

Title:

Biventricular Implantable Cardioverter Defibrillator Placement from a Persistent Left Superior Vena Cava

Authors:

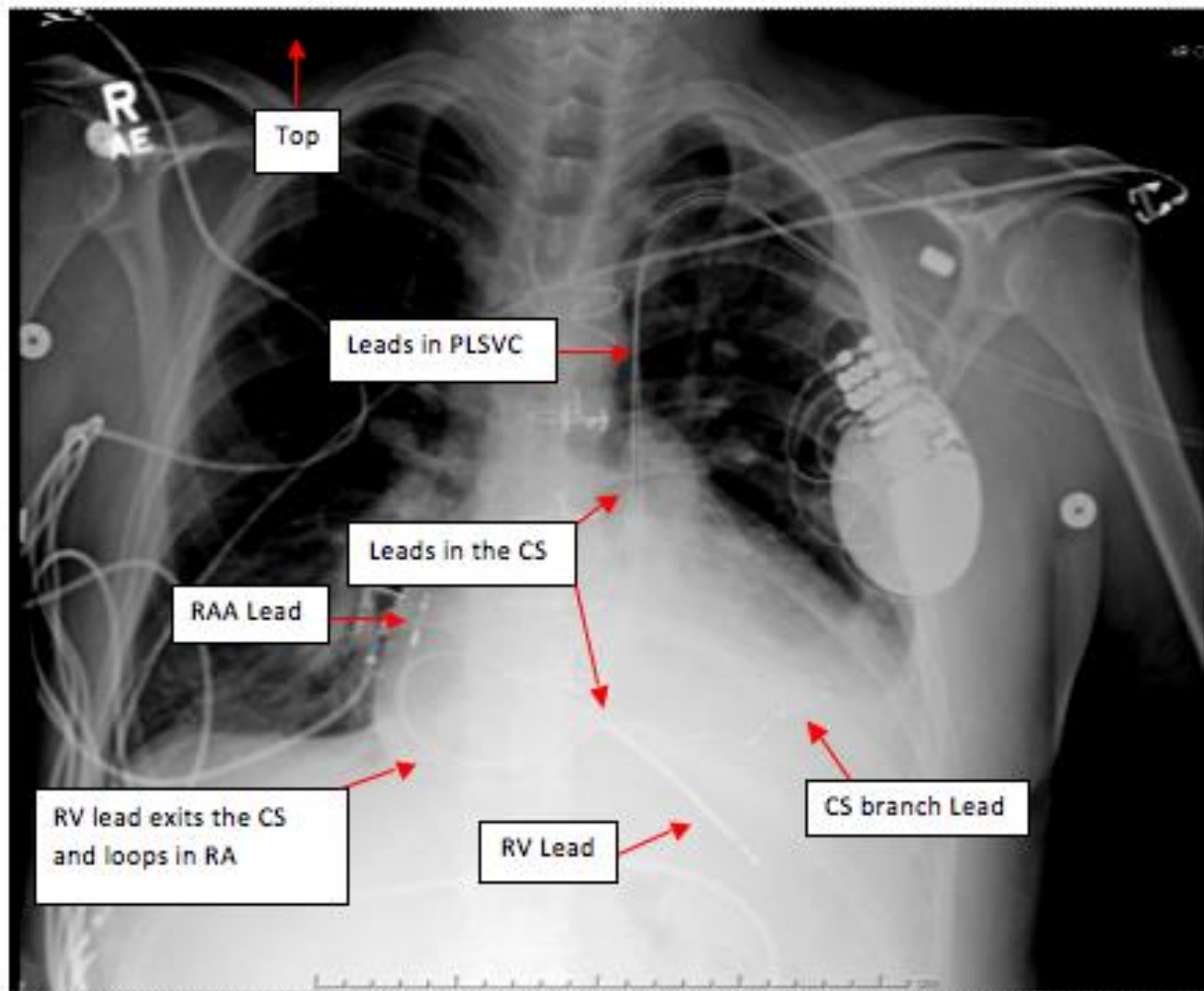
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Abstract:

Persistent left superior vena cava can create technical challenges during implantation of pacing devices; which, in the majority of cases, are implanted on the left side. We present a chest x-ray of a patient with a left-sided biventricular implantable cardioverter defibrillator placement through a persistent left SVC.

Figures/Videos:



Word Limit (no more than 500 words):

A 51 year old male, with a history of nonischemic cardiomyopathy (left ventricular ejection fraction of 30%), a left bundle branch block, and recurrent admissions for heart failure, presented for biventricular implantable cardioverter defibrillator placement for primary prophylaxis and cardiac resynchronization therapy. During placement, the patient was noted to have a persistent left superior vena cava (PLSVC). PLSVC is the most common venous cardiac anomaly, and drains directly into the coronary sinus (CS) then through the CS to the right atrium (RA). This congenital anomaly complicates device placement – which, in majority of cases, are implanted on the left side - as the lead projection coming out of CS is directed away from the tricuspid valve. Although many operators would abandon implantation from the left side for this reason, and implant the cardiac device on the right, there are times where this is not possible.

In this case, the cardiac device was placed on the left; and we present a chest x-ray with lead placement through a PLSVC. We believe that the intravascular course of the leads fittingly outline the regional anatomy of this particular patient. The leads are seen coming down the PLSVC to the CS and exiting to the RA. The RA lead is actively fixated in the posterolateral wall of the RA whereas the right ventricular (RV) lead loops in the RA in order to change direction and cross the tricuspid valve. It is then actively fixated in the RV apical septum. The LV lead is placed in a mid lateral branch of the enlarged main CS.

Correct recognition and interpretation of this congenital abnormality with simple chest radiography is pivotal. This image demonstrates the anatomical intricacies of lead placement of a biventricular implantable cardioverter defibrillator placement through a PLSVC.

References:

Campbell M., Deuchar D.C. The left-sided superior vena cava. *Br Heart J* 16:423–439.