Persistent Left Superior Vena Cava in a Patient with Congenital Heart Disease

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LETTER TO THE EDITOR

A 40-year old man with a history of surgically corrected congenital infundibular pulmonal stenosis and subvalvular membranous aortic stenosis presented with symptomatic sick sinus syndrome. Sick sinus syndrome may be related to stretching of the atrioventricular node and bundle of His, often a result of changed hemodynamics due to the underlying congenital disease. Implantation of a DDDR pacemaker was initiated, but positioning of the pacemaker leads proved to be difficult while pushing the lead forward. Radiographic imaging with contrast media was performed, revealing a persistent left superior vena cava (PLSVC). In knowledge of the abnormal anatomy, placement of the atrial and ventricular leads was still challenging but could be completed using fluoroscopy without major problems. The chest radiograph after the procedure showed a left-sided path of both pacemaker leads *via* the PLSVC (**arrowheads**), with correct position of the tips in the right atrium (**open arrow**) and in the right apical ventricle (**arrow**), suggesting connection with the right atrium (Fig. **1**).

PLSCV is the most common variation in the thoracic venous system and present in about 0.5 % of the normal population. Its incidence is even higher in patients with congenital heart disease (2-5%), particularly in those with pulmonary stenosis, atrioventricular septal defects and D-transposition [1]. PLSCV usually drains into a dilated coronary sinus but may alternatively be connected to the right or left atrium [2]. Various imaging studies, including echocardiography, computed tomography and magnetic resonance tomography can help to detect this vascular anomaly [3]. However, inexperienced examiners may miss PLSCV. In the present case, PLSCV had not been known from earlier angiographic or echocardiographic studies, e.g. prior to heart surgery. A possible explanation might be the younger age of the patient at the time of surgery with less prominent features of PLSCV or the physicians approach with focus on the main congenital heart defect, thereby missing the vascular anomaly. In fact, even in patients with congenital heart disease, diagnosis of PLSCV is often the result of an incidental finding during diagnostic and therapeutic procedures, such as central vein placement, pacemaker lead insertion or right heart catheterization [4]. Physicians should be aware of this anomaly and possible approaches in case of unexpected problems with central venous access [5].

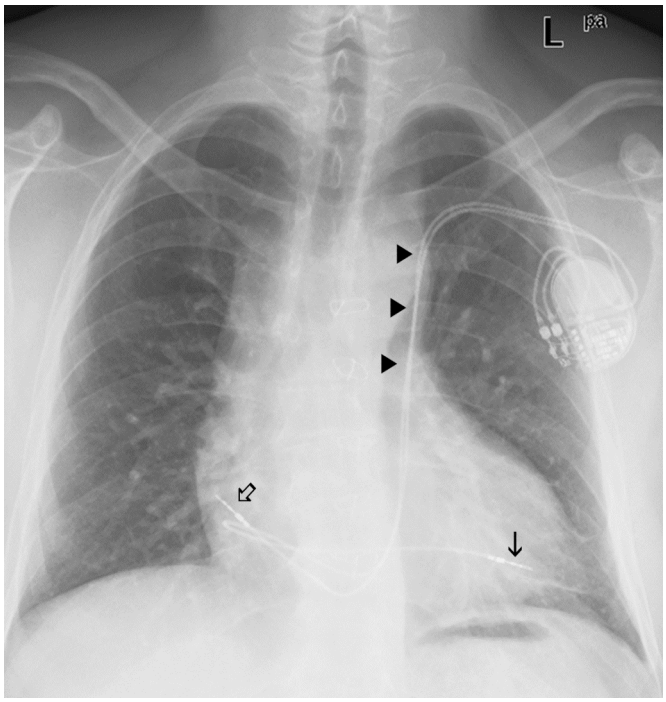

Fig. (1). The chest radiograph after the procedure showed a left-sided path of both pacemaker leads via the PLSVC (**arrowheads**), with correct position of the tips in the right atrium (**open arrow**) and in the right apical ventricle (**arrow**), suggesting connection with the right atrium.

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