

Broken Heart! Surprised to Know Why!

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DOI: <https://doi.org/10.58624/SVOAMR.2024.02.010>

Received: December 23, 2023 **Published:** March 27, 2024

Abstract

A 70-year-old female attended the emergency department with cardiac sounding chest pain, cough, new concerning ECG changes and recent history of long flight. Her cardiac enzymes were elevated raising the suspicion of Acute Coronary syndrome. She was taken for urgent percutaneous coronary intervention which did not reveal any significant obstructive coronary artery disease however, ventriculogram revealed severe left ventricular systolic dysfunction (LVSD) with typical apical akinesis resembling takotsubo. A transthoracic echocardiogram confirmed severely reduced left ventricular ejection fraction. In addition, she was also treated for pneumonia which was the possible trigger of the event.

Keywords: Takotsubo cardiomyopathy, Ventricular dysfunction, Broken heart syndrome.

Introduction

Takotsubo cardiomyopathy, also known as stress cardiomyopathy and "broken heart syndrome," is a sudden, transient cardiac syndrome that involves dramatic left ventricular apical akinesis and mimics acute coronary syndrome (ACS).

The word 'takotsubo' comes from the name of a pot used by Japanese fishermen to trap octopuses. When the left ventricle of the heart changes shape, it develops a narrow neck and a round bottom making it look similar to the octopus' trap. It is commonly accompanied with an emotional stressor- like- recent bereavement. It accounts for about 1-2% of all cases of suspected acute coronary events but its true prevalence is unknown. (1-2)

Case Presentation

A 70-year-old female attended the emergency department following an urgent referral by her GP.

She lives alone independently. She has never smoked and drinks moderate amount of alcohol. She has the medical history of non-insulin dependent Type 2 diabetes mellitus, hypertension, primary hyperparathyroidism, cerebral palsy and total abdominal hysterectomy with bilateral salpingo-oophorectomy.

She was referred on suspicion of acute coronary event with cardiac sounding chest pain for 3 days, a dry cough and new concerning ECG changes. Symptoms developed soon after her arrival from a long-haul trip from Australia. Her physical examinations were stable and unremarkable, and serial ECGs showed dynamic ST-T wave abnormality with raised cardiac enzymes.

Subsequently, with a high suspicion of acute coronary event, she was taken for urgent percutaneous coronary intervention which surprisingly did not reveal any significant obstructive coronary artery disease. However, ventriculogram revealed severe left ventricular systolic dysfunction (LVSD) with typical apical akinesis resembling takotsubo.

A transthoracic echocardiogram confirmed non-dilated severely reduced left ventricular ejection fraction approximately 30% with akinetic apex-all mid to apical walls. In addition, she was also treated for pneumonia based on the chest radiograph and raised inflammatory markers. An cardiac MRI was also planned but because of very typical findings in ventriculogram, cardiac MRI was not warranted for confirming diagnosis.

Based on the above, the diagnosis of takotsubo cardiomyopathy was confirmed which is a rare but important differential in patients presenting as ACS. Although, no definitive emotional stressor was identified, this patient had lung infection which seems to be a predisposing stressor in this case of takotsubo cardiomyopathy or 'broken heart syndrome'.

Discussions

This is an important case which illustrates the importance of comprehensive assessment and correct diagnosis amidst common differentials related to chest pain in a 70-year-old female. In this case, the presentation was very typical of acute cardiac event and subsequent bloods investigations and ECG findings were also indicative of the same. Many a time without high clinical suspicion this kind of patient can be treated as NSTEMI conservatively. If angiogram doesn't show any obstructive coronary artery pathology and ventriculogram is not performed, there is a high chance that this patient would never be diagnosed correctly and would never be properly managed. Most of the cardiac events/damage are irreversible and managements are mostly focused on preventive measures. Takotsubo cardiomyopathy is one of the cardiac events which can recover completely in most cases and proper follow up is extremely important. Also, if there is high clinical suspicion, a cardiac MRI should be performed for the confirmation of the diagnosis. MRI should be performed early rather than later, because as it is a reversible condition, MRI performed later of the event might not show features of TM cardiomyopathy. (1-2)

Conclusion

Post-menopausal women presenting with atypical chest pain should have a wide differential diagnosis including takotsubo cardiomyopathy. Though initially patients can develop very severe left ventricular systolic dysfunction, 95% cases recover completely on repeat study. Not all cases of takotsubo cardiomyopathy are associated with emotional trigger like recent bereavement. A broad consideration of different stressors should be considered alongside obtaining correct diagnosis in this group of patients.

Conflict of Interest

The authors declare no conflict of interest.

Acknowledgement

None

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Citation: Nag SK, Nehikhare I, Bose S. Broken Heart! Surprised to Know Why!. *SVOA Medical Research* 2024, 2:1, 08-09.

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