



## Clinical Case Report

# Cardiac arrest due to ventricular fibrillation in a 23-year-old woman with broken heart syndrome<sup>☆</sup>



Marco Giuseppe Del Buono<sup>a,d</sup>, Michael P. O'Quinn<sup>a</sup>, Paulo Garcia<sup>b</sup>, Enrique Gerszten<sup>b</sup>, Charlotte Roberts<sup>a</sup>, F. Gerald Moeller<sup>c</sup>, Antonio Abbate<sup>a,\*</sup>

<sup>a</sup> VCU Pauley Heart Center, Virginia Commonwealth University, Richmond, VA, USA

<sup>b</sup> Department of Pathology, Virginia Commonwealth University, Richmond, VA, USA

<sup>c</sup> Institute of Drug and Alcohol Studies, Virginia Commonwealth University, Richmond, VA, USA

<sup>d</sup> Campus Bio-Medico University, Rome, Italy

## ARTICLE INFO

## Article history:

Received 9 June 2017

Received in revised form 24 June 2017

Accepted 26 June 2017

## Keywords:

Cardiac arrest

Stress cardiomyopathy

Takotsubo

Broken heart Syndrome

Marijuana

## ABSTRACT

Broken heart syndrome, also known as takotsubo cardiomyopathy, is a syndrome characterized by a transient regional systolic dysfunction of the left ventricle associated to a psychological stress. We herein describe a case of a 23-year-old female habitual marijuana user who was resuscitated after cardiac arrest and then diagnosed with midventricular stress cardiomyopathy complicated by subendocardial hemorrhage. We discuss this unique pathological finding, the incidence of arrhythmias in this syndrome, and the possible relation with chronic cannabis and tobacco use. Unfortunately, the patient did not survive, but had she survived, the management of the patient for secondary prevention would have been challenging considering the risk of recurrence with this disease.

© 2017 Published by Elsevier Inc.

## 1. Introduction

Broken heart syndrome, also known as takotsubo cardiomyopathy, is a syndrome characterized by a transient regional systolic dysfunction of the left ventricle associated to a psychological stress and therefore constitutes a form of stress cardiomyopathy [1]. Patients with broken heart syndrome are most frequently women, presenting with chest pain and/or shortness of breath within hours or days of an emotional stress, frequently associated with electrocardiographic changes; elevation of markers of myocardial necrosis; large areas of akinetic myocardium involving circumferentially the apex, the base, or the midventricular segments in a noncoronary distribution, generally in the absence of obstructive coronary artery disease [2]. As such, these patients are classically diagnosed with the broken heart syndrome while being evaluated for possible acute myocardial infarction. Less often, however, the diagnosis of broken heart syndrome is less obvious. We herein describe a case of a 23-year-old female who was resuscitated after cardiac arrest and then diagnosed with midventricular stress cardiomyopathy.

## 2. Case report

A 23-year-old African-American woman was brought to the coronary intensive care unit after being resuscitated from cardiac arrest. The emergency medical personnel responding to the call found the patient in cardiac arrest with ventricular fibrillation as initial rhythm. The resuscitation efforts were very prolonged, lasting over 1 h. On admission to the coronary intensive care unit, she was comatose, hypotensive in shock, and in multiorgan failure, with evidence of hepatolysis, rhabdomyolysis, lactic acidosis, and renal failure. Therapeutic hypothermia was initiated for anoxic brain injury. Treatment with inotropes and vasopressor was initiated for hemodynamic support. A 12-lead electrocardiogram showed sinus tachycardia and mild ST depression in V1–V2 and mild ST elevation in V5–V6, non-specific abnormalities of ventricular repolarization in the lateral leads, and normal QTc interval (Fig. 1). The transthoracic echocardiogram showed normal ventricular size with moderate–severe left ventricular systolic dysfunction most prominent in the mid anterior wall (ejection fraction 20%–25%) and right ventricle of normal size and function (Fig. 2). Urgent coronary angiography was performed and showed no obstructive coronary artery disease, and the ventriculogram showed a regional akinesia localized to the mid segments with relative sparing of the base and the apex (Fig. 2). Left ventricular end-diastolic pressure was documented at 25 mmHg. Toxicology screen was negative for common drugs of abuse including cocaine, amphetamine, and opiates; nicotine and tetrahydrocannabinol were not included in the drug panel

<sup>☆</sup> All authors have read and approved the revised version of the manuscript. The manuscript is not under review elsewhere, and none of the paper's content has been previously published. There are no conflicts of interests inherent to the current manuscript to be disclosed in the Acknowledgments section.

