

Significant stenosis of the left anterior descending artery in a young woman without cardiovascular risk and with above-average physical activity

Istotne zwężenie tętnicy zstępującej przedniej u młodej kobiety bez czynników ryzyka, uprawiającej ponadprzeciętnie sport

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A 39-year-old female was admitted to our hospital for coronary angiography due to suspicion of significant stenosis in the left anterior descending artery (LAD) as shown in computed tomography angiography (CTA). CTA was performed because of clinically and electrocardiographically positive exercise testing. She had complained of typical angina for ca. one year prior to CTA. She had no cardiovascular (CV) family history, no chronic diseases or smoking in her medical history, and normal fasting blood glucose. She had jogged regularly for ca. five years — ca. 50 km/week and had participated in marathons several times. Admission electrocardiogram revealed with sinus rhythm, 60 bpm, without ST changes. Echocardiography showed no abnormalities; left ventricular end-diastolic diameter — 46 mm and left ventricular ejection fraction — 65%. Body mass index was 25 kg/m², blood pressure — 115/60 mm Hg. Laboratory tests showed normal blood cholesterol: total 2.97 mmol/L, low-density lipoprotein cholesterol (LDL-C) — 1.5 mmol/L, triglycerides (TG) — 0.53 mmol/L, high-density lipoprotein cholesterol (HDL-C) — 1.31 mmol/L. Coronary angiography (CA) showed a short significant lesion in the proximal LAD (85%) (Fig. 1A). Otherwise there were no significant stenoses. An ad hoc angioplasty was performed with deployment of a bioresorbable vascular scaffold 3.5 × 18 mm (Fig. 1B, C). Optical coherent tomography showed the structure of the atherosclerotic plaque and good effect of the performed angioplasty (Fig. 1D). The incidence of coronary artery disease (CAD) in young patients under 40 years old is increasing. Genetic predisposition and rapid acquisition of traditional risk factors because of urbanisation seem to be the major causes. Atherosclerosis is a complex disease, involving both genetic and environmental factors. However, the influence of genetic variations on its early development remains unclear. The predominant risk factors present in this subset of population are tobacco use, atherogenic dyslipidaemia (elevated LDL-C and TG, and low HDL-C), and family history of premature CAD. Hypertension and diabetes are less common compared with older patients. It is well known that higher levels of fitness at baseline and improvement in fitness early in adulthood are favourably associated with CV disease risk and mortality. Aerobic exercise, thoroughly investigated and recommended due to its positive influence (dose-effect) on prognosis,

is a long-lasting exercise with rhythmical movement of large muscles; jogging is an example. Our case suggests that angina in young patients without typical CV risk, even those with above-average physical activity, is not to be neglected/underestimated.

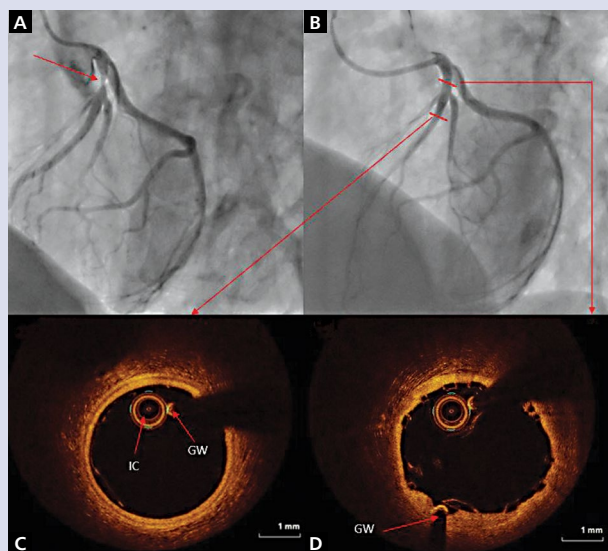


Figure 1. A. Coronary angiography — red arrow shows critical stenosis in proximal left anterior descending artery (LAD); B. Coronary angiography — LAD after deployment of 3.5 × 18 mm bioresorbable vascular scaffold. Red lines mark the places shown in optical coherent tomography (OCT) images taken after the procedure; C. OCT image of healthy LAD shows three layers of the artery; mean diameter: 3.30 mm; IC — imaging catheter; GW — guide wire; D. OCT image shows good scaffold struts apposition and the atherosclerotic plaque — 5 o'clock to 8; mean diameter: 3.43 mm; GW — second guide wire going under the strut to protect the diagonal branch

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