

Late diagnosis of a sinus venosus defect allowed by atrial fibrillation ablation

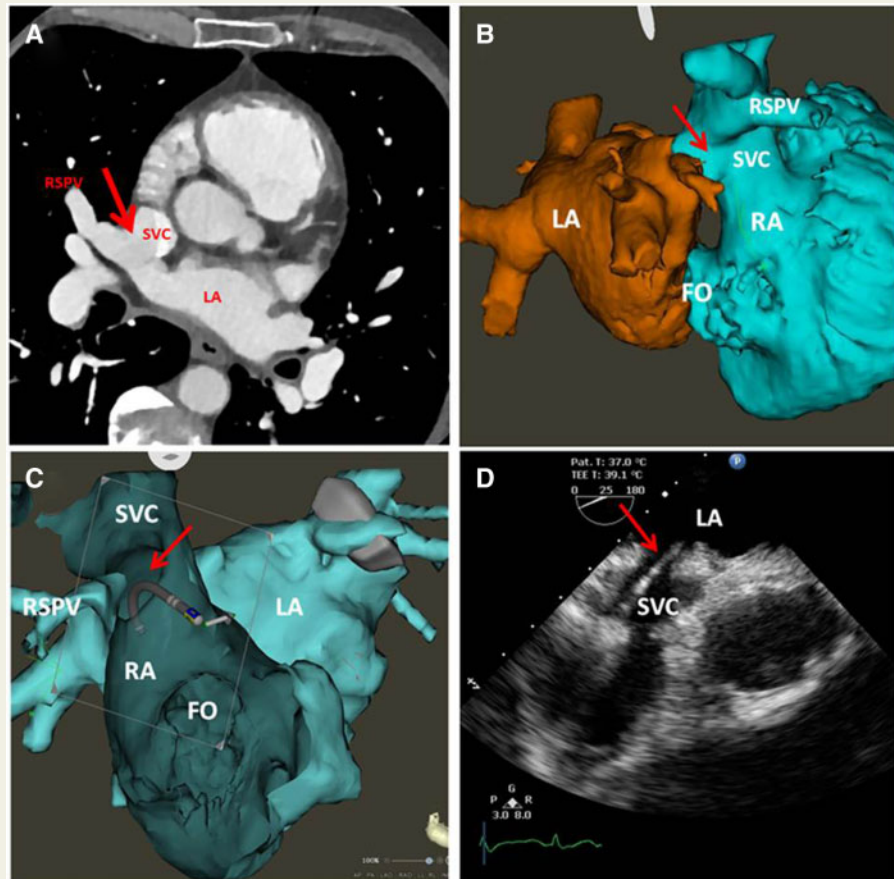
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A 70-year-old man underwent atrial fibrillation (AF) ablation. He had been known for several years with mild and asymptomatic right heart dilatation of unknown origin.

Chest computed tomography (CT) scan, systematically done before pulmonary vein isolation, suspects a partial anomalous pulmonary venous drainage with sinus venosus defect, an absence of the wall that normally separates the right superior pulmonary vein (RSPV) from the superior vena cava (SVC) (Panel A, axial plane, red arrow indicates the zone of the defect; LA, left atrium). Panel B shows a 3D reconstruction of the CT scan (right lateral view; FO, fossa ovalis; RA, right atrium).



For the ablation procedure, using a classical approach with transeptal puncture, we reconstructed a 3D shell of the LA and the pulmonary veins (with 3D electroanatomical mapping system), which confirmed the defect. Reconstructed 3D shell (Panel C, right anterior oblique view from inside the right atrium) and periprocedural transoesophageal echography (Panel D, loop 1 in the supplementary data) illustrate the 'loop' of the ablation catheter coming back from the LA to the SVC via the defect. There was not any interatrial septal defect as sometimes associated.

The originality of this case resides in

- The atypical way of diagnosis of the sinus venosus defect, allowed by the AF ablation procedure, with 3D reconstruction of the defect.
- The impossibility to electrically isolate the RSPV. After classical anatomical enclose of the right pulmonary veins, the RSPV remained connected at least with the right atrium (isolation of those veins from the LA could not be affirmed for certain).

Supplementary data are available at *European Heart Journal - Cardiovascular Imaging* online.