Open Journal of Medical Images and Case Reports
Volume 1, Issue 2, 2024, PP: 22-24
www.aytinpublications.com

Case Report

"The Thrombus Before the Storm": A Rare Complication in Takotsubo Cardiomyopathy

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Abstract

Takotsubo cardiomyopathy is a cardiac condition often associated with a favorable prognosis. However, its acute phase can be complicated by severe adverse events. We describe a 70-year-old woman who presented with chest pain and dyspnea after returning from a trip abroad. Initial evaluation revealed ST-segment elevation on electrocardiogram and a left ventricular apical thrombus on echocardiography. Coronary angiography ruled out significant coronary artery disease, leading to a diagnosis of Takotsubo cardiomyopathy. Despite anticoagulation therapy, the patient suffered a transient ischemic attack, and ST-elevation myocardial infarction due to thrombotic occlusion of the left anterior descending artery. Treatment included reperfusion therapy and guideline-directed medical therapy. This case highlights the potential for severe thromboembolic complications in Takotsubo cardiomyopathy, underscoring the importance of close monitoring and early anticoagulation in patients with intraventricular thrombus.

Keywords: Takotsubo cardiomyopathy, thromboembolism, ventricular fibrillation, myocardial infarction, anticoagulation.

Aricle Information

Recieved: 11 December 2024

Accepted: 22 December 2024

Published: 30 December 2024

Cite this article as:

Sandra Oliveira-Mendes, Ricardo Jorge Sousa, Henrique Guedes, *et al.* "The Thrombus Before the Storm": A Rare Complication in Takotsubo Cardiomyopathy. Journal of Medical Images and Case Reports. 2024;1(2); 22-24.

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Introduction

Takotsubo cardiomyopathy (TC) is a reversible condition typically associated with a favorable prognosis[1]. However, recent studies report high complication rates during the acute and subacute phases, including heart failure, cardiogenic shock, malignant arrhythmias and thrombus formation[2-3]. We describe a case of TC followed by severe thromboembolic events.

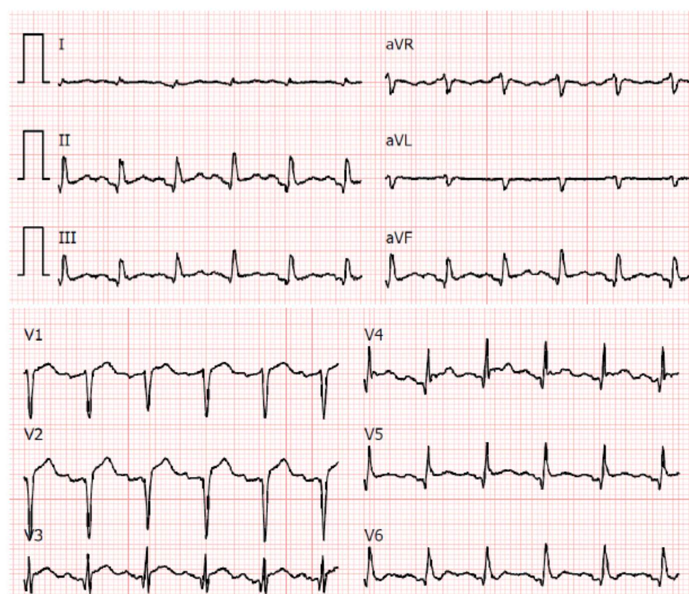

Figure 1. *Initial electrocardiogram: ST-segment elevation in the anterior leads and Q waves in V2.*

