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STUDIUM PRZYPADKU / *CLINICAL VIGNETTE*

Hypertrophic obstructive cardiomyopathy and anomalous origin of the right coronary artery. A rare coexistence

Nieprawidłowe odejście prawej tętnicy wieńcowej u pacjenta z kardiomiopatią przerostową

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We present the case of a 65 year-old patient with a history of hypertension and hypertrophic obstructive cardiomyopathy (HOCM) in whom anomalous origin of the right coronary artery (RCA) was diagnosed. Echocardiography measured left ventricular outflow tract (LVOT) gradient ranged between 80 and 123 mm Hg. Systolic anterior motion (SAM) of the mitral valve was visualised. The angiography showed favorable coronary anatomy for alcohol septal ablation (Fig. 1). Additionally, anomalous RCA origin from the left coronary sinus (CS) in sub-selective contrast injection was diagnosed. Cardiac magnetic resonance (CMR) showed asymmetrical left ventricular hypertrophy up to 22 mm of the base anterior segment, base and mid segments of the interventricular septum and inferior segment. Stress CMR revealed reversible, dipyridamole induced ischaemia in the base segment of the lateral wall, apex segments of the inferior and septal wall, and within papillary muscles. Computed tomography (CT) scan revealed RCA ostium angulation and moderate compression at rest of the proximal RCA segment (Fig. 2). Corrective surgery for HOCM was performed. Based on intraoperative assessment of the anomalous RCA course, no surgical correction was done.

The anatomical course of a coronary artery that passes between the aorta and pulmonary artery in a young person is a major risk factor for adverse events, even without symptoms. The co-existence of HOCM with marked LVOT obstruction at rest may potentially increase the sudden cardiac death risk. Recently Moza et al. (Am J Med Sci, 2011; 342: 341–342) reported a similar case, but in a much younger patient, who presented with a two-week history of exertional chest pain. Additionally, the combination of HOCM with left coronary artery originating from the right CS was described. Invasive treatment for asymptomatic patients remains controversial, with growing advocacy for patients with 'left from right' as opposed to 'right from left' origins. CMR provides relevant information on the extent and functional relevance of ischaemia in HOCM patients, mainly attributed to microvascular dysfunction. The value of CT in assessing anomalous coronary arteries has been established. Miller et al. (Int J Cadiovasc Imag, 2012; 28: 1525–1532) presented a series of 15 patients with abnormal origin of coronary arteries, who were examined by CT. This modality proved to be very accurate in showing the anatomical details, confirmed later during corrective surgery. Accurate depiction of the RCA course can be helpful in planning the operative strategy. Interventional treatment of the LVOT obstruction and SAM is discussed elsewhere. Surgical correction of anomalous course of coronary artery is recommended for all adult patients who are symptomatic or who have clear evidence of exercise-induced myocardial ischaemia and the mid-term results are encouraging.

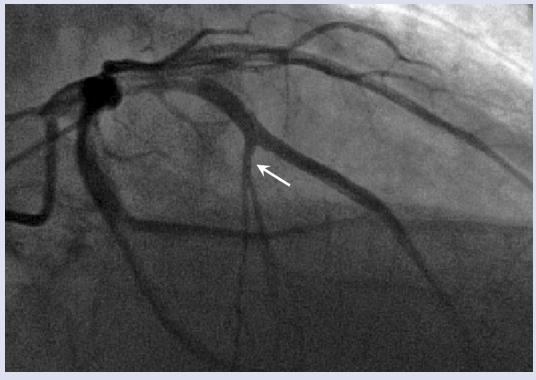

Figure 1. The left coronary artery. The arrow shows the septal branch as a possible target for alcohol or coil ablation

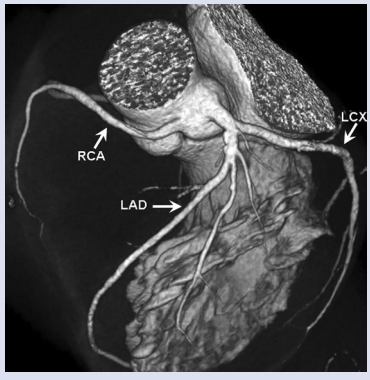

Figure 2. Three-dimensional reconstruction from the CT imaging; LAD — left anterior descending artery; LCX — left circumflex artery; RCA — right coronary artery

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Conflict of interest: *none declared*