Medical Image of the Week: Duplicate Superior Vena Cava

Figure 1. AP chest X-ray demonstrating duplicate superior vena cava (SVC) with central lines in both the right and left superior vena cava (arrows at catheter tips). The chest x-ray shows the characteristic left-sided course of the catheter passing through a persistent left SVC (straight arrow).

Figure 2. Contrast enhanced CT of chest revealing left-sided SVC (arrow).
A persistent left SVC is the most common thoracic venous anomaly and usually opens into the right atrium via the coronary sinus. A central line inserted into the left SVC may be mistaken for placement in other sites such as the subclavian or carotid artery, the mediastinum, the pericardium or pleural space. A duplicate SVC may cause difficulty in introducing central venous catheters or pulmonary artery catheters because of the narrow opening of the coronary sinus to reach the right atrium. In addition, a duplicate SVC is associated with important cardiac conditions such as atrial septal defects and ventricular arrhythmias.

Dena L’Heureux MD, Josh Malo MD and Linda Snyder MD
Division of Pulmonary, Allergy, Critical Care and Sleep Medicine
University of Arizona
Tucson, AZ