

Single coronary artery in an orthotopically transplanted heart

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A 63-year-old man with dyslipidemia, peripheral arterial disease, and hypertension underwent orthotopic heart transplantation due to ischemic cardiomyopathy. Transthoracic echocardiography showed fluctuations of the left ventricular ejection fraction from 37% up to 60%. No signs of rejection were detected in serial cardiac biopsies. Coronary angiography showed a functional single coronary artery (SCA) arising from the right sinus of Valsalva (SoV) and only a tiny branch originating from the left SoV, otherwise without significant lesions (FIGURE 1A–1C; Supplementary material, *Videos S1* and *S2*). Coronary computed tomography angiography (CTA) was performed to assess precisely the course of the coronary arteries and to estimate possible impact on the fluctuation in left ventricular ejection fraction. It revealed a SCA originating from

the right SoV dividing into 2 branches: the left anterior descending artery (LAD) with its course anterior to the pulmonary trunk and the right coronary artery (FIGURE 1D and 1E; Supplementary material, *Video S3*). The small branch originating from the left SoV, which was visualized by coronary angiography, was not visible on CTA. Additionally, myocardial bridging of the LAD was found (FIGURE 1E). The patient was otherwise in good condition. Follow-up CTA after 8 years did not show any signs of significant coronary lesions. During 10 years of follow-up, the patient remained clinically stable.

As the branch originating from the left SoV was very small and could qualify neither as LAD nor the left circumflex artery, the patient was diagnosed as having a functional SCA arising from the right SoV. Although SCA is usually

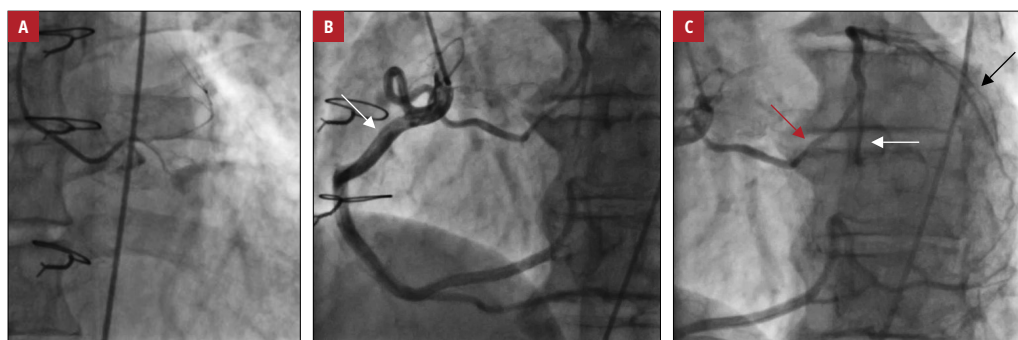


FIGURE 1 Angiography showing: **A** – a tiny branch originating from the left sinus of Valsalva (SoV); **B** – the proximal and mid segment of the dominant right coronary artery (RCA) (arrow); **C** – the left anterior descending artery (LAD) (red arrow) and the distal segment of the LAD (white arrow), the circumflex artery (black arrow)

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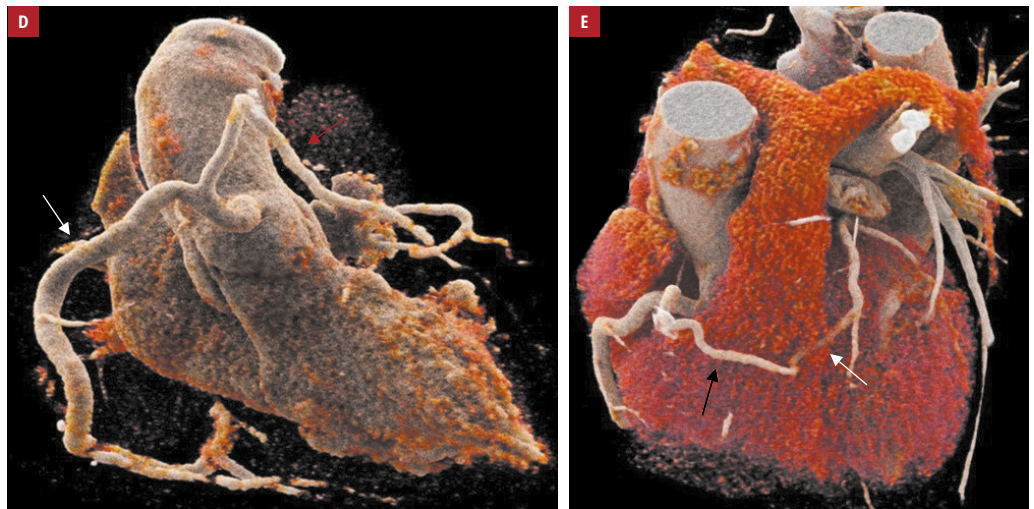


FIGURE 1 Computed tomography angiography showing: **D** – the dominant RCA originating from the right SoV (white arrow), LAD (red arrow); **E** – LAD (black arrow) located anterior to the pulmonary trunk with myocardial bridging (white arrow).

asymptomatic, occasionally symptoms like dyspnea, chest pain, palpitations, or syncope may be experienced.¹ SCA is not a contraindication for orthotopic heart transplantation, unless potentially fatal and not correctable coronary anomaly exists. During the heart procurement procedure, precise evaluation of the coronary arterial orifices may be difficult due to limited visibility. To our knowledge, this is the first report of a functional SCA in a transplanted heart.

SUPPLEMENTARY MATERIAL

Supplementary material is available at www.mp.pl/kardiologiapolska.

ARTICLE INFORMATION

CONFLICT OF INTEREST None declared.

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