\* Corresponding author at: VCU Pauley Heart Center, Virginia Commonwealth University, 1200 E. Broad street, Box 980204.

E-mail address: aabbate@vcu.edu (A. Abbate).

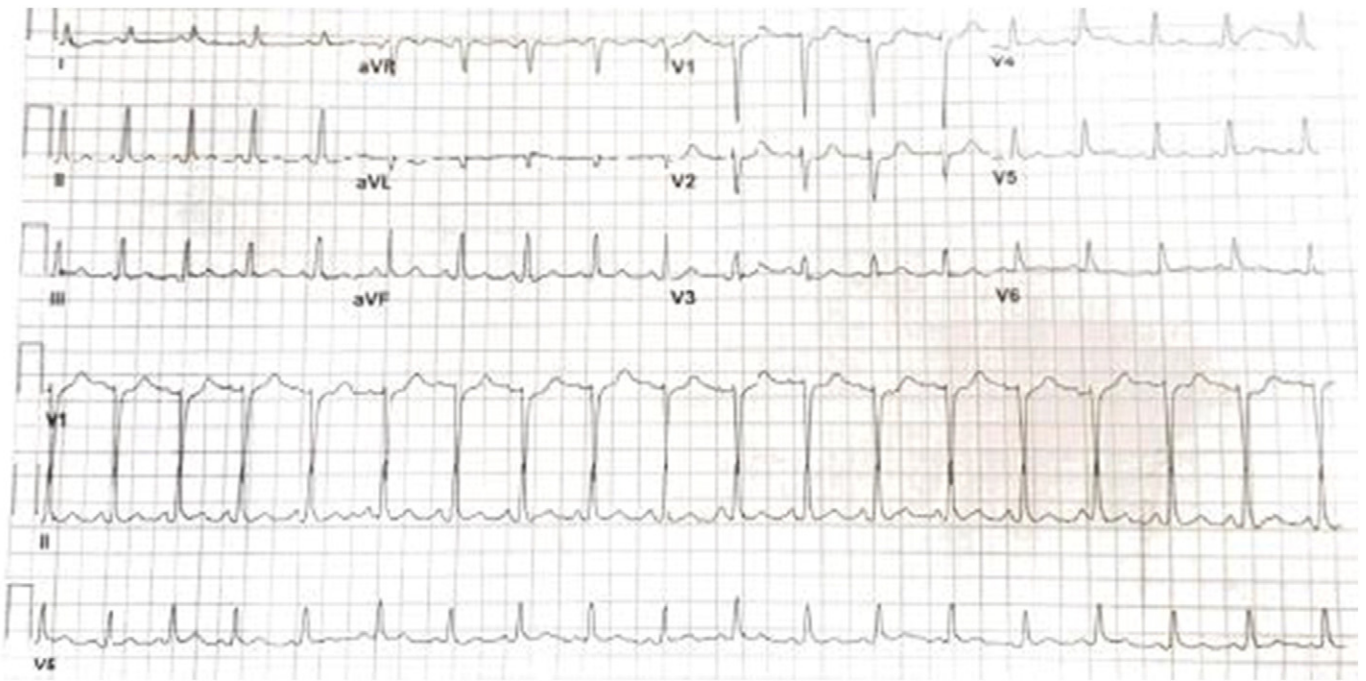


Fig. 1. Electrocardiogram obtained after resuscitation. Electrocardiogram shows nonspecific abnormalities of the ST segment and T wave.

testing. Recent and prior history was taken from family members at bedside. Patient had no past medical history and no family history of cardiovascular disease, and she was not taking any prescription medication. She was a daily user of marijuana and smoker of approximately 10 tobacco cigarettes per day for the prior 10 years. She had been under intense emotional stress in the prior days and had separated from her husband, leaving an abusive relationship. The day of the event, she had complained of substernal chest pain and nausea early in the morning and, approximately 1 h later, collapsed to the ground.

