



Case Report

Recurrent stress cardiomyopathy with different electrocardiographic abnormalities on each presentation in a depressed post-menopausal woman

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ABSTRACT

Stress cardiomyopathy (SCM) is a syndrome of transient cardiac abnormalities precipitated by intense emotional or physical stress. Differentiating SCM from acute myocardial infarction is often difficult but vital to avoid subjecting SCM patients to unnecessary reperfusion therapy and invasive coronary angiography. For accurate diagnosis, it is important that physicians be familiar with the current diagnostic criteria, most susceptible populations, and typical triggers for SCM. SCM occurs almost exclusively in post-menopausal women, a group with a high frequency of psychiatric disorders. Thus, in addition to typical trigger events, comorbid psychiatric disorders may contribute to SCM onset. We report a rare case of recurrent SCM with distinct electrocardiographic abnormalities during each presentation in a post-menopausal woman with depression.

<Learning objective: Recurrence of SCM was thought to be infrequent before but it has been increasingly reported recently. Although the underlying mechanism remains unclear, comorbid psychiatric disorders may contribute significantly to the pathogenesis of SCM and its influence may have been underestimated. Routine mental health screening should be done accompanying therapy for SCM.>

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Introduction

Stress cardiomyopathy (SCM) is an acute cardiac syndrome characterized by transient wall motion abnormalities, typically involving apical and middle portions of the left ventricle and hyperkinesis of the basal segment in the absence of significant coronary artery disease. It usually develops after acute emotional or physiological stress, especially in post-menopausal women and elderly patients. It is often misdiagnosed as acute myocardial infarction based on shared symptoms and similar electrocardiographic presentations. To further define the symptom profile of SCM, we present a rare recurrent case with different ECG abnormalities during each presentation.

Case report

A 62-year-old woman with type II diabetes presented with acute onset constrictive retrosternal chest pain. The ECG showed diffuse T-wave inversion on the anterior and inferior leads, suggesting myocardial ischemia (Fig. 1A). Laboratory analyses revealed elevated troponin-I (0.13 ng/mL, normal range of <0.11 mg/mL)

and creatine kinase MB isoenzymes (17.1 ng/mL, normal range of <10 mg/mL). Non-ST-segment elevation myocardial infarction was suspected, but coronary angiography showed normal coronary perfusion with no lesion suggestive of acute plaque rupture (Fig. 2A). Ventriculography showed evident hypokinesis of the middle ventricular regions. Apical portion was mildly involved and the basal portion was spared (Fig. 2B). An abnormally low ejection fraction of 40% was noted. Before this attack, the patient was in a good state of health. The patient lost her husband to cancer about one year prior to this admission and her only son died unexpectedly six months after her husband had passed away. She became depressed thereafter and we suspected that bereavement may have been the trigger for SCM. Intracranial lesion was excluded by brain computed tomography (CT) during hospitalization. The patient was discharged uneventfully five days later and prescribed aspirin and an anti-diabetic agent. Neither an angiotensin-converting enzyme inhibitor nor a beta-blocker was prescribed because of the patient's relatively low blood pressure. A follow-up echocardiogram on the 10th day after discharge revealed a left ventricular ejection fraction of 60% and no regional wall motion dysfunction. The electrocardiographic abnormality had also returned to normal on follow-up (Fig. 1B). She was then treated at the endocrine and metabolism out-patient department because of poor compliance with insulin treatment. Depressed mood persisted and she became increasingly isolated. One year later, she presented with chest pain that

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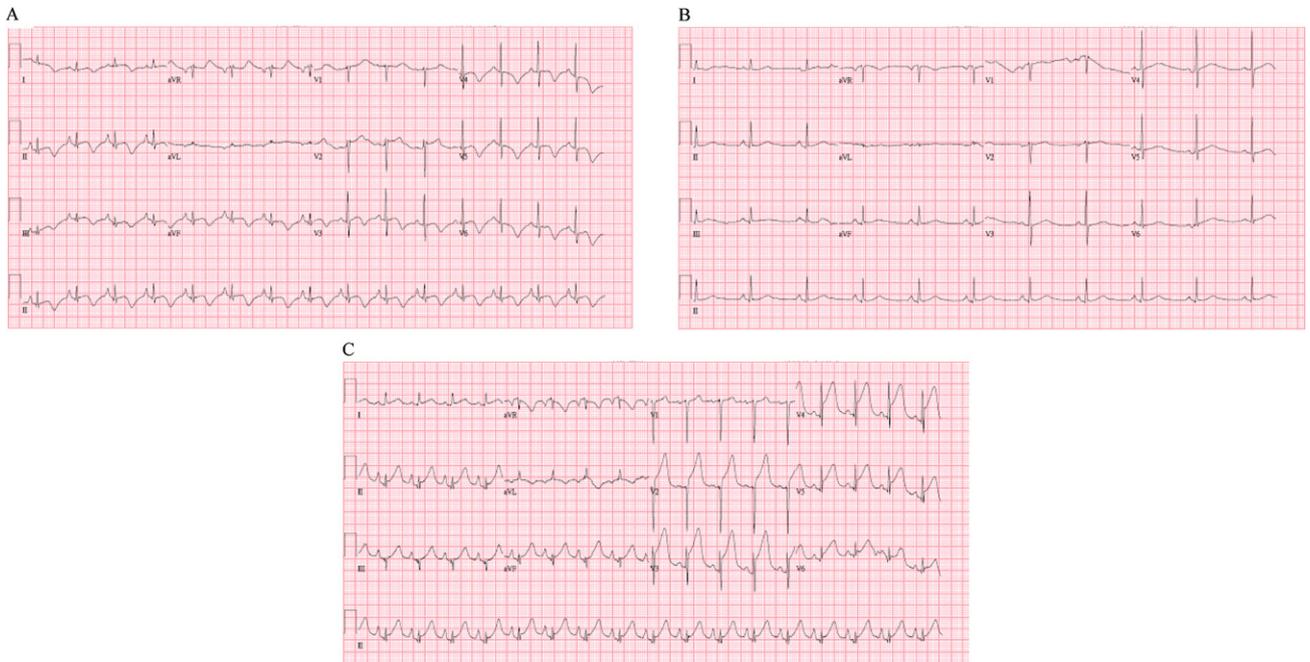


