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The Focal Hepatic Hot Spot Sign: Case Report

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Abstract | **Case Report**

The focal hepatic hot spot sign is a CT sign that appears as an intense enhancement of the quadrate lobe in the arterial phase. We present this imaging finding in a case of behcet disease causing superior vena cava syndrome and discuss the physiological cause and importance of this sign.

Keywords: Hot spot sign, Superior vena cava obstruction, Behcet's disease, computed tomography.

Learning points

The hot spot sign represent an indirect sign of superior vena cava obstruction that must be searched especially when clinical symptoms are unclear.

Clinical Image

A 36 year-old women followed for 5 years for a behcet's disease on treatement, presents for three weeks a plethoric face, swollen and marked superficial venous distention over his neck and chest, aggravated for three days by thoracic opression and dsypnea. A contrast enhanced CT of the chest in the arterial and venous phases was performed in our etablishment, which revealed a small-sized, non-opacified superior vena cava and right brachiocéphalic vein (figure 1-2), with numerous collateral vessels along neck, great vessels, mediastinum, internal mammary chain and anterior chest wall with an early enhancement of the IVC and dilation of the inferior phrenic vein (figure 3A-B). There was also the presence of a geographical area of intense focal enhancement in the medial segment of the left lobe(segment IVa) of liver seen on the arterial phase with partial washout but persistence on the portal phase, which is consistent with focal hepatic hot spot sign (figure 4). A diagnosis of occlusion of right brachiocephalic vein extended to superior vena cava due to behcet's disease was established.

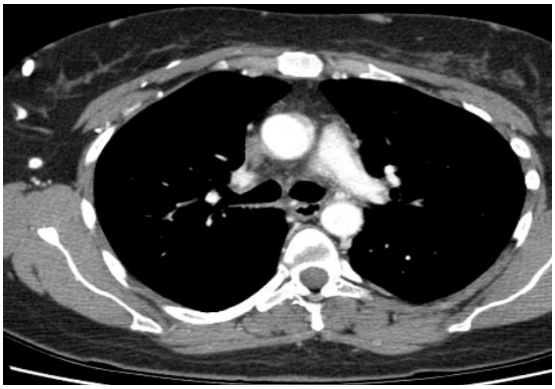

Fig-1: Axial view of enhanced chest CT showed a small-sized and non opacified superior vena cava

Fig-2: Coronal view showed a non opacified superior vena cava, and right brachiocéphalic vein

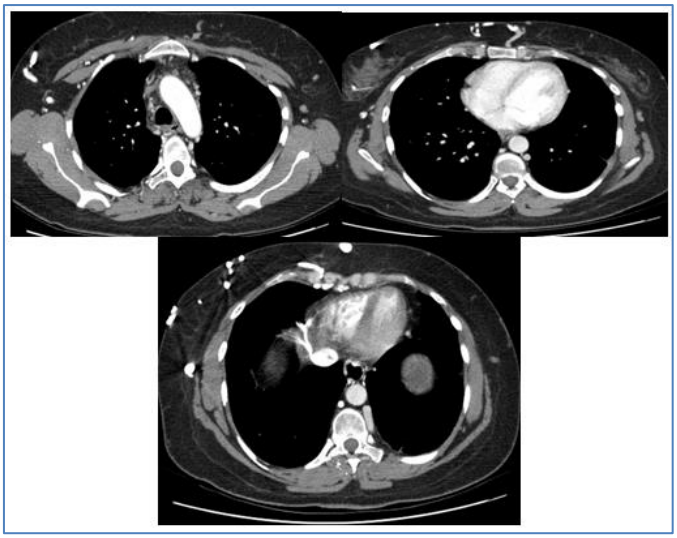

Fig-3: Axial views showed A) numerous collateral vessels, B) early enhancement of the IVC and and dilation of the inferior phrenic vein

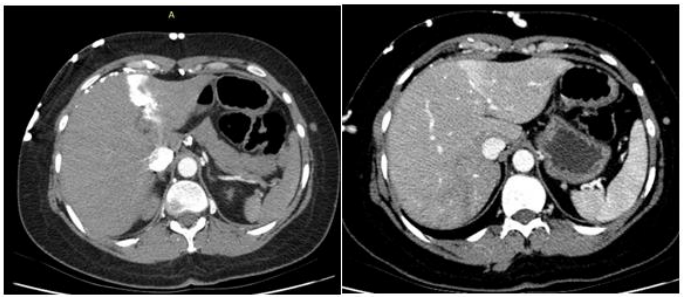

Fig-4: Axial views Contrast enhanced CT arterial (a) and portal (b) phase, showed the area of intense focal enhancement) in segment IV of liver that represents hepatic hot spot sign

DISCUSSION

The CT counterpart of this sign was first described by Ishikawa in 1983 and it manifests as an area of intense focal enhancement of the quadrate lobe in the arterial phase with opacification equal to or more than the aorta [1] which created by areas of focal increased blood flow that result from a porto systemic venous shunting between the superior vena cava and the portal vein. However, in a patient with superior vena cava obstruction, collateral veins return blood to the left hepatic lobe via the internal mammary and left umbilical veins, thereby creating a hot spot in the area of insertion of the left umbilical vein and left main branchesof the portal vein [2].

This sign has been reported in Budd–Chiari syndrome, the causes of SVC syndrome (neoplasms of the thorax as lung carcinoma and lymphoma, Vasculo-Behcet's disease, fibrosing mediastinitis, and luetic aneurysm), and masses of the liver (abscess, haemangioma, focal nodular hyperplasia, and hepatocellular carcinoma) [3].

In conclusion, the characteristic location, the wedge shape, arterial and venous phase characteristics and associated findings of collateral vessels make this lesion highly specific as an indicator of SVC syndrome [1].

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