Mid-ventricular takotsubo cardiomyopathy triggered by major depressive disorder after abortion

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DESCRIPTION

A 28-year-old gravida 7 para 5 woman presented from an outlying facility with non-radiating, crushing, severe left-sided chest pain. She was initially treated for a non-ST elevation myocardial infarction with ECG evidence of T wave inversions in leads II, III, aVF, V5, V6 and an abnormal troponin level at 0.56 ng/mL. Accordingly, left heart catheterisation was performed emergently and revealed normal coronary arteries without any obstruction (figure 1). Left ventriculography showed mid-ventricular hypokinesis with hyperdynamic apical and basal wall contraction, consistent with a mid-ventricular takotsubo cardiomyopathy (TCM) (video 1). The ejection fraction was estimated at 30%–35%.

Medical history was significant for an elective abortion performed by dilation and curettage at 12 weeks of pregnancy (8 weeks prior to presentation), followed by new-onset depression and suicidal ideation. She was not taking any medications at home. She denied alcohol consumption or tobacco use. A toxicology screen was negative for cocaine and amphetamines.

There were no clinical signs of heart failure. She was treated medically with carvedilol, lisinopril and spironolactone. The psychiatry and obstetrical teams evaluated her during her hospitalisation. She was eventually discharged home in stable condition after optimisation of cardiac management and improvement of her psychological state.

TCM, also known as acute ballooning syndrome, is defined as transient left ventricular dysfunction without evidence of coronary artery obstruction, occurring commonly in response to a strong emotional stressor. The prevalence is highest in postmenopausal women. Nevertheless, TCM is increasingly being reported in younger women, especially during pregnancy and the peripartum period. It is important to differentiate this condition from myocardial infarction (including plaque rupture, coronary spasm, coronary thrombus, coronary embolism and spontaneous coronary dissection), pulmonary thromboembolism, amniotic fluid embolisation and peripartum cardiomyopathy. The majority of such cases occurred in the perinatal period and was associated with delivery via caesarean section.

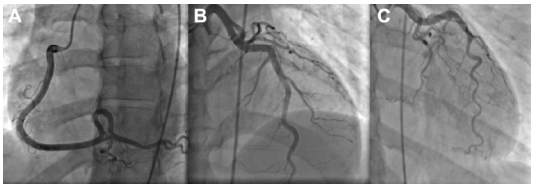
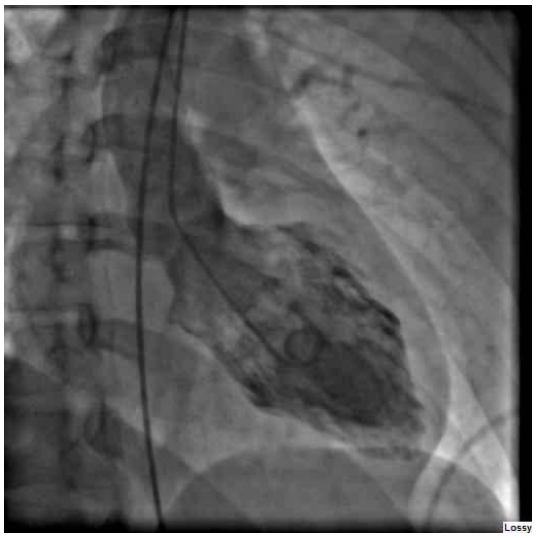


Figure 1 Coronary angiogram showing normal coronary arteries. (A) Left anterior oblique 30 view. (B) Right anterior oblique 10 cranial 40 view. (C) Left anterior oblique 45 caudal 25 view.



Video 1 Left ventriculogram.

In addition to emotional stress, the role of vasopressors has been hypothesised as a possible pathophysiological factor. The use of vasopressors is frequently applied to counterbalance anaesthesia-induced hypotension.[1] Hefner *et al* reported a case of premenopausal women with fourfold TCM related to chronic term post-traumatic distress, triggered by previous miscarriage.[2] The common denominator with our case is distress related to pregnancy loss.

To the best of our knowledge, we report the first case of TCM related to stress evoked by an elective abortion.

Typically, an elective abortion is a minimally invasive and relatively safe procedure. The National Center for Chronic Disease Prevention and Health Promotion reports 186 abortions per 1000 live births in USA (2014). Our patient reported a depressed mood and suicidal ideation after the procedure, which may have generated an emotional trigger leading to TCM. The medical recommendation regarding subsequent pregnancies remains controversial, and often depends on the recovery of left ventricular systolic function. This case report highlights the importance of an enhanced clinical awareness about this rare complication and the role of a multidisciplinary care team in treating such patients.

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Learning points

- Takotsubo cardiomyopathy (TCM) in the perinatal period needs to be differentiated from myocardial infarction, pulmonary thromboembolism, amniotic fluid embolisation and peripartum cardiomyopathy.
- An elective abortion followed by emotional distress may trigger TCM.
- There are no current clear recommendations regarding subsequent pregnancies for patients with a history of TCM.

Contributors YA, DMZ and AH were the physicians in charge of the patient throughout hospitalisation and follow-up. YA and AH were responsible for performing, diagnosing and discussing the imaging studies of the patient. YA and DMZ prepared the manuscript draft, which was critically revised by AH and approved by all authors.

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