UNLOCKING THE FLIPSIDE HEART: DEMYSTIFYING REVERSE TAKOTSUBO CARDIOMYOPATHY

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INTRODUCTION

- Takotsubo cardiomyopathy is a cardiac syndrome marked by acute and often reversible Left Ventricular (LV) dysfunction triggered by extreme emotional or physical stress.
- The clinical presentation is similar to an Acute Coronary Syndrome (ACS), with no evident obstructive coronary artery disease.
- Reverse Takotsubo Cardiomyopathy (rTTC) is a rare variant that is characterized by basal akinesis/hypokinesis associated with apical hyperkinesis that resolves spontaneously, as opposed to apical ballooning seen in Typical Takotsubo Cardiomyopathy.
- Recognizing this unconventional pattern is imperative for precise diagnosis and effective management.

OBJECTIVE

- The objective is to outline Reverse Takotsubo Cardiomyopathy, emphasizing its clinical significance, distinct characteristics, while also highlighting its differentiation from typical Takotsubo Cardiomyopathy.

CASE DESCRIPTION

- 35-year-old female presented with complaints of chest pain, palpitations and confusion. She had been experiencing occasional chest discomfort lately, which she initially disregarded. She had a known history of anxiety and drug abuse. There was a positive family cardiovascular history- her mother had a sudden cardiac death,

- Blood Tests: Elevated troponin (8.85 ng/mL) and pro-BNP levels.
- CT Head: No pathological findings.
- ECG: ST elevation in V1-V4
- Toxicology Screening: Confirmed presence of illicit substances - amphetamine and benzodiazepines. Established a history and recurrent pattern of drug abuse.
- Cardiac Angiogram: Clear coronaries.
- Echocardiogram (ECHO): Revealed hypokinesis in basal left ventricular segments with apical sparing, typically indicative of rare reverse takotsubo cardiomyopathy (rTTC).

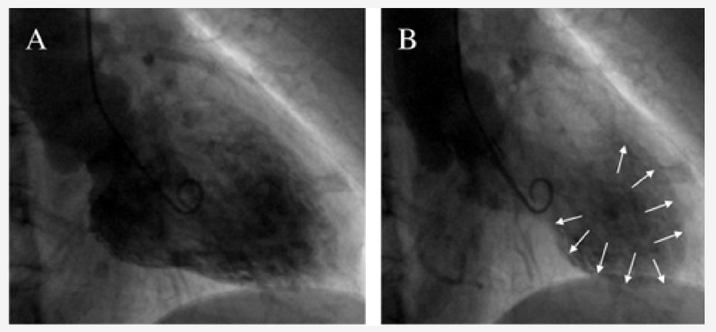
Based on the clinical presentation, diagnostic findings, and cardiac evaluation, the patient was diagnosed with reverse takotsubo cardiomyopathy (rTTC), likely precipitated by substance abuse (amphetamines).

DISCUSSION

- Takotsubo cardiomyopathy and reverse Takotsubo cardiomyopathy (rTTC) are two related but distinct conditions with various differences.

Type	Typical Takotsubo Cardiomyopathy	Reverse Takotsubo Cardiomyopathy (rTTC)
PATHOGENESIS	1. Emotional or physical stress 2. Catecholamine-induced toxicity 3. LV dysfunction	
PRESENTATION	Mimics heart attack symptoms, such as chest pain, shortness of breath, ECG changes, and increased cardiac enzymes, often triggered by identifiable triggers.	
COMMON ETIOLOGIES/ TRIGGERS	1. Physical and emotional stressors	1. Physical and emotional stressors 2. More exclusive causes such as Intracranial bleed, Substance abuse, Serotonin syndrome and Neurological conditions
ASSOCIATIONS	1. Pulmonary edema 2. Cardiogenic shock	1. Co-occurring acute psychiatric episode
INCIDENCE	1. More commonly reported	1. Less common and less frequently reported
DEMOGRAPHICS	1. Elderly women, post-menopausal, typically aged 65-70	1. Younger women, premenopausal
REGIONAL WALL ABNORMALITIES / ECHO FINDINGS	1. Apical ballooning of the left ventricle 2. Apex appears enlarged and hypokinetic 3. The base of the left ventricle contracts normally	1. Basal and midventricular segments exhibit hypokinesis or akinesis. 2. Apical portion of the left ventricle is spared
EJECTION FRACTION	1. Weakens left ventricle apex reducing ejection fraction.	1. Weakens heart base maintaining higher ejection fraction.
MANAGEMENT	1. May treat as ACS initially 2. Supportive Treatment 3. Address the underlying emotional/physical trigger 4. Treat complications,if any	

