

Cardioverter-Defibrillator Implantation Through Persistent Left Superior Vena Cava

Implante de Cardioversor-Desfibrilador Através da Veia Cava Superior Esquerda Persistente

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Case

A 72-year-old woman with hypertension was admitted for sudden cardiac arrest secondary to idiopathic ventricular fibrillation. Cardiac magnetic resonance disclosed a persistent left superior vena cava (PLSVC) without other cardiovascular abnormalities for which an implantable cardioverter-defibrillator (ICD) was proposed with left access. Intraoperatively, cephalic vein cannulation placed the wire in the PLSVC that drained in the coronary sinus and subsequently the right atrium. A wide loop maneuver placed the lead tip facing the tricuspid valve, and right ventricle access was obtained with successful positioning of the ventricular lead. Device parameters were checked and considered suitable, and the procedure was finalized with active fixation, a fluoroscopy time of 1.35 minutes, and a radiation dose of 143.12 $\mu\text{Gy}/\text{cm}^2$. Normal pacing parameters were present at the 3-year follow-up.

PLSVC is a congenital venous anomaly present in 0.5% of the general population that is usually asymptomatic and

incidental on invasive procedures or imaging. Although not a contraindication to ICD, lead placement is challenging because it has to negotiate two bends, one at the coronary sinus and the other in the tricuspid valve. Stylet shaping or wide loop techniques are reliable and present good outcomes not affecting pacing parameters on long-term follow-up.

Authors' contributions

Research conception and design: Gonçalves L, Pires I, Santos J, Correia J; data collection: Gonçalves L, Santos J; data analysis and interpretation: Gonçalves L, Costa A; manuscript writing: Gonçalves L; critical review of the manuscript for important intellectual content: Gonçalves L, Pires I, Costa A.

Conflict of interest

The authors have declared that they have no conflict of interest.

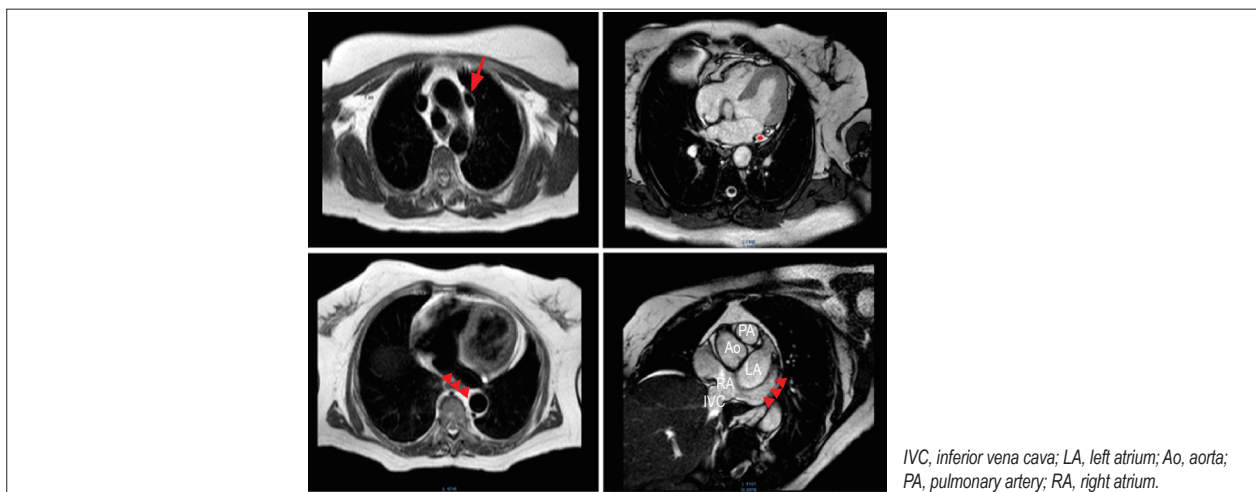


Figure 1 – Cardiac magnetic resonance imaging showing persistent left superior vena cava (arrow) draining into a dilated coronary sinus (star and arrowheads) and subsequently the right atrium.

Keywords

Ventricular Fibrillation; Cardioverter-Defibrillators, Implantable; Magnetic Resonance Imaging.

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Figure 2 – X-ray of the thorax after cardioverter-defibrillator implantation showing the left parameastinal path of the ventricular lead.