

Left ventricular aneurysm in a patient with hypertrophic obstructive cardiomyopathy diagnosed in computed tomography

Tętniak lewej komory u chorej z kardiomiopatią przerostową zawężającą rozpoznany w tomografii komputerowej

Ewa Kaźmierczak¹, Robert Juszkat², Bartłomiej Perek³, Ewa Straburzyńska-Migaj¹

¹1st Department of Cardiology, Poznan University of Medical Sciences, Poznan, Poland

²Department of Clinical and Interventional Radiology, Poznan University of Medical Sciences, Poznan, Poland

³Department of Cardiac Surgery and Transplantology, Poznan University of Medical Sciences, Poznan, Poland

Hypertrophic cardiomyopathy (HCM) is one of the most common heart diseases of genetic origin, with an incidence of 1/500 in the adult population. Relatively rarely, it is complicated by the development of a left ventricular (LV) apical aneurysm with normal coronary arteries. Its development is associated with a poor long-term prognosis, thus early and accurate diagnosis is of paramount importance. The test that is considered to have the highest accuracy is cardiac magnetic resonance imaging (MRI). However, this requires patient-physician co-operation. Echocardiography enables diagnosis only in about 50% of these cases. We describe the case of a 60-year-old woman with HCM referred for diagnostic evaluation prior to the implantation of a cardioverter-defibrillator (ICD) in primary prevention of sudden cardiac death. A history of hypertension of roughly 15 years, non-toxic nodular goitre and overweight were diagnosed. In 2005 and 2009, because of non-specific chest pain, coronary angiography was performed and normal coronary arteries were confirmed. Moreover, no regional disturbances in myocardial contractility of the LV were noted. This time, on admission to the hospital the patient reported exertional dyspnoea, palpitations and dizziness. Physical examination revealed a systolic curmudgeon on the apex of the heart, a loud ejection murmur, and the presence of a 4th heart sound. The laboratory tests were within normal ranges. Electrocardiogram was abnormal, with ST segment elevation in II, III, aVF and V₃-V₆ leads, and supra- and ventricular extrasystole (Fig. 1). Chest X-ray revealed no significant deviations. A cardiopulmonary exercise test revealed a slightly decreased oxygen consumption (17.5 mL/kg/min), chronotropic incompetence (peak HR = 81/min — 50% of predicted HR max), and abnormal systolic blood pressure response. In transthoracic echocardiography performed by the same cardiologist as 4 years earlier, LV hypertrophy was confirmed with maximal thickness in the middle part of septum (30 mm) and with intraventricular gradient of 27 mm Hg. Because of suboptimal examination conditions (obesity) and suspicion of a LV aneurysm, an MRI study was planned but not carried out due to a lack of patient co-operation (deafness). Instead of this, multi-sliced computed tomography was performed. An apical aneurysm of 44 × 33 mm was visualised (Fig. 2). Moreover, LV ejection fraction was 70%, and in the middle segment of the left descending coronary artery a muscular bridge was found. In some individuals, multi-sliced computed tomography may be considered as a useful tool in the diagnosis of LV aneurysms complicating a natural course of HCM.



Figure 1. Electrocardiogram of patient with ST segment elevation in II, III, aVF and V₃-V₆ leads

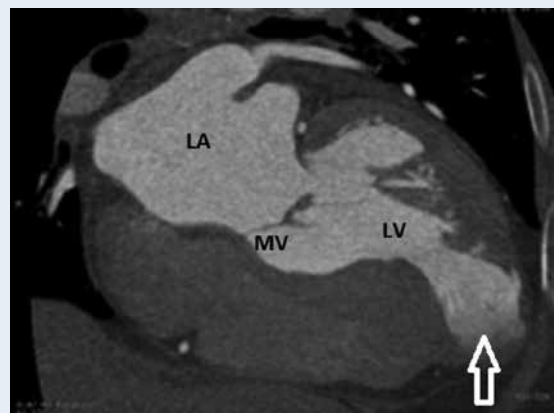


Figure 2. Computed tomographic scan enables visualisation of an aneurysm of the left ventricular apex (arrow); LA — left atrium; LV — left ventricle; MV — mitral valve

Address for correspondence:

Bartłomiej Perek, MD, PhD, Department of Cardiac Surgery, Poznan University of Medical Sciences, ul. Długa 1/2, 61-848 Poznań, Poland, tel: +48 61 854 92 10, fax: +48 61 854 90 85, e-mail: bperek@yahoo.com

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