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Hepatic Pseudo Lesion Secondary to Superior Vena Cava Thrombosis in a Patient with Behcet Disease

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Abstract

Hepatic pseudolesions are a result of hepatic blood flow imbalance. They may be easily misdiagnosed as malignant tumours. Accurate diagnosis of these pseudolesions is crucial in order to prevent unnecessary investigations and orient the medical approach. The present study outlines the case of a middle-aged male diagnosed with Behcet disease and found to have superior vena cava thrombosis with collateral circulation and a hyper-vascular pseudo-hepatic lesion.

Keywords: Pseudo nodular liver lesion; Superior vena cava thrombosis; Behcet disease; Vein of Sappey; Quadrate lobe hotspot

Introduction

Vein thrombosis is a common complication of Behcet disease, a systemic vasculitis [1]. The superior vena cava (SVC) is one of the possibly affected veins. In the latter case, the blood reaches the liver via a collateralizing system, and several venous ways are opened, including the veins of Sappey. This leads to a focal uptake in the left hepatic lobe's paraumbilical segments that can be detected on arterial-phase-enhanced CT without any actual morphological changes [2-4]. To avoid unnecessary investigation (liver biopsy) in the event of misinterpretation, this finding should be distinguished from focal liver masses.

Case Presentation

A 40-year-old male with Behcet disease who was suffering from recurrent dyspnea and chest discomfort was brought to the emergency department. The results of his physical examination revealed an elevated respiratory rate (26 breaths per minute) and a blood saturation of 88%. The thoracic inspection uncovered several clearly visible collateral veins, particularly on the right anterior chest wall. The patient underwent thoracic and abdominal CT-angiography, which revealed thrombosis of the SVC with many collateral veins of the lateral chest wall traversing the right diaphragm (Figure 1). Additionally, both the azygos and hemiazygos veins were dilated. A localized hypervascular wedge-shaped lesion was detected in segment IVa. This lesion was only apparent in the arterial phase (Figure 2) and was not found in delayed phases.

Discussion

Behcet disease is a systemic vasculitis that may involve any vessel in the body, including the SVC. In the case of obstruction, blood from the arm is redirected into numerous channels to avoid central venous obstruction [1]. These channels include main and accessory venous pathways that are often interconnected: the azygos-hemiazygos veins, the vertebral venous plexus route, the lateral thoracic pathway, and the internal and external thoracic pathways [1-3]. The anterior section of the abdominal wall is drained directly through the liver by three small veins: the superior vein of Sappey, the inferior vein of Sappey, and the vein of Burow. These veins form the epigastric-paraumbilical venous system and reside around the falciform ligament, which runs parallel to them. The superior vein of Sappey passes through the upper part of the falciform ligament and ends at the liver's convex surface to join the peripheral portal branch of the left hepatic lobe. It drains the medial diaphragm and the superior area of the falciform ligament and is also connected to branches of the

internal thoracic and superior epigastric veins. In the case of SVC obstruction, the blood will have to travel through this channel to reach the liver [2-4]. The collateral hepatopetal route formed between the SVC and the left portal vein leads to early enhancement and creates the “hot spot” or “Quadrate lobe hot spot” sign (quadrate lobe) [5].

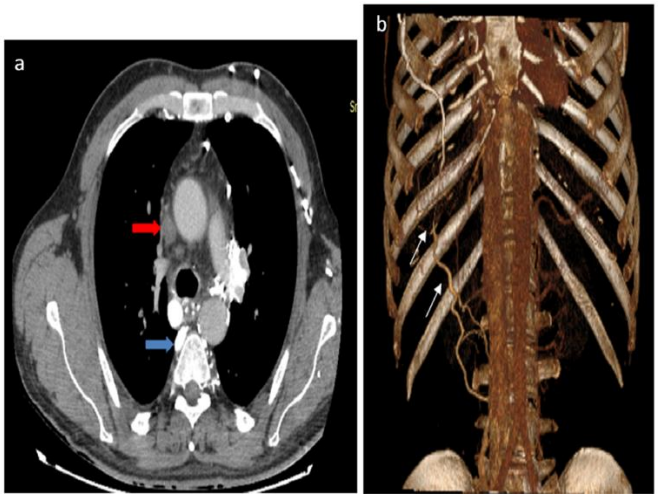

Figure 1: *a-Transverse CT scan through the level of upper mediastinum revealing a thrombosed SVC (red arrow) with dilated azygos vein (blue arrow). b- Coronal 3D-VR showing multiple anterior chest wall collaterals (white arrows).*

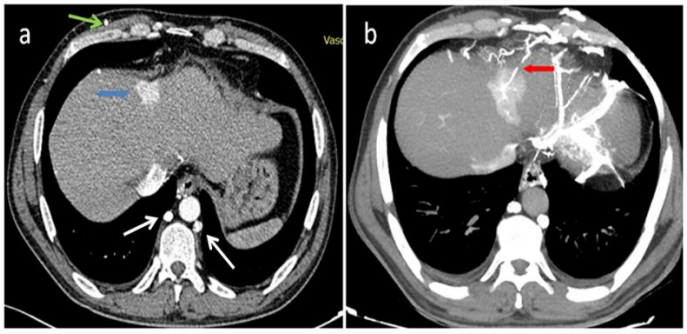

Figure 2: *a-Axial arterial-phase-enhanced CT image demonstrating a hypervascular focal enhancement (blue arrow) in segment IVa. Also, note the dilated azygos and hemiazygos veins (white arrows) in addition to cutaneous collaterals (green arrow). b- Axial MIP image shows an enhancing vessel (red arrow) feeding the pseudolesion (Vein of Sappey).*

If found in individuals with clinical evidence of SVC occlusion, this finding is very specific for central venous obstruction [5]. When performing liver CT, the arterial phase is the most optimal for evaluating liver pseudolesion. It appears as a subcapsular wedge-shaped lesion that has no mass effect, permitting normal vessels to cross through it. Nevertheless, the distinguishing characteristic is the enhancement of the vein feeding the pseudolesion [4-6]. The right hepatic vein may also connect to the superficial veins of the lateral thoracic walls through the subscapular vein. This can sometimes cause abnormal enhancement of segment VIII of the liver [1]. Diagnosing these pseudolesions in the liver is mandatory; especially in patients with cancer, misdiagnosing these pseudolesions as metastases might change the treatment radically [4]. They should be distinguished from vascular malformations such as hemangiomas, hypervascular metastases, hepatomas, and focal nodular hyperplasia [1].

Conclusion

Hepatic hypervascular pseudolesion may mimic focal liver tumours; their classic appearance should be recognized to avoid unneeded investigations and ought to guide evaluation of the chest for SVC thrombosis.

Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of this paper.

Author Contributions

All authors contributed equally to this work

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