Case report

Eight-vessel disease mimicking takotsubo cardiomyopathy

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A 44-year-old Japanese woman presented with a 5-day history of dry cough, nausea and diarrhea. She also complained of chest pain, and headache for an hour prior to the arrival. Past medical history revealed one abortion but no coronary risk factors. On examination, she was in mild confusion (Glasgow Coma Scale of E4V5M6) and afebrile. The vital signs included the blood pressure of 85/56 mmHg, the pulse of 78/min, the respiratory rate of 24/min and the SpO2 of 100% on breathing ambient air. Auscultation of lungs was normal. Her abdomen was soft and flat without tenderness. There was no leg edema.

An electrocardiogram (ECG) on arrival revealed normal sinus rhythm, ST segment elevations in aVR and aVL, ST segment depressions in II, III, aVF, V3-5, inverted T waves in V1-2 and no Q waves (Figure 1). Chest X-ray film showed no cardiomegaly. Echocardiography showed akinesis in the apical area and hyperkinesis in the basal area of the left ventricle. A tentative diagnosis of acute coronary syndrome (ACS) or takotsubo cardiomyopathy (TC) a few days after onset was provided and thus emergency cardiac catheterization was performed within 90 min after her arrival. Coronary angiography

Figure 1. An ECG on arrival revealed normal sinus rhythm, ST segment elevations in aVR and aVL, ST segment depressions in II, III, aVF, V3-5, inverted T waves in V1-2 and no Q waves.
CAG revealed significant stenosis of distal branches of left anterior descending coronary artery (LAD), distal branches of left circumflex artery (LCX) and branches of right coronary artery (RCA) (Figure 2). After finishing plain old balloon angioplasty (POBA) of LAD and LCX, she was suddenly developed shock. Intensive fluid infusion and catecholamine drip were used. CAG showed new onset infarction of RCA. Heparin was discontinued and argatroban was initiated because of suspected heparin-induced thrombocytopenia. After using argatroban, the large thrombus was dissolved and she was recovered. But the occlusion of small peripheral branches had been remained yet. Later after the admission, however, the laboratory results eventually showed that there were no anti-haparin antibody and she had normal level of serum antithrombin III.

During the admission after catheterization, possible risk factors for ACS were investigated. She was a non-smoker, non-diabetic and normotensive with a body mass index of 20.1 kg/m². She had no family history of heart diseases and hyperlipidemia. Her lipid profile were: total cholesterol of 160 mg/dl, triglycerides of 31 mg/dl, high-density lipoprotein cholesterol (HDL-C) of 42 mg/dl, low-density lipoprotein cholesterol (LDL-C) of 108 mg/dl, Lipoprotein (a) of 19 mg/dl, malondialdehyde-modified low-density lipoprotein (MDA-LDL) of 220 U/l, apolipoprotein A-I of 87 mg/dl, apolipoprotein B of 73 mg/dl and apolipoprotein E of 2.8 mg/dl. The coagulation profile was normal. The collagen disease panels such as lupus anticoagulant were also normal. The ankle brachial pressure index (ABI) was normal. For ruling out pseudoxanthoma elasticum, skin biopsy was conducted and it was also normal. Brain MRI (magnetic resonance imaging) showed multiple fresh lacunar cerebral infarction although neurological deficits were not detected. The patient has been well after discharge and her MDA-LDL level became 90 U/l with a statin.

Discussion

The plasma MDA-LDL is a major epitope of oxidized LDL and a marker of atherothrombosis. Tani et al. reported that MDA-LDL was related to focal coronary vasospasm and that it could increase percent plaque volume. Focal coronary vasospasm is more likely associated with ACS than diffuse coronary vasospasm, and it may induce the onset of her ACS. The coagulation, vascular and lipoprotein profiles of our patient were not significant except high serum MDA-LDL level. Thus, high MDA-LDL level was likely associated with her ACS and cerebral infarction. Tani et al. also suggested that the percent plaques volume may be increased dramatically and coronary vasospasm become persistent once intense focal vasospasm is developed. Her episode was consistent with this characteristic. In this report, we described a rare case that high MDA-LDL-related 8-vessel peripheral ACS, mimicking TC.

Conflict of interest: None declared.
References


