

Image in cardiology

Isolated Anomaly of the Systemic Venous Return



Anomalía aislada del retorno venoso sistémico

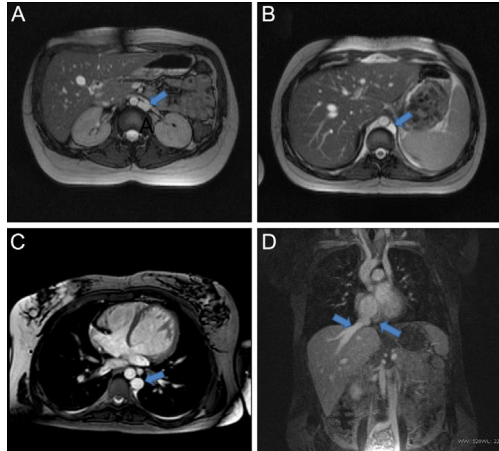
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Figure 1.

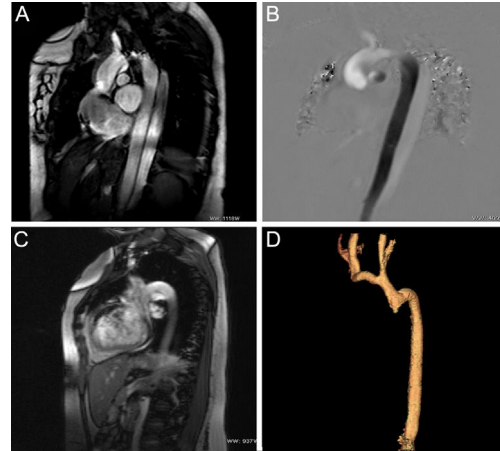


Figure 2.

A 17-year-old woman with no relevant medical history was referred to our cardiology unit due to atypical chest discomfort. After echocardiographic observation of dilatation of the coronary sinus, cardiac magnetic resonance imaging performed to complete the study revealed absence of the right inferior vena cava (VC), direct drainage of the suprahepatic veins into the right atrium, and a blood vessel to the left of the abdominal aorta (left inferior VC) that continued through the chest along the hemiazygos veins (Figure 1A-D). A sagittal cine sequence showed that this vessel ran upward, parallel and to the left of the aorta (Figure 2A), and flowed to the right cardiac chambers, as shown on the phase-contrast sequence (Figure 2B). Three-dimensional volume-rendered magnetic resonance angiography revealed the absence of the right superior VC and a persistent left superior VC that communicated with the hemiazygos, forming a common collector that emptied into the coronary sinus (Figure 2C-D). The cardiac magnetic resonance imaging also allowed us to rule out the presence of intracardiac shunts or associated complications.

A persistent left superior VC is the most frequent systemic venous anomaly and should be suspected upon detection of a dilated coronary sinus. The association of this persistent vein with this type of congenital abnormality of the inferior VC is very rare, and it can sometimes be associated with septal defects or heterotaxy syndromes.

Although infrequent, this anomaly can have complications, such as ureteral compression or compression of the inferior VC between the mesenteric artery and the aorta (nutcracker syndrome), which increases the risk of deep vein thrombosis.

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