

A Case of Stress-Induced Cardiomyopathy Triggered by an Emotional Crisis: Clinical Case Report

Boba Cherif Youssef^{1*}, Taleb Issa Mohamed Lemine², Sidi M'hamed Ely³, Boukefoussa Elghoul Zahiba⁴, Taieb Gérôme⁵

^{1,2,3}4th-year cardiology resident, Centre Hospitalier du Pays d'Aix (Hôpitaux de Provence) in France

⁴Hospital practitioner in cardiology at Centre Hospitalier du Pays d'Aix in France

⁵Head of the cardiology department at Centre Hospitalier du Pays d'Aix in France

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*Corresponding author: Boba Cherif Youssef

4th-year cardiology resident, Centre Hospitalier du Pays d'Aix (Hôpitaux de Provence) in France

Abstract

Case Report

We report the case of a 55-year-old woman admitted to the emergency department for acute chest pain. A few days to weeks before admission, the patient experienced significant emotional distress due to repeated marital conflicts that led to separation. This intense stress was accompanied by profound sadness and depressive symptoms. She subsequently developed severe chest pain, prompting her to seek medical attention. On arrival, the clinical examination was unremarkable. The electrocardiogram revealed negative T waves in the inferior and low septo-apicolateral territories. Echocardiography showed a left ventricular ejection fraction (LVEF) of 50% with apical hypokinesia. Coronary angiography demonstrated patent epicardial coronary arteries, while the left ventricle displayed the characteristic appearance of apical ballooning with basal hyperkinesia and mid-apical hypokinesia. After appropriate psychiatric management, the patient's condition improved, her pain resolved, and complete recovery of left ventricular function was observed.

Keywords: Takotsubo cardiomyopathy, emotional stress.

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INTRODUCTION

Stress-induced cardiomyopathy, also known as Takotsubo cardiomyopathy, is characterized by transient left ventricular dysfunction and regional wall-motion abnormalities leading to a decrease in left ventricular ejection fraction (LVEF), typically following severe emotional or physical stress. The syndrome is more frequently observed in postmenopausal women and is thought to be secondary to a catecholamine surge.

Acute stress is a well-recognized trigger of transient Takotsubo syndrome. Notably, the majority of patients reported in the literature are postmenopausal Japanese women presenting with ischemic-type chest pain shortly after an intense emotional or physiological stressor.

We report here the case of a 55-year-old woman who developed stress-induced cardiomyopathy triggered by an emotional crisis.

CASE PRESENTATION

A 55-year-old woman with cardiovascular risk factors (type 2 diabetes and active smoking) presented to the emergency department with chest pain that occurred in a context of emotional stress. On arrival, systolic blood pressure was within normal limits. The ECG revealed negative T waves in the inferior and low septo-apicolateral territories. Blood tests showed elevated troponin levels (590 mEq/L) and BNP (350 pg/mL).

Echocardiography demonstrated an LVEF of 50% and apical hypokinesia. Cardiac catheterization revealed normal coronary arteries (Figures 3 and 4). Cardiac MRI showed features compatible with Takotsubo cardiomyopathy. The patient was evaluated by a psychiatrist, and after one week, her symptoms resolved and her condition significantly improved, with full clinical recovery and normalization of LVEF.

