

Hypertrophic cardiomyopathy associated with abnormal origin of right coronary artery

Kardiomiopatia przerostowa związana z nieprawidłowym odejściem prawej tętnicy wieńcowej

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A 20-year-old man was admitted to our clinic with prolonged chest pain and shortness of breath. His physical examination was normal and myocardial enzymes were not elevated. Electrocardiography showed T-wave inversion in precordial leads. His transthoracic echocardiography (TTE) demonstrated hypertrophy of the interventricular septum and left ventricle posterior wall (Fig. 1A). There were no detectable gradients with Doppler echocardiography on left ventricular outflow tract, neither at rest nor with provocation. There were no other pathological findings on TTE. Syncope or family history of sudden cardiac death were not identified. 24 hour Holter ECG monitoring was normal. He underwent multidetector computed tomography coronary angiography (MCTCA) to exclude obstructive coronary artery disease. MCTCA revealed normal left coronary arteries and abnormal origin of right coronary artery (RCA) with an interarterial course between the aorta and pulmonary artery (Fig. 1B–D). There was no luminal stenosis in coronary arteries. Myocardial perfusion scintigraphy (MPS) with 99 mTc sestamibi was performed to investigate any effect of the interarterial course of RCA. After MPS, no myocardial perfusion defect or ischaemia was detected. Beta-blocker therapy was initiated and the patient was discharged. The association of hypertrophic cardiomyopathy and interarterial course of RCA is not common in the literature. Theoretically, myocardial ischaemia can develop in these patients due to abnormal supply-demand balance. Supply-demand imbalance should be kept in mind as a possible cause of chest pain in young individuals.

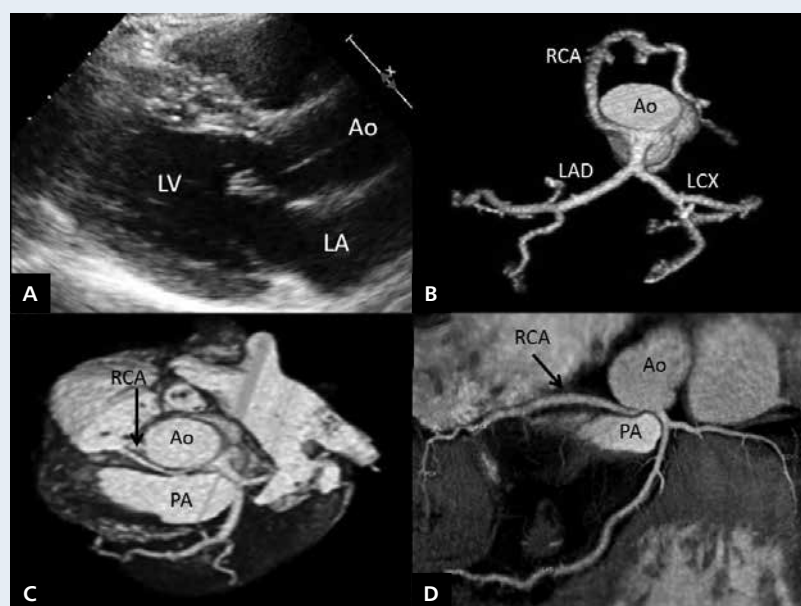


Figure 1. **A.** Transthoracic echocardiography (parasternal long axis view) showed non-obstructive hypertrophic cardiomyopathy; **B.** Multidetector computed tomography coronary angiography (MCTCA) volume rendering view showed right coronary artery (RCA) from left sinus of aorta; **C.** MCTCA showed RCA from left sinus of aorta and it had an interarterial course (between the pulmonary trunk and aorta) (arrow); **D.** MCTCA showed anomalous origin and interarterial course of RCA (arrow); Ao — aorta; LA — left atrium; LV — left ventricle; LAD — left ascending artery; LCX — left circumflex artery; PA — pulmonary artery

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