

Amna Al Tkrit MD¹, Omar Al Janabi MD¹, Andrew Mekaiel MD¹, Aditya Mangla DO^{1,2}

1-Department of Internal Medicine, Jamaica Hospital Medical Center 2-Department of Interventional Cardiology, Jamaica Hospital Medical Center

Introduction

Takotsubo cardiomyopathy (TCM) or stress-induced cardiomyopathy (SICM) is a syndrome characterized by left ventricular dysfunction in the absence of significant coronary artery disease. This disease is usually benign, transient, and is usually treated conservatively with good prognosis. However, we are reporting a case of TCM with an uncommon presentation with a severe complication of ventricular rupture leading to death.

Case

A 77-year-old female with a history of hypertension and diabetes presented to the ER with sudden syncope. She stated she has been under extreme emotional stress due to the sudden death of a family member. The examination was unremarkable except for hypotension (70/40 mmHg), cold clammy extremities, faint peripheral pulses, and diaphoresis. The ECG revealed ST-segment elevation in anterior-septal leads with elevated troponin I level (3.390 ng/ml). The chest x-ray revealed an enlarged cardiac silhouette. She was started on vasopressor for cardiogenic shock and underwent emergent cardiac catheterization which revealed non-occlusive coronary artery disease, severe anterolateral hypokinesis, apical dyskinesis, and apical ballooning with estimated LVEF of 20% (Figures 1 & 2). Takotsubo cardiomyopathy was speculated.

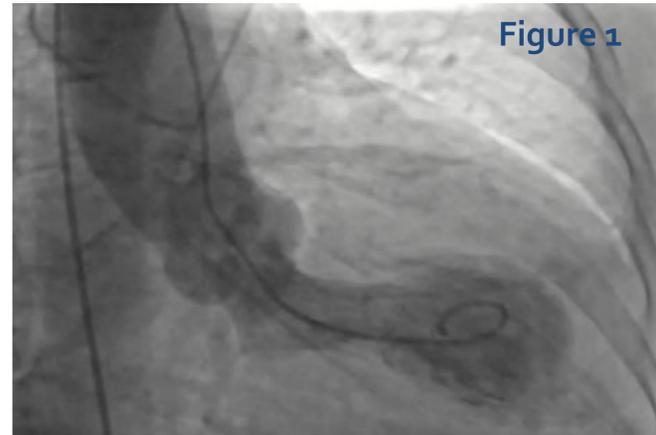


Figure 1: Coronary angiogram showing apical akinesis with basal hypokinesis.

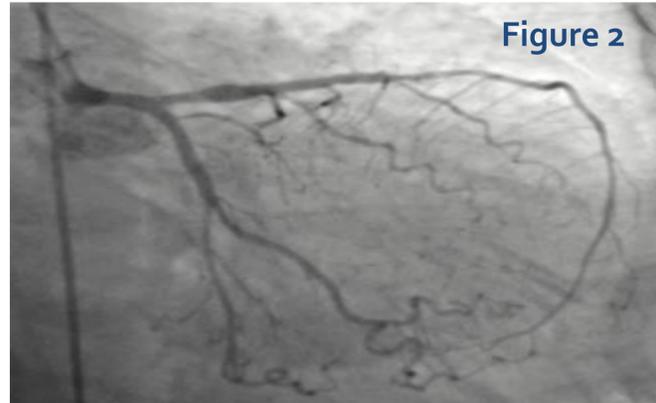


Figure 2: Coronary angiogram showing a non-occlusive single vessel disease.

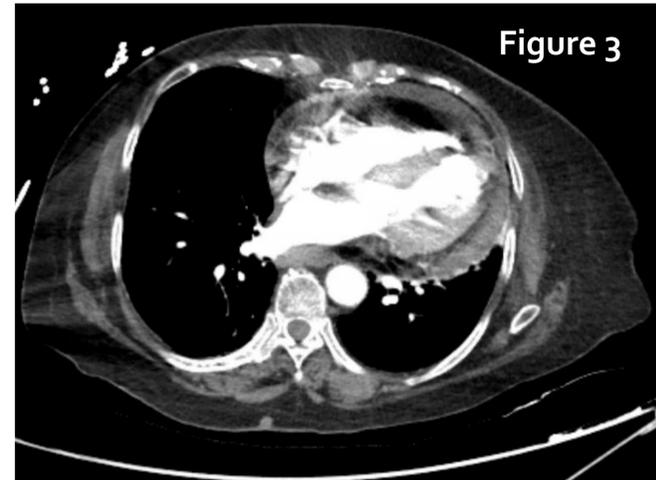


Figure 3: CT chest angiogram showing complex pericardial effusion compatible with hemopericardium.

Over the course of the admission, her chest pain persisted which was accompanied with severe back pain. The CT chest angiogram showed complex pericardial effusion compatible with hemopericardium (Figure 3). There was extravasation of contrast from the left ventricle into the pericardial space that was suspicious for ventricular wall rupture. The patient underwent emergent cardiothoracic surgery and was found to have left ventricular wall rupture which was repaired. The patient's condition rapidly deteriorated and she went into cardiac arrest. After extensive trials of cardiopulmonary resuscitation, the patient unfortunately expired.

Discussion

TCM has been established as an entity in the past 30 years. Typically, it occurs in middle-aged females as a response to an emotional or physically stressful event. TCM mimics acute myocardial infarction with EKG changes and elevated troponin.

This disorder may be caused by diffuse catecholamine-induced microvascular spasm or dysfunction, resulting in myocardial stunning, or by direct catecholamine-associated myocardial toxicity.

Ventricular wall rupture is a rare but significant complication. The risk factors for ventricular wall rupture in TCM include female gender, older age, and persistent ST-segment elevation. Initial EKG findings of persistently elevated ST-segment in patients with TCM can predict a more serious course of the disease progression and provide a valuable parameter for risk stratification.