Transient renal artery stenosis during renal sympathetic denervation in a patient with resistant hypertension

Przejściowe zwężenie tętnicy nerkowej w przebiegu denerwacji współczulnej u pacjenta z nadciśnieniem tętniczym opornym

Katarzyna Kostka-Jeziorny, Artur Radziemski, Stefan Grajek, Andrzej Tykarski
Department of Hypertension, Angiology and Internal Medicine, Poznan University of Medical Sciences, Poznan, Poland

A 52-year-old female was admitted to the Department of Hypertension with resistant hypertension coexistent with type 2 diabetes mellitus, two episodes of transient ischaemic attack in the past, and obesity. The patient’s arterial hypertension was uncontrolled on 6 antihypertensive medications, which included a loop diuretic and an aldosterone antagonist. During the course of the patient’s previous hospitalisation, secondary hypertension was excluded. Angio-computed tomography (CT) results showed a bilateral double renal artery with a diameter of the main trunks of more than 4 mm (corresponding angiography, Fig. 1). A denervation procedure Simplicity cathether (Medtronic) was applied. In the main left renal artery, 6 ablations were performed, with a mean impedance change of 8.82 (Δ,%) and temperature of 52°C without any complications. During the first ablation of the main right renal artery, with an impedance change of 20 (Δ,%) and a temperature of 75.3°C, oedema of the arterial wall with a significant stenosis of 80% occurred (Fig. 2). A local administration of nitroglycerine and verapamil (injected via a catheter) was ineffective. Due to the above, no further ablations have been performed. A follow-up arteriography of the right renal artery was performed 24 h later, showing a minimal stenosis in the previously affected area (corresponding angiography, Fig. 3). No clinical complications have been observed during this adverse event based on blood pressure parameters and control laboratory tests including serum creatinine level. A follow-up angio-CT of the right renal artery is scheduled in 3 months. Based on published papers, there have been no case reports of acute transient renal artery stenosis during renal denervation procedures. One case of a single structural renal artery stenosis, which occurred in the form of a late complication (i.e. after 6 months), was reported by Kaltenbach et al. (J Am Coll Cardiol, 2012; 60: 2694–2695).

Address for correspondence:
Katarzyna Kostka-Jeziorny, MD, PhD, Department of Hypertension, Angiology and Internal Medicine, Poznan University of Medical Sciences, ul. Długa 1/2, 61–848 Poznań, Poland, e-mail: kostkajeziorny@gmail.com

Conflict of interest: none declared