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# Persistence of the Left Superior Vena Cava (PVCSG)

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**Abstract** **Case Report**

Persistence of the left superior vena cava (PVCSG) is a rare and benign congenital malformation. It is often asymptomatic and its discovery is in most cases fortuitous. We report the case of a patient in whom this anomaly was discovered following a monitoring assessment of a left breast nodule.45 yeas the physical examination on admission is normal. The electrocardiogram is without abnormalities. The chest x-ray showed a left middle arch in double contour. CT confirmed the diagnosis of PVCSG. Furthermore, the thoracic aorta was normal in these different segments.

**Keywords:** Persistence of the left superior vena cava, congenital malformation.



## INTRODUCTION

Persistence of the left superior vena cava (PVCSG) is a rare and benign congenital malformation. It is often asymptomatic and its discovery is in the majority of cases fortuitous [1]. We report the case of a patient in whom this anomaly was discovered following a monitoring assessment of a left breast nodule. 45 yeas the physical examination on admission is normal. The electrocardiogram is without abnormalities. The chest x-ray showed a left middle arch in double contour. CT confirmed the diagnosis of PVCSG.

## CASE REPORT

This is a 64-year-old patient in whom a thoracoabdominal CT scan; this anomaly was discovered following a monitoring assessment of left breast nodule.45 yeas the physical examination on admission is normal. The electrocardiogram is without abnormalities. The chest x-ray showed a left middle arch in double contour. CT confirmed the diagnosis of PVCSG. Furthermore, the thoracic aorta was normal in these different segments.

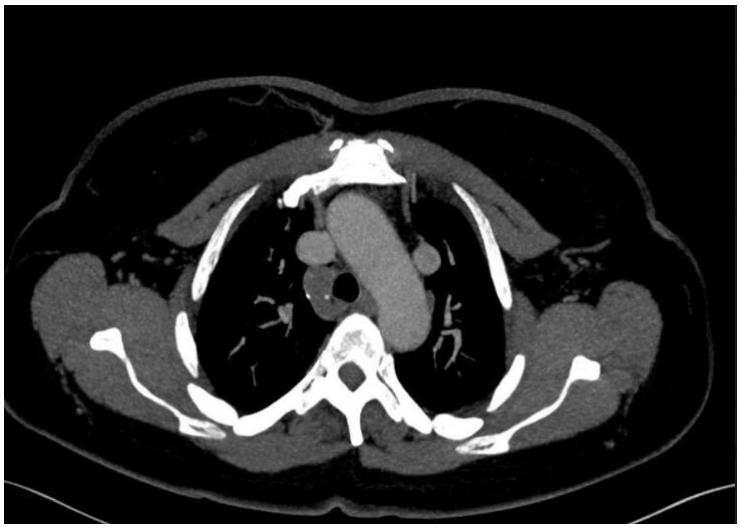

**Fig-A: Double right and left cellar system (arrows) Thoracic CT angiography performed in helical acquisition with axial slices of 5 mm**

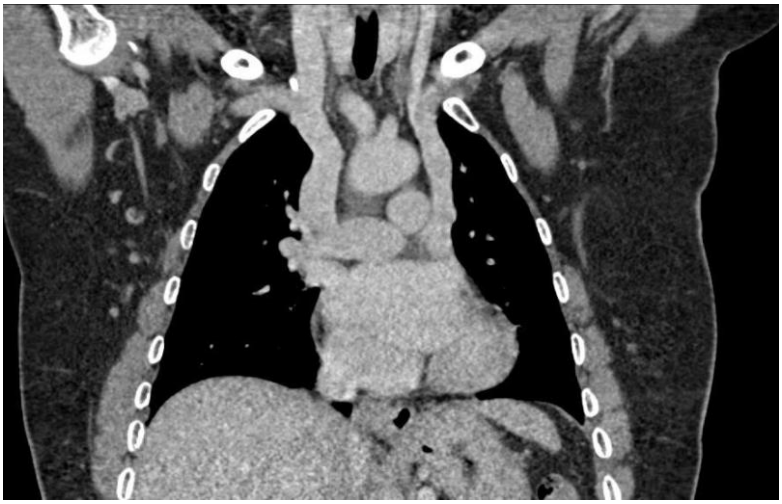

**Fig-b: Double right and left cellar system (arrows) Thoracic CT angiography performed in helical acquisition with coronal slices of 5 mm**

## DISCUSSION

The left superior vena cava is found in 0.3% of the general population, and up to 10% of patients with congenital heart disease [1], which is the case with two of our patients. It is often discovered incidentally in asymptomatic patients and is one of the abnormalities congenital vena cava systemic venous returns. In the normal state, the latter is the result of two even and symmetrical venous networks: the common cardinal veins and the anterior cardinal veins. Persistent GBV results from the absence of involution of the left anterior cardinal vein [2]. Depending on the degree of involution of the right anterior cardinal vein, we can have a double vena cava system (90% of cases) It travels in front of the left branch of the pulmonary artery to open at the level of the right atrium through a dilated coronary sinus[2]. In 8% of cases, the left SCV joins the left atrium directly, through a roofless coronary sinus, or through a coronary sinus-like interatrial communication [3]. When it drains in the left atrium, it can be the cause of a right-left shunt responsible for cyanosis and exertional dyspnea [4].

The morphological diagnosis of a persistent VCSG is a matter of cardiovascular imaging, which has experienced great growth thanks to the development of the multibarette scanner and cardiac MRI. The standard radiograph is most often normal or may show an enlargement of the left upper mediastinal space. Due to its extracardiac thoracic situation, GBV remains difficult to detect on echocardiography. The color Doppler allows, however, to optimize this examination and to detect a dilated coronary sinus [5]. The use of transthoracic ultrasound is often necessary to guide the implantation of a pacemaker when GBV is previously diagnosed [6]. VSCG is often found incidentally when performing a thoracic CT scan with injection of contrast product, which was the case for our 2 patients. Thus the diagnosis is made by the demonstration of a left mediastinal tubular opacity located in front of the aortic arch draining at the level of the coronary sinus and exhibiting vascular-type contrast uptake [5]. MRI can easily, on axial and coronal slices, show a left superior vena cava in the form of an abnormal vascular structure contiguous to the left flank of the aortic arch. The small axis sections, moreover, confirm the drainage of the aberrant vessel in a dilated coronary sinus [7].

## CONCLUSION

In conclusion, PLSVC is the most common thoracic venous anomaly known to be mostly asymptomatic. However, contrary to common misconception, it may cause a number of clinically significant symptoms, even in a heart with normal anatomy. Likewise, it may significantly affect the proper approaches to heart transplantations, effective surgical treatments for complex cardiac anomalies, and ablative procedures for cardiac arrhythmias. Thus, it should be recognized correctly and reported explicitly in radiological reports, even when it is an incidental finding. Besides, it is important to be aware of differential diagnoses of PLSVC and their radiological features to correctly interpret the vascular structures on the left side of the mediastinum.

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