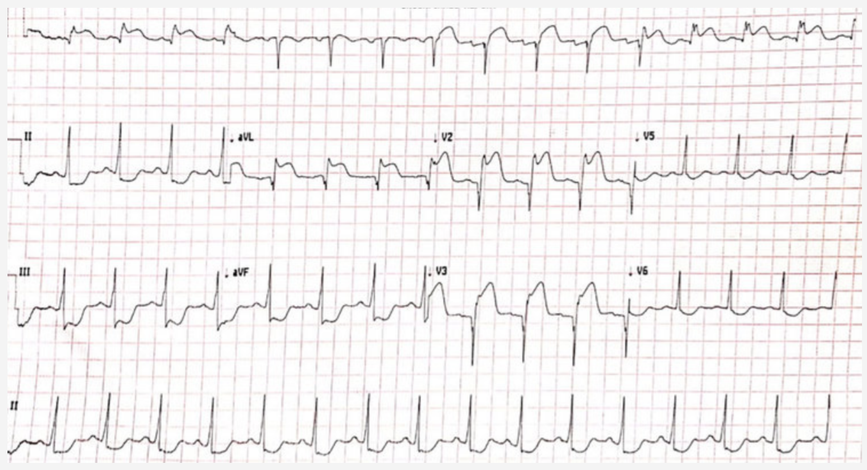
Left ventriculogram of reverse-takotsubo cardiomyopathy in diastole (Pic A) and systole (Pic B). Arrow denotes normal ventricular movement in the apical segments. The basal segments remain hypokinetic.

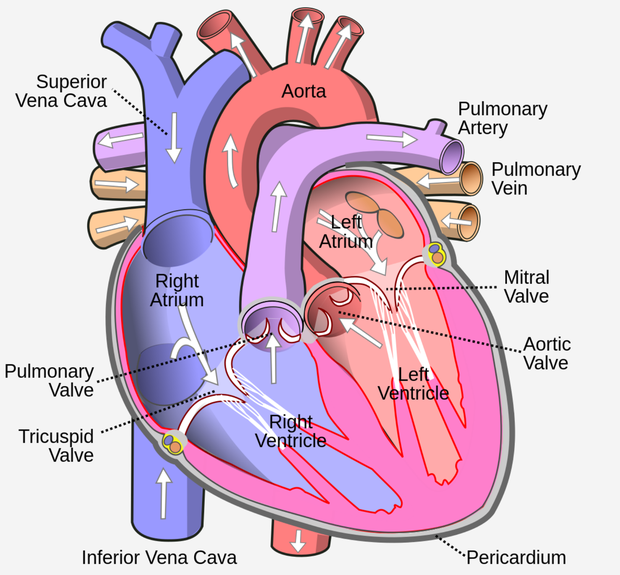


Left ventriculogram of Typical Takotsubo Cardiomyopathy in diastole (Pic A) and systole (Pic B). Arrow denotes akinesis in the mid and apical portions of the LV chamber along with hypercontraction of the basal LV.

DIAGNOSIS CRITERIA FOR RTTC

- Transient abnormal wall-motion in the form of hypokinesis, akinesis, or dyskinesis of the LV basal segments, with the regional effect extending beyond a single epicardial vascular distribution.
- No detectable obstructive coronary disease or angiographic evidence of acute atheromatous plaque rupture.
- Newly developed ECG abnormalities or elevation in cardiac troponin levels.
- Absence of myocarditis or pheochromocytoma





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