

Acute coronary syndrome in a patient with an anomaly of the right coronary artery, which originated from the medial part of the left anterior descending artery

Ostry zespół wieńcowy u pacjenta z nietypowym odejściem prawej tętnicy wieńcowej od medialnego odcinka tętnicy międzykomorowej przedniej

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A 66-year-old female with unstable angina CCS III was referred for urgent coronary angiography. Her medical history included hypertension, hyperlipidaemia, and atrial fibrillation (AF). She had no history of coronary artery disease. The physical examination revealed tachycardia (110 bpm) and increased arterial blood pressure to 150/100 mm Hg. The electrocardiogram presented an AF with negative T waves in II, III, aVF, and V₄-V₆ leads. The transthoracic echocardiography demonstrated good left ventricular ejection fraction of 50% without any significant valvular disease. On admission, the blood test revealed increased level of troponin T (0.039 ng/mL) and well-preserved renal function (estimated glomerular filtration rate, 90 mL/min/1.73 m²). Her GRACE risk score was 151 points, which classified her as a high-risk patient. Coronary angiography revealed an anomalous right coronary artery (RCA), which originated from the medial part of the left anterior descending artery (LAD). Interestingly, the RCA was the infarct-related artery (IRA) with critical stenosis in its medial segment and TIMI flow 2 (Fig. 1). There were no lesions in other segments of coronary arteries. Due to the severely angulated RCA/LAD bifurcation, a Launcher Extra Backup Guide Catheter 6-Fr 3.5 (Medtronic, Inc., Minneapolis, MN) was used. A Hi-Torque Balance Middleweight guidewire (Abbott Vascular, Santa Clara, CA) was advanced into the LAD and a Hi-Torque Whisper ES (Abbott Vascular, Santa Clara, CA) was advanced into the RCA. The lesion was predilated with a 2.0 × 20-mm semi-complaint balloon (Trek, Abbott Vascular) and then a 2.75 × 20-mm everolimus eluting stent (Promus, Boston Scientific) was implanted with good angiographic results and TIMI flow 3 (Fig. 2). Three days post procedure the patient was discharged home. Coronary artery anomalies occur in about 1.3% of patients referred for cardiac catheterisation. However, a single isolated coronary artery that originates from the aortic trunk occurs only in 0.024% of the general population and is frequently associated with other congenital heart defects. The course of such a single coronary artery is crucial for the patient's prognosis. If it is located between the aorta and pulmonary trunk, it may be associated with myocardial ischaemia and sudden cardiac death. If such a single coronary artery is IRA, percutaneous coronary intervention may be challenging due to its complex anatomy.



Figure 1. Coronary angiography; right anterior oblique 8, cranial 32; the arrow indicates infarct-related artery



Figure 2. Coronary angiography; right anterior oblique 25, cranial 22

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