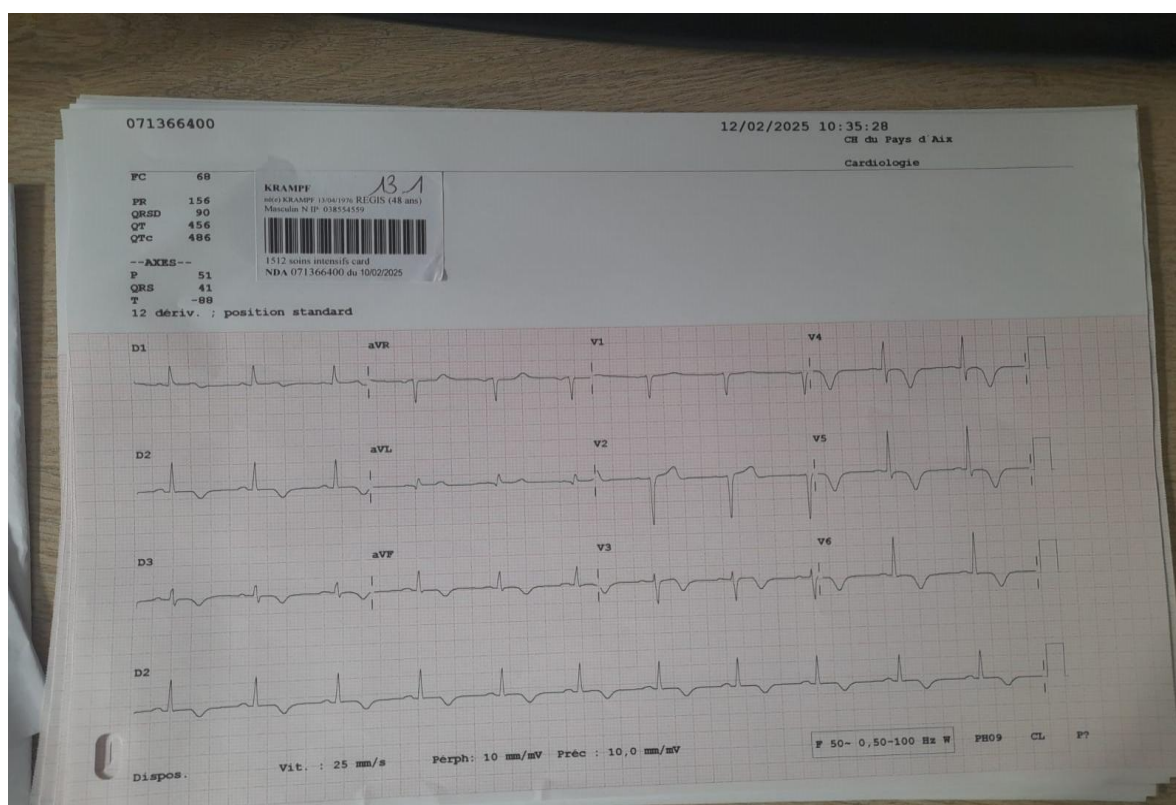


Figure 1: ECG showing sinus rhythm, negative T waves in the septo-apico-lateral and inferior leads

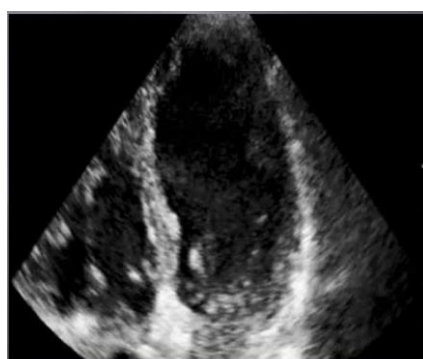


Figure 2: Transthoracic echocardiography, parasternal apical 4-chamber view, showing preservation of left ventricular systolic function and hypokinesis in the apical segment



Figure 3: Coronary angiography of the left coronary system, performed in right anterior oblique projection with caudal angulation. It shows the patency of the left anterior descending and circumflex arteries.



Figure 4: Coronary angiography of the right coronary system in left anterior oblique position showing a patent right coronary artery

