



Superior vena cava syndrome with concomitant upper extremity deep vein thrombosis

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Introduction

Superior vena cava syndrome (SVCS) is a common presentation of patients with intrathoracic malignancies. Concomitant upper extremity deep venous thrombosis (UEDVT) is uncommonly observed in these patients.

Case description

A 70-year-old woman with refractory mediastinal small lymphocytic lymphoma on ibrutinib, status post-orthotopic liver transplant for acute hepatitis B liver failure on tacrolimus, and paroxysmal atrial fibrillation on apixaban and metoprolol, presented with 1 day of palpitations associated with dyspnea, flushing, and lightheadedness. The patient denied chest pain, fever or chills.

Vital signs were notable for a heart rate of 114 beats/min, blood pressure of 85/57 mmHg, and a respiratory rate of 22 breaths/min with 96% oxygen saturation on room air. Physical examination findings revealed distant regular S1 and S2 heart sounds, and jugular venous distention to 8 cm above the sternal angle. Initial evaluation revealed sinus tachycardia on electrocardiography, a widened mediastinum, and an increased cardiac silhouette on chest X-ray. Due to the patient's symptoms and initial imaging findings, a stat echocardiogram was obtained, which showed a moderate pericardial effusion with tamponade physiology. An urgent thoracotomy with pericardial window was performed with improvement in her symptoms post-procedure.

The patient's hospital course was complicated by the development of bilateral upper extremity (UE), neck and face edema with engorgement of neck veins. A computed tomography of the chest with contrast was performed showing SVCS secondary to superior vena cava (SVC) compression by massive mediastinal and hilar lymphadenopathy (Fig. 1a, b). The patient also complained of worsening UE edema, which was more prominent in her left UE. This difference in her UE edema prompted further investigation with a bilateral UE doppler ultrasound that demonstrated a non-occlusive mural thrombus at the lateral left subclavian vein (Fig. 1c), for which therapeutic heparin was initiated. With regard to SVCS management, interventional radiology obtained a biopsy of the compressing mass to direct future management. An endovascular stent was also placed to relieve the vascular compression.

Discussion

Superior vena cava syndrome results from an impaired blood flow from the SVC to the right atrium, it is associated with an intrathoracic malignancy causing compression or invading the SVC in 60–85% of the cases, and to benign causes such as intravenous catheter-associated thrombosis in 20–40% of the cases [1, 2]. Little is known about SVCS as a risk factor for UEDVT, or the possible association between both. This case highlights the importance of considering UEDVT in all patients with SVCS, and not automatically attributing UE edema to the presence of SVCS. The diagnosis of an UEDVT mandates therapeutic anticoagulation, changing the short- and long-term clinical management of the patient [2–5].

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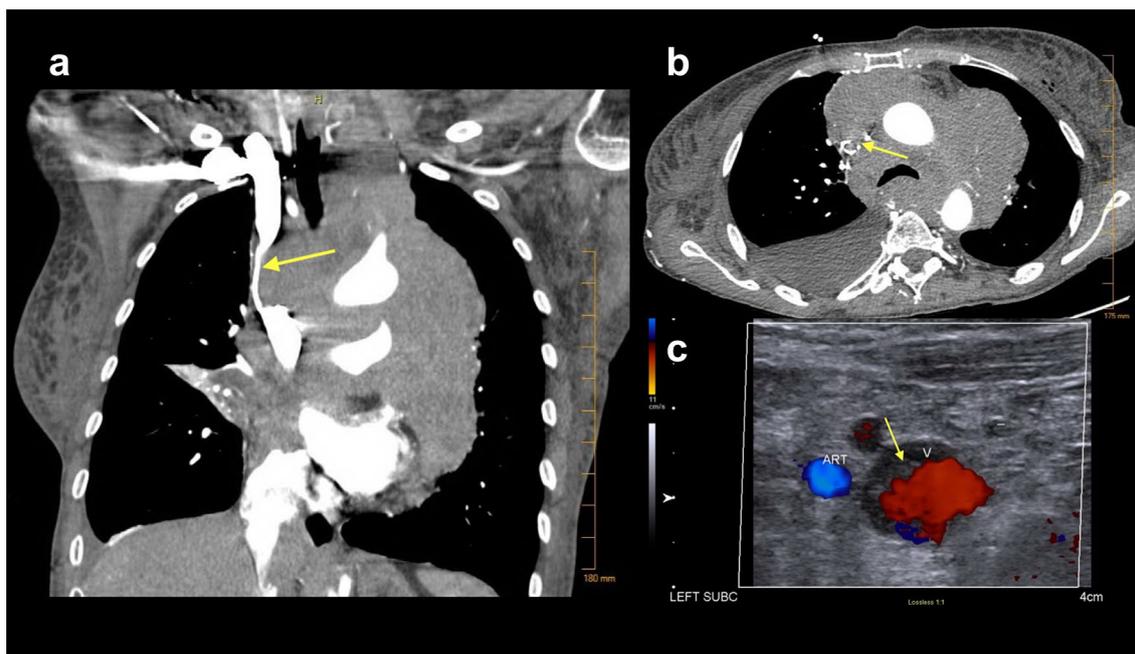


Fig. 1 **a** Coronal plane and **b** axial plane of the computed tomography of the chest showing a massive mediastinal and hilar lymphadenopathy producing high-grade stenosis of the superior vena cava

(arrow) consistent with superior vena cava syndrome. **c** Coronal plane of the left subclavian vein doppler ultrasound image showing a non-occlusive mural thrombus (arrow)

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Statement of human and animal rights This case image complies with the ethical standards outlined in the journal. It involved the medical management of a patient as per society guidelines and was in accordance with the ethical standards of the institution. This case was not formal research involving Human Participants and/or Animals.

Informed consent Informed consent was obtained.

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