

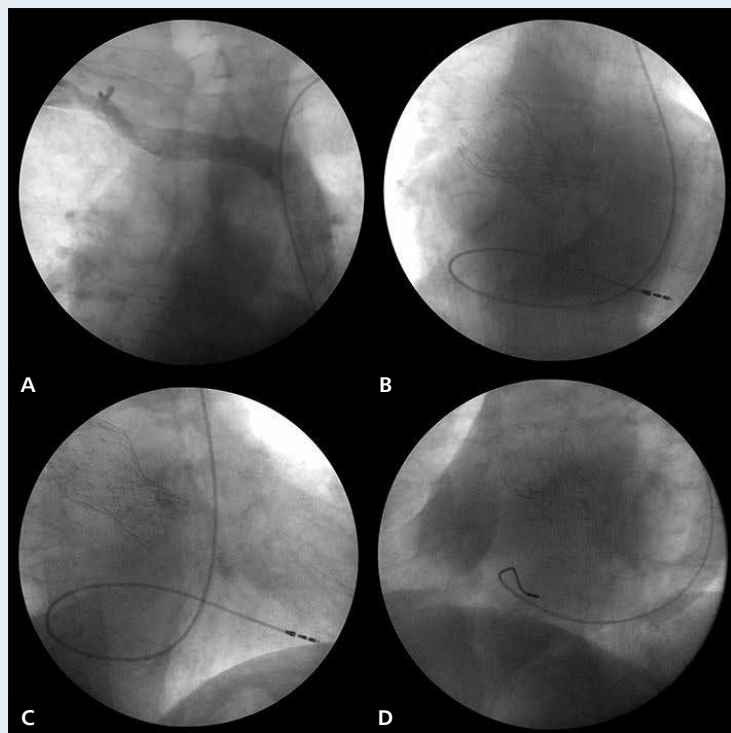
# Unexpected finding of a single persistent left superior vena cava during medical events following transcatheter aortic valve implantation

Przetrwała lewostronna żyła główna górna w połączeniu z atrezią prawej żyły głównej górnej u chorego po przeszłorocznej implantacji zastawki aortalnej

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The increase in invasive cardiac procedures has resulted in more common detection of asymptomatic vascular anomalies, such as persistent left superior vena cava (PLSVC). Pacemaker implantation due to atrioventricular (AV) conduction disturbances following transcatheter aortic valve implantation (TAVI) is necessary in about 40% of these procedures. PLSVC is present in about 0.3–0.5% of the population, more commonly in patients with congenital heart disease (3–10%). PLSVC with atresia of the right superior vena cava (RSVC) is seen in only 10–15% of patients with these systemic venous anomalies. In a 67-year-old man, a 29-mm Medtronic CoreValve was implanted during a TAVI procedure for severe aortic stenosis. The procedure was complicated by left bundle branch block within chronic atrial fibrillation and AV conduction disturbances that required temporary pacing and ultimately insertion of a permanent pacemaker. During pacemaker implantation, after contrast agent administration for imaging of the venous system in the anteroposterior view, an absence of the RSVC was noted. This led to the diagnosis of a single PLSVC (Fig. 1A–D). Contrast agent injection to peripheral veins of the right arm revealed uninterrupted passage from the right to the left side of the chest via the brachiocephalic veins directly to a PLSVC without opacification of the RSVC (Fig. 1A), and then to a large coronary sinus (Fig. 1B). The pacemaker lead was introduced into the right ventricle using an alpha-shaped guidewire, and its final position is shown in the left and right anterior oblique views (Fig. 1C, D). To the best of our knowledge, this is the first reported case of single PLSVC detected in such a clinical scenario.



**Figure 1.** Visualisation of selected stages of the procedure; **A, B.** Anteroposterior projection; **A** — Continuous flow of the contrast agent from right arm veins via the brachiocephalic veins to the left superior vena cava (LSVC) and atresia of the right superior vena cava; **B** — Flow of the contrast agent from the LSVC to the coronary sinus and the right atrium; **C, D.** Evaluation of the lead position in the cardiac system; **C** — Left anterior oblique view, **D** — Right anterior oblique view

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**Conflict of interest:** none declared