Case Report

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A Case of Takotsubo Cardiomyopathy

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Abstract

Takotsubo cardiomyopathy (TCM), also called stress cardiomyopathy, broken heart syndrome and apical ballooning syndrome, is a heart problem that ocurs after intense stress, sadness or shock. Takotsubo cardiomyopathy usually presents with chest pain and dyspnea and is similar to the diagnosis of acute coronary syndrome. Echocardiography and coronary angiography have an important role in the diagnosis of Takotsubo cardiomyopathy. In this case report, we wanted to investigate Takotsubo cardiomyopathy in a 59-year-old woman who presented to the emergency department.

Keywords: Takotsubo cardiomyopathy, broken heart syndrome, acute coronary syndrome

Introduction

Takotsubo cardiomyopathy (TCM) is a type of cardiomyopathy without severe coronary obstruction characterised by transient systolic dysfunction of the apical and midsegment of the left ventricle, typically in the presence of emotional or physical stress (1-3). The disease is called Tako-tsubo because the ventricular appearance of the heart in stress, sadness or shock resembles a earthen ware pot. The incidence of TCM has been determined to be approximately 2% in all patients presenting with suspicion of acute coronary syndrome (3,4). TCM, which is mostly known as the disease of middle-aged postmenopausal women, can be determined by seriouse motional or physical stress experienced when the anamnesis is deepened (2,3). However, it can also develop in the absence of stress in men under the age of 50 (2). Echocardiography, one of the imaging methods, is very important in detecting left ventricular wall motion disorder with typical apical ballooning in the diagnosis of TCM (2). The definitive diagnosis for TCM is based on the typical appearance and the absence of severe coronary artery disease (2,3). The drugs recommended for treatment are Standard heart failure drugs that contribute to left ventricular remodeling. In this study, we described the case of a 59-year-old elderly female patient who was admitted to the emergency department with complaints of chest pain and was hospitalized with a diagnosis of acute coronary syndrome, but later we detected TCM.

Case

A 59-year-old female patient, who had previously been monitored for diabetes and hypertension, was admitted to the emergency department with chest pain that started 2 hours ago and worsened half an hour ago. In the patient's vitals, blood pressure: 140/80 mm/Hg, finger tip blood sugar: 156 mg/dl, saturation (spO2) 93%, pulse: 67 beats/min. The patient's electrocardiography (ECG) showed elevation in V1-V6, D1-aVL. The patient was consulted by a cardiologist and hospitalised in the coronary intensive careunit with a diagnosis of diffuse anterior MI. ECG was performed again and echocardiography (TTE) evaluation showed apex akinetic ejection fraction: 30% and moderate mitral insufficiency. There was no pericardial effusion. Antiaggregant and anticoagulant treatment was initiated because of the diagnosis of ST elevation MI. The patient was immediately taken to the catheterisation laboratory and coronary angiography showed normal left anterior descending artery (LAD), circumflexartery (Cx) and right coronary artery (RCA). In the light of these findings, the patient was diagnosedas Takotsubo (Apical Ballooning) Syndrome (Figure-1 and 2).

Discussion

TCM is considered a newtype of cardiomyopathy, occurring in most women over the age of 58 (2,5). Previous studies have

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Figure 1. Transthoracic echocardiography and electrocardiography of the patient taken in the cardiology department

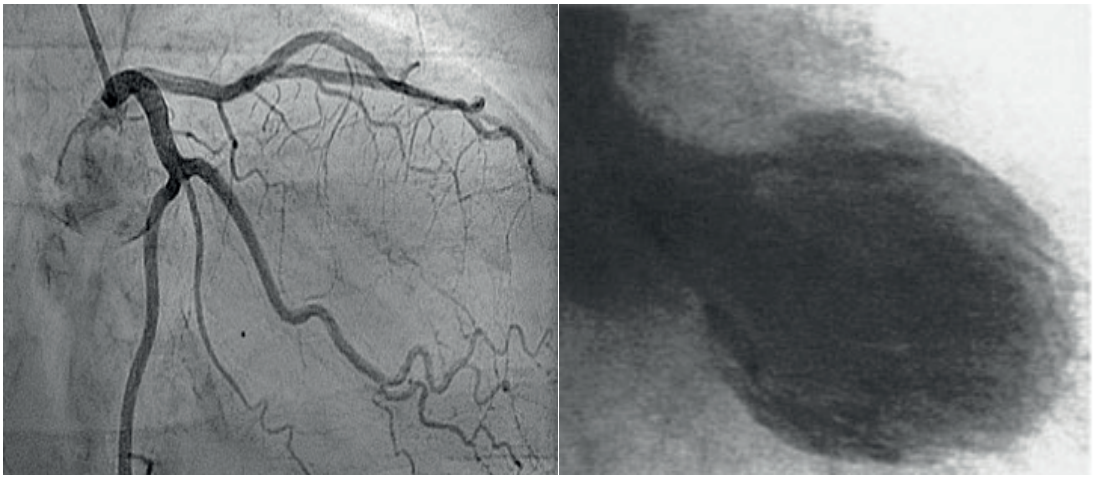

Figure 2. Typical apical ballooning seen on ventriculography

shown that 5% of women suspected of having a heart attack actually have the condition (5). Although the prognosis of TCM is generally good, the mortality rate has been reported to vary between 2% and 4% in different countries (6). Electrocardiograms (ECG) of patients presenting with chest pain and dyspnoea usually show ST elevation, T negativity or ST-T changes in precordial derivations consistent with acute coronary syndrome (2,3). The most common ECG finding in TCM is ST elevation in precordial derivations. However, this elevation is not as high as in acute myocardial infarction. Normal ECG or non-specific ECG changes can be seen in approximately 17% of patients (2). Therefore, transthoracic echo-cardiography (TTE) plays a very important role in the diagnosis, detection of complications of TCM and shaping the treatment (2). Although the pathophysiology of TCM is not known with certainty, catecholamine discharge and microvascular dysfunction are currently the most accepted theories (7). Catecholamine levels of patients diagnosed with TCM were 2-3 times higher than those of patients with myocardial infarction (7). It has been reported that this may be related to excessive catecholamine secretion due to stress (8). Estrogen has an important role in all eviating oxidative stress, affecting sympathetic neuromodulation, decreasing the sensitivity of β-receptors and improving endothelial function (9). Therefore, the reason for the common occurrence of TCM in female patients may be related to the decreasing estrogen level due to the post menopausal period.

Conclusions

There has been a significant increase in the number of TCM cases in our country in recent years. In particular, the importance of early diagnosis has increased significantly due to the fact that elderly patients may present with very different symptoms, can easily be confused with acute coronary syndromes, and may lead to death and other complications. Evaluation with TTE of patients with ST segment elevation detected on ECG in the emergency department before emergency coronary angiography allows the detection of diseases that may be confused with acute coronary syndrome such as TCM. In addition to the typical TCM appearance, the detection of intraventricular thrombus and the ability to evaluate right and left ventricular functions increase the importance of TTE.

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