

## Takotsubo Cardiomyopathy in Postpartum- A case report

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### Abstract

A 22 yr old postpartum female after a twin vaginal delivery presented with shortness of breath grade 2-4 NYHA, grade 3 pedal edema and basal crepitations is diagnosed to have Takotsubo cardiomyopathy. A young age of 22 years is uncommon for this disease and stressor might be twin vaginal delivery in this case. However patient showed significant improvement within a week and showed complete recovery within 2 months.

### BACKGROUND

Takotsubo cardiomyopathy (TTC) was first described by Japanese in 1990 by Sato<sup>[1]</sup> because of the resemblance between takotsubo (name of octopus trap in Japanese) with left ventricular appearance during systole. Disease has acquired multiple names like stress cardiomyopathy, apical ballooning syndrome and broken heart syndrome<sup>[2]</sup>. TTC is triggered by physical or emotional stressors and is characterised by reduction in left ventricular ejection fraction (LVEF) associated with balloon like wall motion abnormality, typical hypokinesia in apical segment, hyperkinesia in the basal segments in the absence of typical coronary artery disease<sup>[3,4,5]</sup>. TTC is a transient LV dysfunction and recovers within few days to weeks.

### CASE PRESENTATION

A 22yr old primigravida with term twin gestation delivered by normal vaginal delivery presented with shortness of breath grade 2-4 on postpartum day 1 and history of grade 3 pedal edema since a week. No comorbidities associated. Chest auscultation revealed basal crepitations bilaterally.

leading to secondary hypertension, retinopathy, cardiac pathology, stroke and even premature death. Infiltration of the adventitia of affected vessels by mononuclear cells is seen

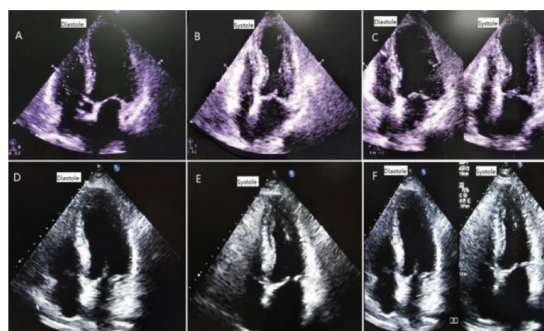
### INVESTIGATIONS AND TREATMENT

Cardiac examination at admission showed elevated troponin I (2.3 pg/ml), elevated creatine phosphokinase (CPK), Creatine kinase (CK) levels (180 U/L). Emergency bedside transthoracic echo (TTE) showed left ventricular ballooning, apical dyskinesia and abnormal diastolic function (LVEF being 30% by Simpson's method) (fig 1 a,b,c). Coronary arterial angiography (CAG) performed 2 days later found no coronary arterial stenosis (fig

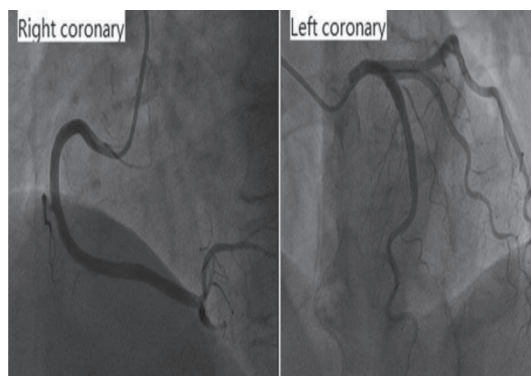
2) but left ventricular angiogram demonstrated the typical apical LV wall motion abnormalities and a peculiarly shaped LV (a round bottom and a narrow neck). Therefore patient was diagnosed with Takotsubo cardiomyopathy and treated with beta blocker, ACE-I and a diuretic

### OUTCOME AND FOLLOWUP :

Patient had regular follow up and showed complete recovery within 2 months.



**Fig1** a,b,c four chamber view of TTE showing ventricular ballooning caused by apical dyskinesia. d) LV apical ballooning was recovered after 7 days of treatment. e) No LV apical ballooning after treatment



**Fig 2.** CAG demonstrating no significant coronary obstructive stenosis, both right and left coronaries were normal

**DISCUSSION**

The mechanism of TTC are not clear but likely related to increased plasma concentrations of catecholamines because most cases have recent physical or psychological stressors<sup>[6,7]</sup>. TTC occur mainly in postmenopausal women<sup>[8]</sup>. It was found that 86% of cases were women and only 14% were men. Previous studies evaluating risk factors of TTC have suggested that the syndrome is mainly associated with a stressful event, surgery or acute clinical illness such as migraine, affective disorders, neurological disorders, cancer and psychiatric disorders but rarely with cardiovascular risk factors<sup>[9]</sup>. Presentations include pulmonary edema, hypotension and chest pain with ECG changes mimicking acute infarction. The left ventricular ejection extends beyond specific coronary artery distribution and generally resolves within days to weeks. CAG may be required to rule out acute coronary occlusion. While the prognosis is generally good recurrences have been described in 10% of patients.

**LEARNING POINTS**

- Takotsubo cardiomyopathy typically occurs in older women after sudden intense emotional or physical stress
- This is a case of 22yr old female with TTC where normal vaginal twin delivery might be the stress
- Positive troponin, normal coronaries, LV apical ballooning on echo, reduced LVEF and LV angiogram showing typical LV apical wall motion abnormalities with a peculiar shaped LV (round bottom and a narrow neck is diagnostic of TTC
- It is a reversible cardiomyopathy.

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