

Stress-induced cardiomyopathy presenting with high-degree AV block with ventricular asystole

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Introduction: Stress induced cardiomyopathy(SCMP) is induced by emotional or physical stress and it commonly occurs in postmenopausal women. Electrocardiographic(ECG) abnormalities mimicking acute coronary syndrome are commonly seen; however, the coexistence of high-degree atrioventricular (AV) block is quite rare in patients with SCMP. We describe SCMP presenting as high-degree AV block with ventricular asystole provoked by emotional stress.

Case report: A 60-year-old female presented to the emergency room with two-day history of sudden onset squeezing chest pain. Her risk factors included smoking and being postmenopausal. The patient recently experienced severe psychological stress due to her husband's cancer diagnosis. Not long after she came to the emergency room, she suddenly developed a generalized tonic-clonic seizure. The seizure terminated after intravenous lorazepam injection, but her blood pressure was low at 77/43 mmHg. ECG showed high-degree AV block with marked bradycardia (26 beats/minute) (Fig. 1A). Serum cardiac enzymes (creatine kinase-MB, 73.8 ng/ml; Troponin-T, 11.58 ng/ml) and brain natriuretic peptide (834 pg/mL) were both elevated. Ventricular pacing with a temporary pacemaker was promptly performed (Fig. 1B). Suspecting acute myocardial infarction, emergent coronary angiography was performed, which showed non-obstructive coronary arteries (Fig. 1C). Transthoracic echocardiography(TTE) showed depressed left ventricular systolic function (ejection fraction, 28%) with severe global hypokinesia. With intravenous dobutamine administration, her heart rate remained above 60 beats/minute. Temporary pacemaker was removed on hospital day 4; however, the patient experienced recurrent episodes of near syncope during dobutamine tapering, and several episodes of high-degree AV block with ventricular asystole were documented. A dual-chamber permanent pacemaker was implanted on hospital day 11. At two-month follow-up in the outpatient clinic, TTE showed normalization of left ventricular systolic function (ejection fraction, 60%). Permanent pacemaker event analysis showed the well-maintained sinus rhythm without any pacing rhythm.