Fig. 1. Electrocardiograms (ECG) recorded on first admission (A), 6 months later (B), and on second admission (C). The ECG on first admission exhibited diffuse T-wave inversion but the ECG was normal 6 months later. On second admission, diffuse ST-segment elevation was observed.

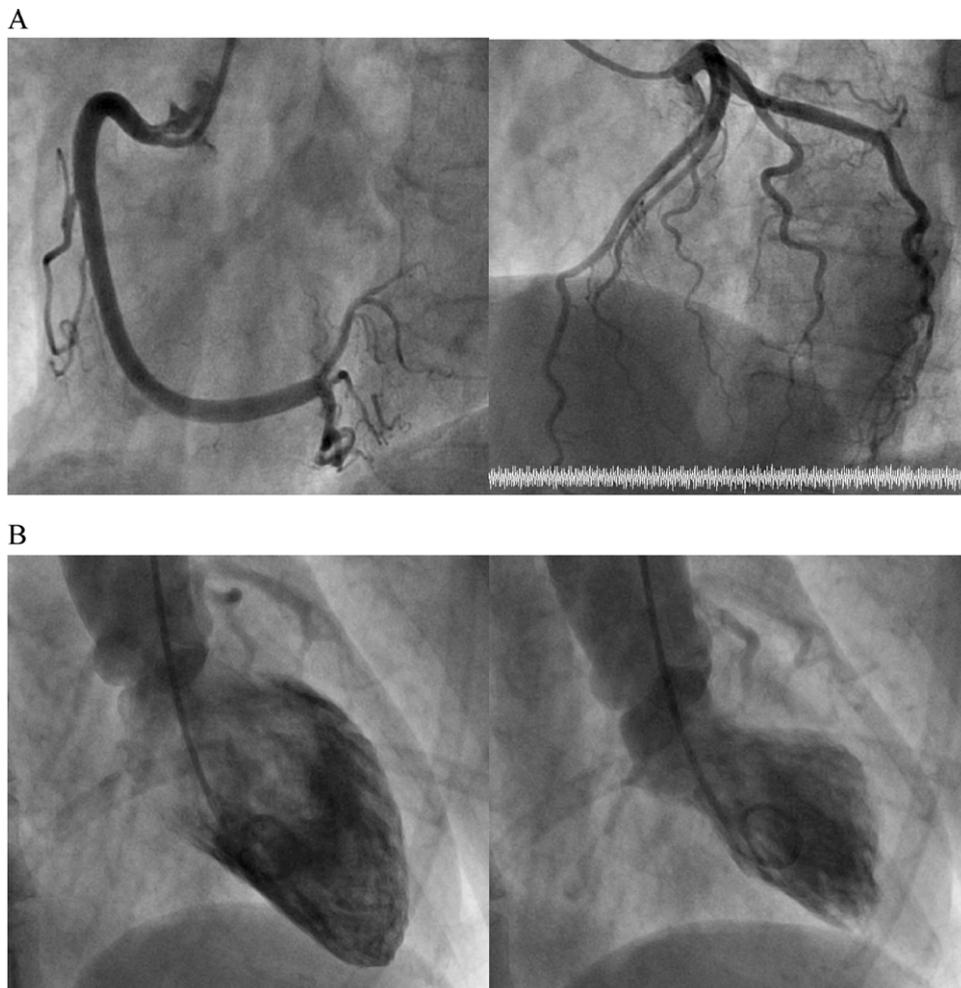


Fig. 2. Cardiac catheterization on first admission demonstrating no epicardial coronary artery disease of either the right or left coronary arteries (A). Right anterior oblique view of the ventriculogram in end diastole and systole revealed movement abnormalities involving midventricular and apical portions (B).

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