

# Right pulmonary artery aplasia with coronary collaterals supplying a hypoplastic lung

Aplazja prawej tętnicy płucnej z krążeniem obocznym od tętnicy wieńcowej zaopatrującym hipoplastyczne płuco

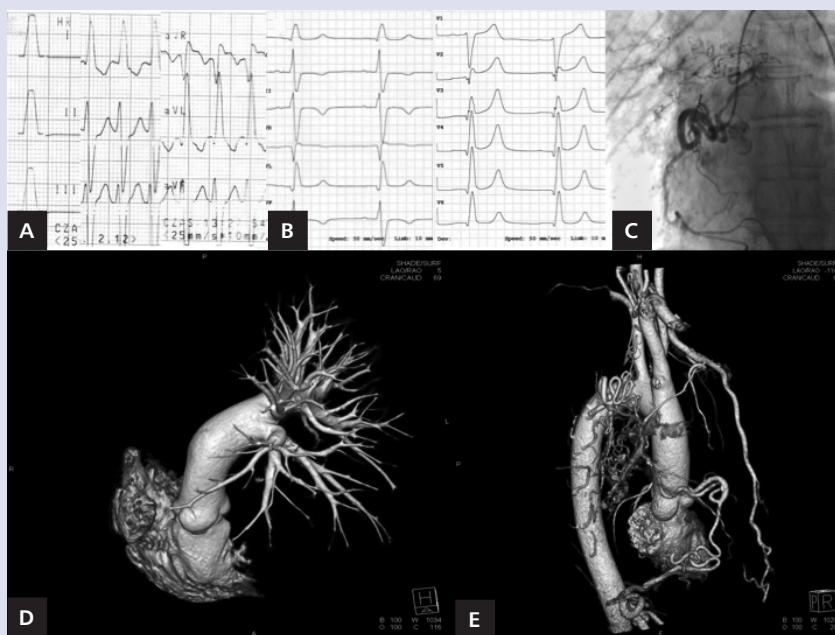
Izabela Wojtkowska<sup>1</sup>, Łukasz A. Małek<sup>2</sup>, Tomasz Oleksiuk<sup>3</sup>, Janina Stępińska<sup>1</sup>

<sup>1</sup>Department of Intensive Cardiac Care, Institute of Cardiology, Warsaw, Poland

<sup>2</sup>Department of Interventional Cardiology and Angiology, Institute of Cardiology, Warsaw, Poland

<sup>3</sup>Department of Radiology, Institute of Cardiology, Warsaw, Poland

A 55-year-old man, a tobacco smoker, was admitted to the Intensive Care Unit (ICU) after an episode of supraventricular tachycardia with a ventricular rate of 170 bpm (Fig. 1A) accompanied by chest pain and dyspnoea. The arrhythmia was terminated by the intravenous administration of amiodarone with a complete cessation of symptoms. Initial ECG in the ICU showed sinus rhythm of 60 bpm with left bundle branch block and negative T-waves in leads II, III, aVF (Fig. 1B). Troponin I was markedly elevated (0.12 ng/mL, reference value 0.033 ng/mL). Transthoracic echocardiography demonstrated hypokinesis of the inferior wall with a left ventricular ejection fraction of 45%. The patient was referred for coronary angiography, which showed a lack of significant atherosclerotic changes in coronary arteries. However, the study disclosed a collateral vessel arising from the right coronary artery (RCA) supplying the right lung (Fig. 1C). Computed tomography revealed right pulmonary artery aplasia (Fig. 1D). Apart from the RCA, a hypoplastic right lung was supplied by bronchial arteries arising typically from the aorta and by collateral vessels from the right subclavian artery, right internal mammary artery, right axillar artery and coeliac artery (Fig. 1E). Because of the presence of negative T-waves on the ECG, chest pain during tachycardia and regional left ventricular wall abnormalities, the stealing phenomenon from the RCA was suspected. However, the patient refused further testing (perfusion assessment with cardiovascular magnetic resonance) and any future interventions. There are differing reports regarding the influence of collateral circulation on myocardial perfusion in such patients. The presented data suggests that the stealing phenomenon should be taken into consideration.



**Figure 1.** Electrocardiographic (A, B), coronary angiographic (C) and computed tomography (D, E) findings in a patient with right pulmonary artery aplasia with coronary collaterals supplying the hypoplastic lung (see text for details)

**Address for correspondence:**

Izabela Wojtkowska, MD, PhD, Department of Intensive Cardiac Care, Institute of Cardiology, ul. Alpejska 42, 04-628 Warszawa, Poland, tel: +48 22 34 34 301, fax: +48 22 815 42 67, e-mail: izabelawojt@op.pl

**Conflict of interest:** none declared