A diagnosis of broken heart syndrome/stress cardiomyopathy, midventricular pattern, was made [1,2]. The patient was transferred back to the coronary intensive care unit for supportive care. During hospitalization, the patient partially recovered cardiac function to left ventricular ejection fraction of 40%. Unfortunately, her neurologic function did not recover, and she was declared brain dead 5 days after admission. An autopsy revealed heart of normal dimension, presence of inflammatory infiltrates, myocardial necrosis, and sub-acute subendocardial hemorrhages dated to a few days old based on

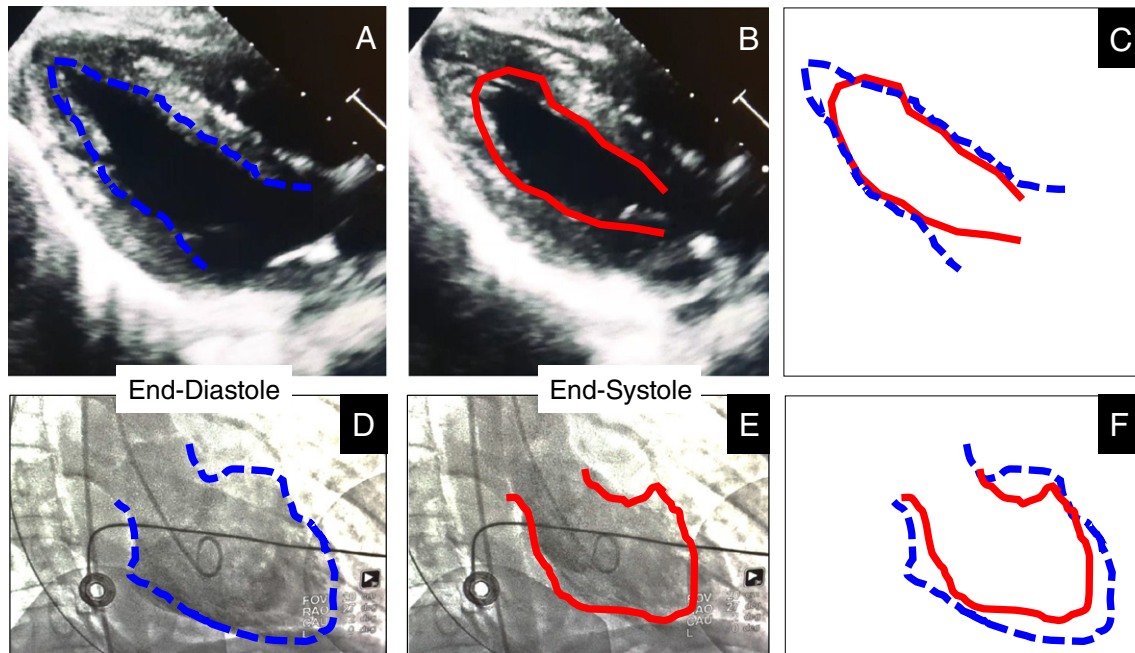


Fig. 2. Ventriculographic and echocardiographic assessment of cardiac function obtained at the time of admission. Transthoracic echocardiogram (A and B; parasternal long-axis view) and left ventricular contrast angiography (D and E; right oblique view) show akinesis of the midventricular segments in a noncoronary distribution, as reconstructed in C and F.

Download English Version:

<https://daneshyari.com/en/article/5600087>

Download Persian Version:

<https://daneshyari.com/article/5600087>

[Daneshyari.com](https://daneshyari.com)