the patient has given her consent for her and other clinical information to be reported in

the journal. The patient understands that her name and initial will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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