Clinical Case

We present the case of a 70-year-old woman with a medical history of dyslipidemia, well- controlled with medication, and intermediate hyperglycemia. She had returned the day before from visiting her sister in a foreign country. She was admitted to the emergency room with chest pain and new-onset dyspnea, which had been ongoing for 12 hours. An electrocardiogram (ECG) showed ST-segment elevation in the anterior leads and Q waves in V2 (Fig. 1A). Transthoracic echocardiography (TTE) revealed akinesia of the mid-apical segments of the left ventricle (LV), hypocontractility of the basal segments, and an apical thrombus. Coronary angiography ruled out coronary artery disease (Fig. 2). Anticoagulation therapy was initiated. Seventy-two hours later, the patient experienced a witnessed cardiac arrest due to ventricular fibrillation (VF). Advanced life support was promptly initiated, and spontaneous circulation was restored after 4 minutes. She developed new-onset hemiparesis, alongside ST-segment elevation in V2–V6 on ECG, but no thrombus was detected on TTE. Cranial computed tomography (CT) and cranioencephalic CT angiography excluded acute ischemic lesions or vascular occlusions. Repeat coronary angiography identified an occlusion of the left anterior descending artery (LAD) (Fig. 2B), which was successfully reperfused. Cardiac magnetic resonance imaging findings were consistent with TC and a myocardial infarction scar in the mid-distal LAD territory. Prognosis-modifying therapy was initiated, and segmental wall motion abnormalities resolved at six-month follow-up.

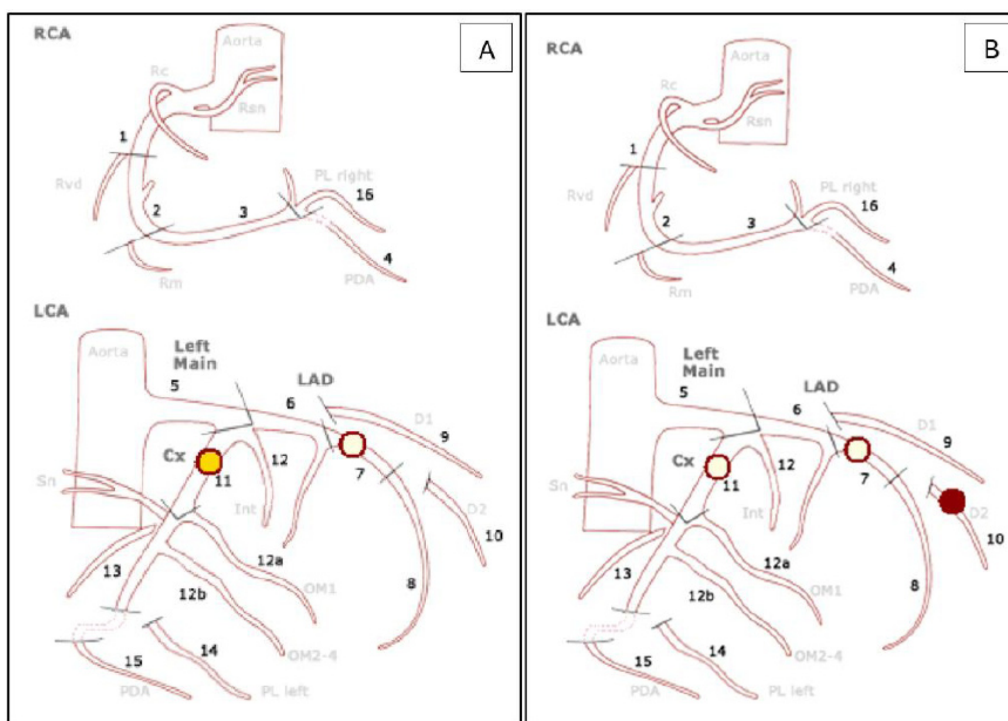

Figure 2. *(A) First coronary angiography: mild stenosis in the mid-segment of the left anterior descending artery and mild proximal stenosis in the circumffex artery, consistent with minor lesions. (B) Emergent coronary angiography after cardiac arrest: thrombotic occlusions observed in all branches of the left coronary artery; after the procedure, normalization of coronary ffow in all vessels except the second diagonal branch.*

Discussion

The diagnosis of TC with LV thrombus was established. Anticoagulation and serial TTE monitoring are recommended in such cases[4,5]. Despite these measures, two thromboembolic events occurred: ST-elevation myocardial infarction followed by VF and cardiac arrest, and a transient ischemic attack. While intraventricular thrombus formation is uncommon in TC patients, it can lead to catastrophic complications. Close monitoring is essential for prompt intervention in cases of systemic embolization[6].

Conflict of interest: The authors declare no conflict of interest.

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