Persistent Left Superior Vena Cava

Joaquim M. Motta-Leal-Filho, MD, PhD, Carlos A. O. Motta, MD, Bruna F. Pilan, MD, and Breno B. Affonso, MD

Radiology Department, Heart Institute (InCor), University of São Paulo, São Paulo, Brasil

A 25-year-old man underwent venography for pacemaker exchange. He had undergone a cardiac surgical procedure for correction of an interatrial communication at 2 years of age and pacemaker implantation for sick sinus syndrome at 14 years of age. Injection of contrast material into the left arm vein revealed a persistent left superior vena cava (PLSVC) (Fig 1, black arrow) draining directly into the coronary sinus (Fig 1, dashed black arrows). Contrast appears in the coronary sinus before appearing in the right atrium (Fig 1). An injection into the right arm vein revealed normal transit of contrast medium, with opacification of the right subclavian vein (Fig 2, dashed white arrow) and right superior vena cava (Fig 2, white arrow). An intercardinal anastomosis, ie, between the PLSVC and the right superior vena cava, was not seen (Fig 3).

PLSVC is a rare intrinsically cardiac anomaly, which can lead to serious complications during catheterization through the left subclavian or internal jugular veins. PLSVC results if the left anterior ventral cardinal vein persists and the common cardinal vein and the proximal portion of the right cardinal vein are obliterated. The PLSVC drains the blood into the right atrium through the coronary sinus. It was first described in 1850 by Marshall [1], and the frequency is about 0.3% to 0.5% in the general population. This venous anomaly is usually detected incidentally and can be associated with congenital cardiac anomalies. Nevertheless, it can create difficulties during central venous and pulmonary artery catheterization.

Reference