Kardiologia Polska 2014; 72, 7: 654; DOI: 10.5603/KP.2014.0136 ISSN 0022–9032

STUDIUM PRZYPADKU / *CLINICAL VIGNETTE*

Patient with disseminated atherosclerosis, resistant hypertension and quadruple left renal artery

Chory z rozsianą miażdżycą tętnic, opornym nadciśnieniem tętniczym i poczwórną tętnicą nerkową lewą

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A 50-year-old patient was admitted to the hospital with suspected acute coronary syndrome. History revealed: generalised atherosclerosis, stroke with motor aphasia (08.2011), resistant hypertension (on betaxolol, ramipril, nitrendypin, methyldopa, doxazosin), diabetes type 2, smoking and obesity. ECG revealed: sinus rhythm 70/min, left axis deviation; ST depression in I, aVL; negative T wave in V_6. Coronary angiography (Fig. 1) revealed: left main artery: without stenosis; left anterior descending artery (LAD): minor changes; left circumflex artery (LCX): narrowing in first marginal branch (OM-1) 70%; right coronary artery (RCA): predominant, without stenosis. Percutaneous transluminal coronary angioplasty LCX-OM1 revealed: 70% stenosis before and 0% stenosis after angioplasty with stent implantation Orsiro 3.0 × 22 mm (DES). Ambulatory blood pressure (BP [mm Hg]) monitoring (Fig. 2) revealed: average BP — day: 153/110, night: 162/109; maximum BP — day: 213/139, night: 185/131; minimum BP — day: 123/98, night: 144/94. The load of systolic BP — day: 69%, night: 100%; the load of diastolic BP — day: 100%, night: 100%. Reverse dipper in systolic BP and nondipper in diastolic BP. Doppler ultrasound of carotid and vertebral arteries (Fig. 3) revealed: unobstructed both carotid arteries. Right common carotid artery (RCCA) intima–media thickness (IMT): 1.3 mm; left common carotid artery (LCCA) IMT: 1.6 mm; unobstructed vertebral arteries on both sides with normal flow. Multidetector computed tomography angiogram (CTA) of the renal arteries (Fig. 4) revealed: right kidney provided by one renal artery, without visible lesions. Left kidney provided by four renal arteries, one of them with 50% proximal stenosis, other renal arteries without significant stenosis. Renal vasculature is known for having a broad spectrum of variants. Their distribution and morphology can be explained by considering the embryology of the renal vessels. Accessory renal arteries are vascular variation and can be found in up to one third of patients. In one cadaver study, 23% of patients had double, 4% had triple, and 1% had quadruple renal arteries. Bilateral multiple renal arteries occur in 10% of the population. Renal artery stenosis (RAS) is an important cause of arterial hypertension and chronic kidney disease. Significant RAS has been found more frequently in patients older than 60 years. Coronary artery disease, history of myocardial infarction or stroke significantly increase the chance of RAS detection. Symptomatic atherosclerotic disease found in the peripheral and/or coronary arteries and diabetes mellitus increases the chance of RAS detection. Multidetector CT is the gold standard for the detection of renal artery variants. In this case, quadruple renal artery coexists with severe resistant hypertension, implying multi-organ complication.

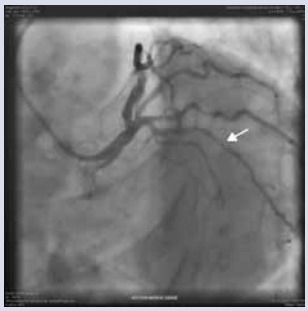

Figure 1. Coronary angiography. LCX: 70% narrowing in OM-1 (arrow)

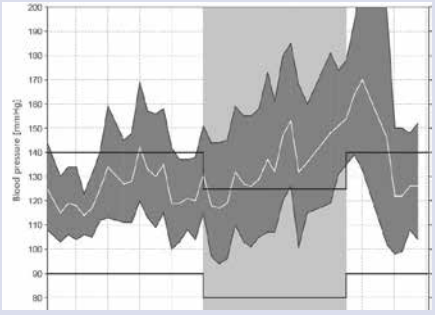

Figure 2. Ambulatory blood pressure monitoring

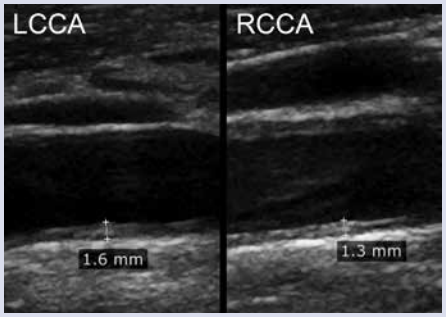

Figure 3. Doppler ultrasound of carotid arteries. LCCA IMT: 1.6 mm; RCCA IMT: 1.3 mm

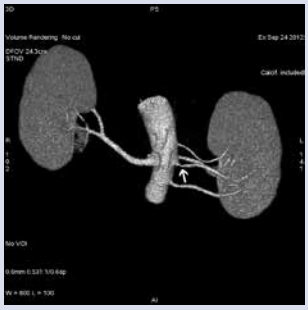

Figure 4. CTA of the renal arteries. Left kidney provided by four renal arteries, one of them with 50% proximal stenosis (arrow)

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Conflict of interest: *none declared*