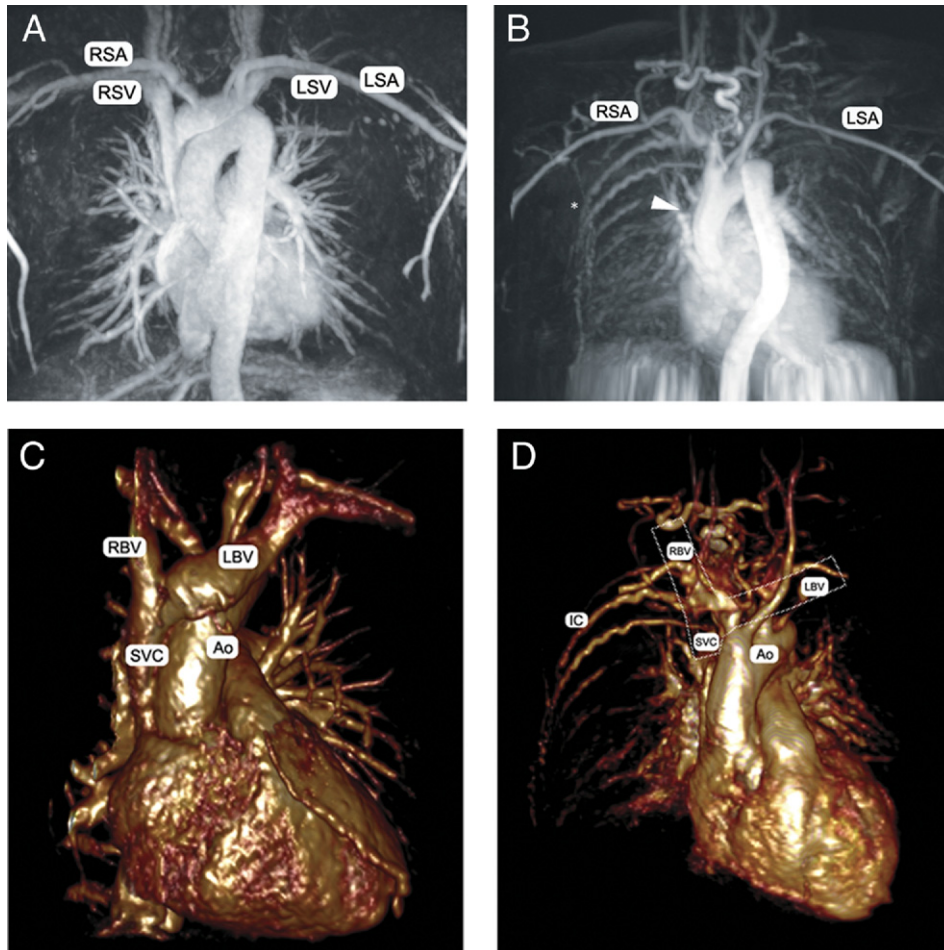


IMAGES IN CARDIOLOGY

Complete Superior Vena Cava Obstruction

Satish R. Raj, MD, MSCI,*† Jeffrey M. Dendy, MD,*‡ Jeffrey N. Rottman, MD*†

Nashville, Tennessee



From the Departments of *Medicine, †Pharmacology, and ‡Biomedical Engineering, Vanderbilt University School of Medicine, Nashville, Tennessee. Dr. Raj is supported by National Institute of Health grant K23 RR020783. Dr. Rottman has received support for the Cardiac Arrhythmia Fellowship program from Medtronic Inc., St. Jude Medical, Boston Scientific Inc., and Biotronik Corporation. Manuscript received August 7, 2009; accepted September 8, 2009.

Magnetic resonance venography was performed to better understand venous anatomy in a woman with failed pacemaker implantation. Compared with a healthy subject (A), her maximal intensity projection images (B) showed an absent superior vena cava (SVC [arrowhead]). The right subclavian vein (RSV) and left subclavian vein (LSV) were absent, although bilateral right subclavian arteries (RSA) and left subclavian arteries (LSA) were preserved. Upper body collateral drainage occurred through paravertebral veins, the azygous vein, and enlarged intercostal veins (*), appearing similar to arterial “rib notching” that is seen with aortic coarctation (B). Magnetic resonance imaging 3-dimensional reconstructions (healthy subject [C, [Online Video 1](#)] and patient [D, [Online Video 2](#)]) show the distorted venous anatomy. In addition to enlarged intercostal veins (IC), our patient has a “bare” aorta (Ao), without superimposed SVC and right brachiocephalic vein (RBV) and left brachiocephalic vein (LBV). A cardiac resynchronization system was successfully implanted through an iliofemoral vein. With increased percutaneous interventions, cardiologists will likely confront similar anatomy in the future.