

Takotsubo (Stress-Induced) Cardiomyopathy in a 77-Year-Old Patient Presenting with Chest Pain: A Case Report

Abstract:

Takotsubo cardiomyopathy (TCM), also known as stress-induced cardiomyopathy or "broken heart syndrome," is a rare but increasingly recognized clinical diagnosis characterized by transient left ventricular dysfunction, which mimics acute myocardial infarction. This case report details the presentation, diagnosis, and management of a 77-year-old male patient who presented with chest pain suggestive of acute coronary syndrome.

The patient, with a history of hypertension and type two diabetes, and no prior cardiac issues, arrived at the Reading Hospital emergency department complaining of sudden-onset substernal chest pain radiating to the left arm and shortness of breath. Initial electrocardiogram (ECG) findings indicated diffuse deep T-wave inversions, suggestive of inferolateral ischemia. In the setting of elevated troponins, there was a concern for non-ST segment elevation myocardial infarction (NSTEMI). An echocardiogram indicated an ejection fraction of 30%, with akinesis of the mid to apical segments, suggestive of a variant of Takotsubo cardiomyopathy or multivessel disease. However, coronary angiography revealed no significant coronary artery disease.

The left ventricular dysfunction in TCM classically presents with a distinctive apical ballooning pattern resembling a Japanese octopus trap, or "takotsubo," on imaging. In this case, the patient's echocardiogram demonstrated classic apical akinesis with an ejection fraction of 30%, further supporting the diagnosis. The management of Takotsubo cardiomyopathy involves supportive care, addressing the precipitating stressors – work-related in this patient's case, and monitoring for complications such as heart failure or arrhythmias. In this case, the patient also had reduced ejection fraction and therefore was managed with a beta-blocker, angiotensin-neprilysin inhibitor, statin, and anticoagulant in addition to a wearable defibrillator (Live Vest) to optimize cardiac function during the recovery process. The clinical course of the patient ended with a spontaneous recovery of left ventricular function within four months, highlighting the reversible nature of TCM.

This case emphasizes the importance of considering Takotsubo cardiomyopathy in elderly patients presenting with chest pain and ECG changes suggestive of myocardial infarction, especially in the absence of significant coronary artery disease. Early recognition and appropriate management are crucial for a favorable outcome, as TCM typically has a more favorable prognosis than acute myocardial infarction.

Keywords: cardiomyopathy, stress-induced, Takotsubo, myocardial infarction, coronary angiography