

# Polycystic ovary syndrome and nephrotic syndrome. Common causes for premature cardiovascular disease?

Zespół policystycznych jajników i zespół nerczycowy. Wspólna etiologia przedwczesnej miażdżycy?

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Polycystic ovary syndrome (PCOS) is linked with increased risk of cardiovascular diseases (CVD). Several studies (but not all) have linked PCOS with coronary artery disease (CAD) and acute coronary syndromes (ACS). The risk of deep venous thrombosis (DVT) in the PCOS population is unclear, and no association of PCOS with pulmonary embolism (PE) has been reported so far. We present a young patient with PCOS and history of nephrotic syndrome (NS), who presented with ST-elevation myocardial infarction (STEMI), and subsequently experienced DVT followed by PE. A 32-year-old female, obese PCOS-patient receiving for several years hormonal therapy, with hypothyroidism, impaired glucose tolerance, and history of NS treated with corticosteroids 16 years ago, was admitted due to chest discomfort for several hours. Electrocardiogram showed ST-elevation in precordial leads. Echocardiography showed significant systolic anomalies with left ventricular ejection fraction (LVEF) of 25%. Urgent coronary angiography revealed acute occlusion of the left anterior descending coronary artery (LAD), chronic occlusion of the diagonal branch, significant stenosis in the mid left circumflex coronary artery (LCx), and long borderline lesion in the right coronary artery (Fig. 1A, B, D). Immediate percutaneous LAD-opening with implantation of a drug eluting stent was performed. Thrombolysis In Myocardial Infarction (TIMI)-3 flow was restored (Fig. 1C). Maximal troponin T rise was 4122 ng/L (UNL 14). Total cholesterol was 3.3 mmol/L, and low-density lipoprotein cholesterol was 1.1 mmol/L. In the subsequent days symptoms of DVT of inferior limbs appeared and were confirmed by ultrasonography. Thus, dual antiplatelet therapy (DAPT) was combined with vitamin K-antagonist (VKA). Control echocardiography showed gradual LVEF improvement up to 50%. Percutaneous angioplasty of LCx was successfully done in the next stage. Antinuclear antibodies (ANA)-1, ANA-2, ANA-3, antineutrophil cytoplasmic antibodies (pANCA, cANCA), and anticardiolipin antibodies (ACA-IgM, ACA-IgG) assessed three months later were negative, excluding antiphospholipid syndrome and systemic vasculitis. VKA treatment was continued for five months. Three years later the patient was admitted again with progressive dyspnoea. D-dimer was elevated to 2.5 µg/mL (UNL 0.5). Computed tomography angiography showed thrombi in segmental branches of pulmonary arteries. Thus, DAPT was withdrawn and anticoagulation with dabigatran was introduced. ACS in young women is rare and under the age of 45 years is predominantly a men's disease. Since atherosclerosis is rarely encountered in early decades of life, uncommon causes may be more prevalent. Nevertheless, coexistence of several CVD-risk factors may contribute to very early atherosclerotic progression. Previous studies indicate that single-vessel CAD was the most common angiographic appearance in young women presenting with STEMI. This is in contrast to our three-vessel CAD patient. Previous history of NS may explain early development of extensive CAD. Zhao Y et al. [Can J Cardiol. 2017] reported a 15-year-old female with NS, who experienced non-STEMI on underlying three-vessel-CAD. Finally, a more than casuistic coexistence of PCOS and DVT and/or PE may not be proven nor excluded in this case. Early CVD-prophylaxis is a priority in young women with multiple CVD risk factors.

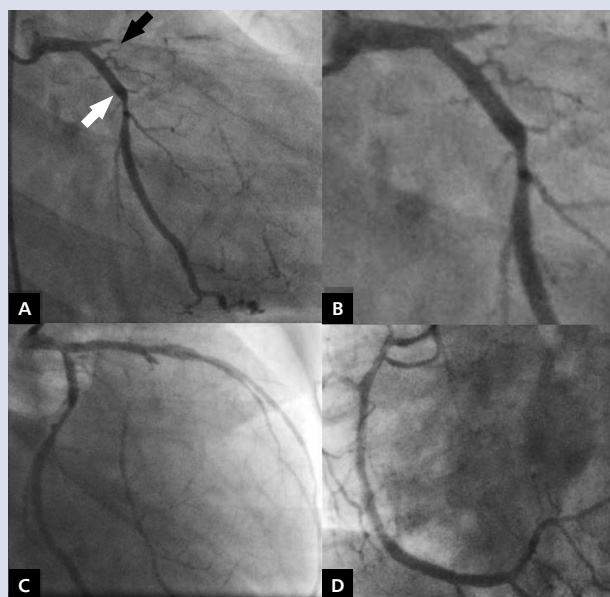


Figure 1. A. Acutely occluded left anterior descending coronary artery (LAD) (black arrow) and significantly stenosed left circumflex coronary artery (white arrow); B. Magnification of image 'A'; C. LAD after percutaneous opening; D. Right coronary artery with long borderline lesion in proximal and mid segment

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**Conflict of interest:** none declared

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