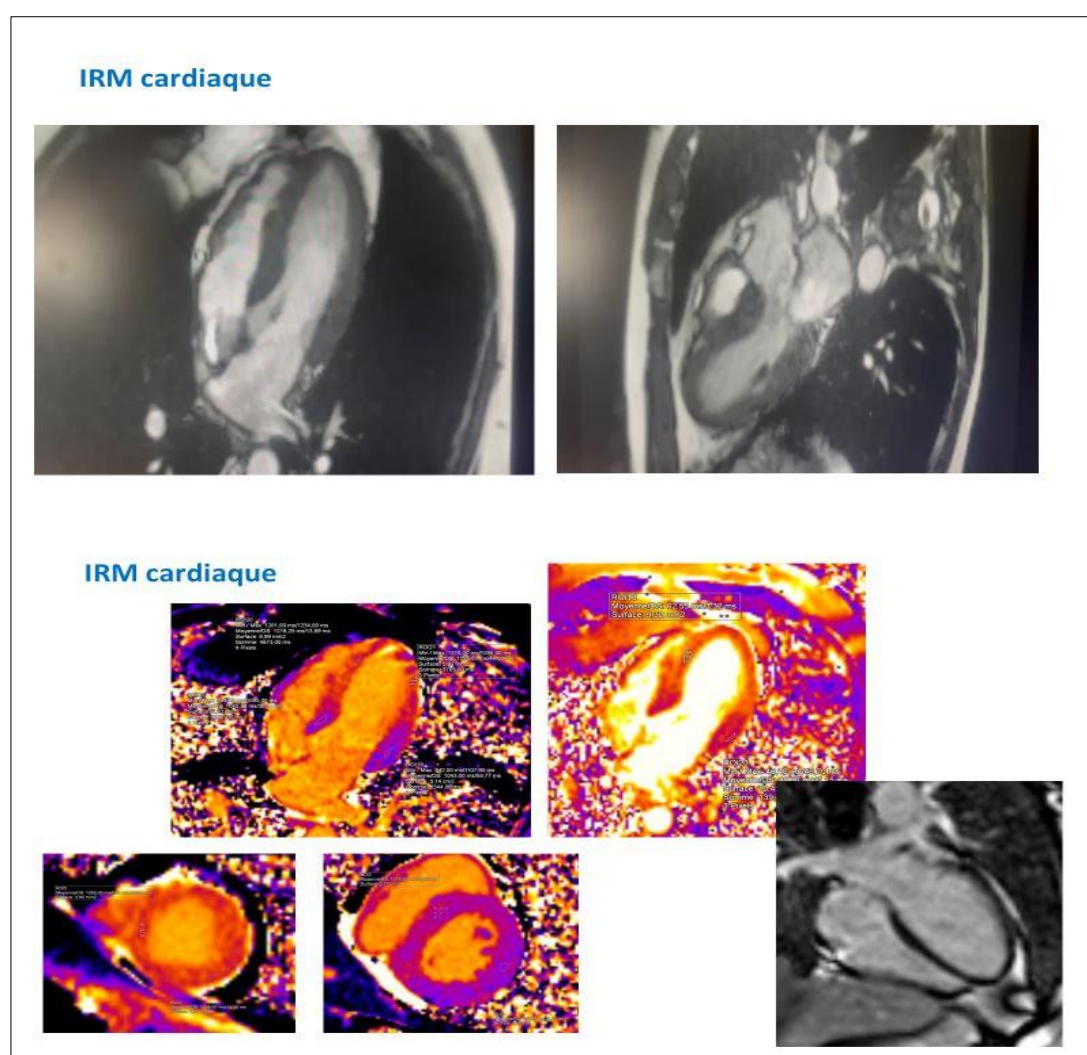


Figure 5: IRM cardiaque

DISCUSSION

Stress-induced cardiomyopathy, also known as Takotsubo cardiomyopathy, was first described in Japan in 1990 and has since become widely recognized. It is characterized by transient left ventricular dysfunction

and wall-motion abnormalities typically following intense stress. The condition is more common in postmenopausal women, likely due to the myocardial effects of catecholamine surges.

Clinical presentation ranges from acute chest pain to fulminant heart failure. ECG abnormalities and cardiac biomarker elevations often mimic acute coronary syndrome, although coronary angiography is normal. Echocardiography typically reveals apical ballooning with basal segment preservation, but other patterns such as inverted or atypical Takotsubo variants have also been documented.

This syndrome is frequently triggered by emotional or psychological stress, especially in postmenopausal women. Although earlier studies emphasized emotional triggers, more recent data highlight the role of physical stressors and even cases without identifiable triggers. The prevalence of physical triggers now appears to exceed that of emotional triggers, and the absence of a triggering factor does not rule out the diagnosis.

CONCLUSION

Given the potential severity of complications associated with Takotsubo cardiomyopathy, this case highlights the importance of close monitoring of patients experiencing anxiety or significant psychological distress, particularly in the early stages.

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