

# Isolated Persistent Left-sided Superior Vena Cava

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**P**ERSISTENT left-sided superior vena cava (PLSVC) is a congenital cardiac anomaly, occurring in 0.3 to 0.5% of the population and even more frequently in patients with other congenital cardiac conditions.<sup>1,2</sup> Typically the PLSVC drains into the right atrium

via an enlarged coronary sinus, but occasionally drainage into the left atrium can occur.<sup>3</sup> This image illustrates the rarer case of a PLSVC with concomitant absence of the right superior vena cava. The entire upper body venous drainage is through the PLSVC into an enlarged coronary sinus (*left* panel, SVC = superior vena cava).

In this case the abnormal anatomy was identified on preoperative imaging, so no attempt was made to float the pulmonary artery catheter through either jugular vein, because the tortuous path may have resulted in difficulty or failure. Instead, a right internal jugular central line was inserted for drug delivery, and the pulmonary catheter was inserted femorally. Transesophageal echocardiography confirmed the anatomy whereby agitated saline injected into the right upper extremity was noted to enter the right atrium via the coronary sinus (not shown). The enlarged coronary sinus can be observed emptying into the right atrium (*right* panel).

PLSVC is generally asymptomatic and is usually discovered incidentally on imaging with a computed tomography angiogram or a chest radiograph after central venous catheter insertion. Clinical implications include difficult insertion of central venous catheters and pacemakers. A susceptibility to arrhythmias and sudden death may exist because of stretching of the atrioventricular junction attributed to the enlarged coronary sinus.<sup>3</sup> Delivery of retrograde cardioplegia into the coronary sinus may be ineffective.

## Competing Interests

The authors declare no competing interests.

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