

Beyond the Usual: A Rare Postpartum Variant of Takotsubo Cardiomyopathy

Dr Amr Alaa Lila, Miss Aylur Rajasri.
QEQM Hospital, East Kent Hospitals
University NHS Foundation Trust, United
Kingdom



Introduction

Takotsubo cardiomyopathy (TTC), also known as stress-induced or “broken heart” syndrome, is an acute, reversible cardiac condition characterized by transient left ventricular dysfunction, typically following physical or emotional stress [1]. While the classic form presents with apical ballooning, rare variants such as the mid-ventricular type account for less than 20% of cases and can be diagnostically challenging [2]. The postpartum period represents a unique physiological state with heightened vulnerability to cardiac complications, making awareness of rare TTC variants crucial for timely recognition and management [3].

Objectives

- ✓ Present a rare case of mid-ventricular Takotsubo cardiomyopathy occurring in the immediate postpartum period.
- ✓ Highlight the diagnostic challenges and the importance of distinguishing this condition from acute coronary syndrome and peripartum cardiomyopathy.
- ✓ Emphasise the critical role of advanced imaging, particularly cardiac MRI, in confirming the diagnosis and guiding management.

Discussion

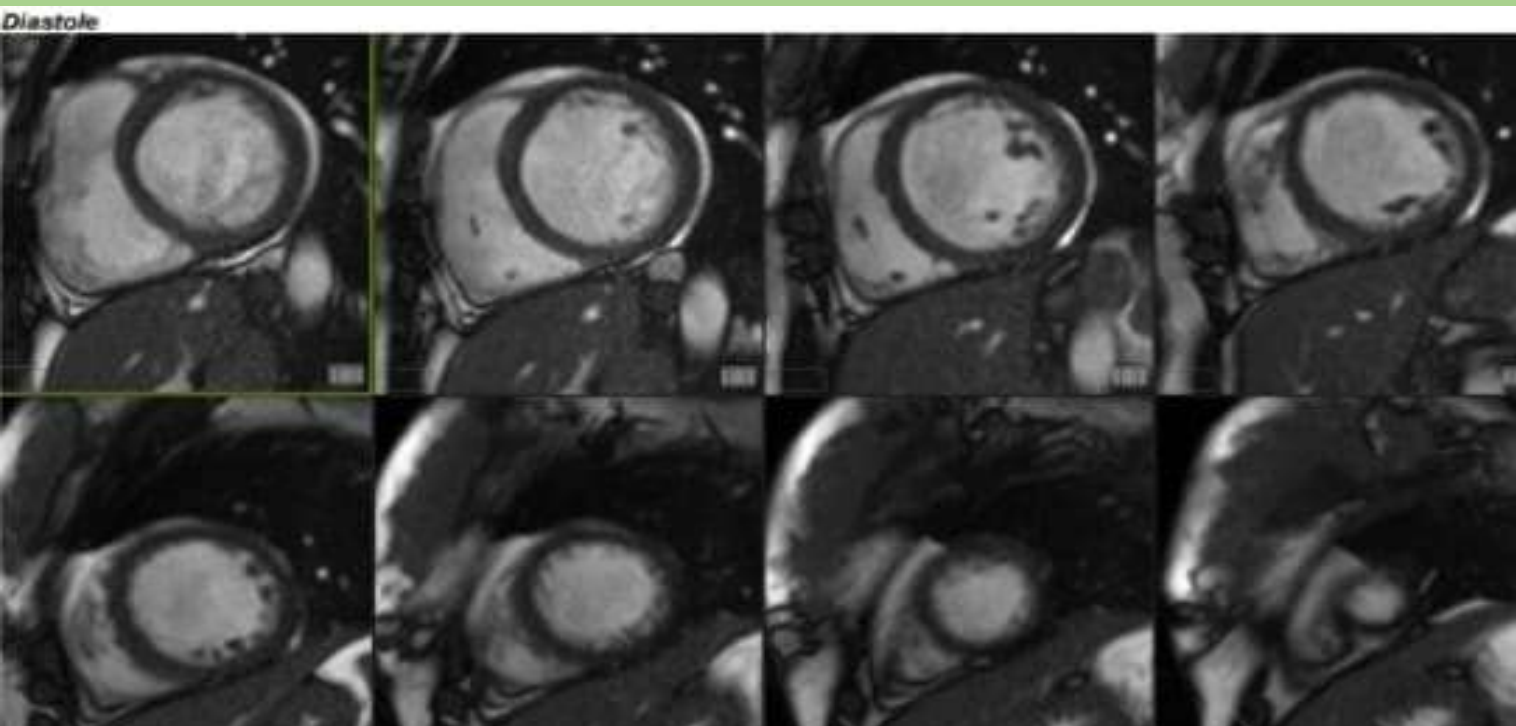
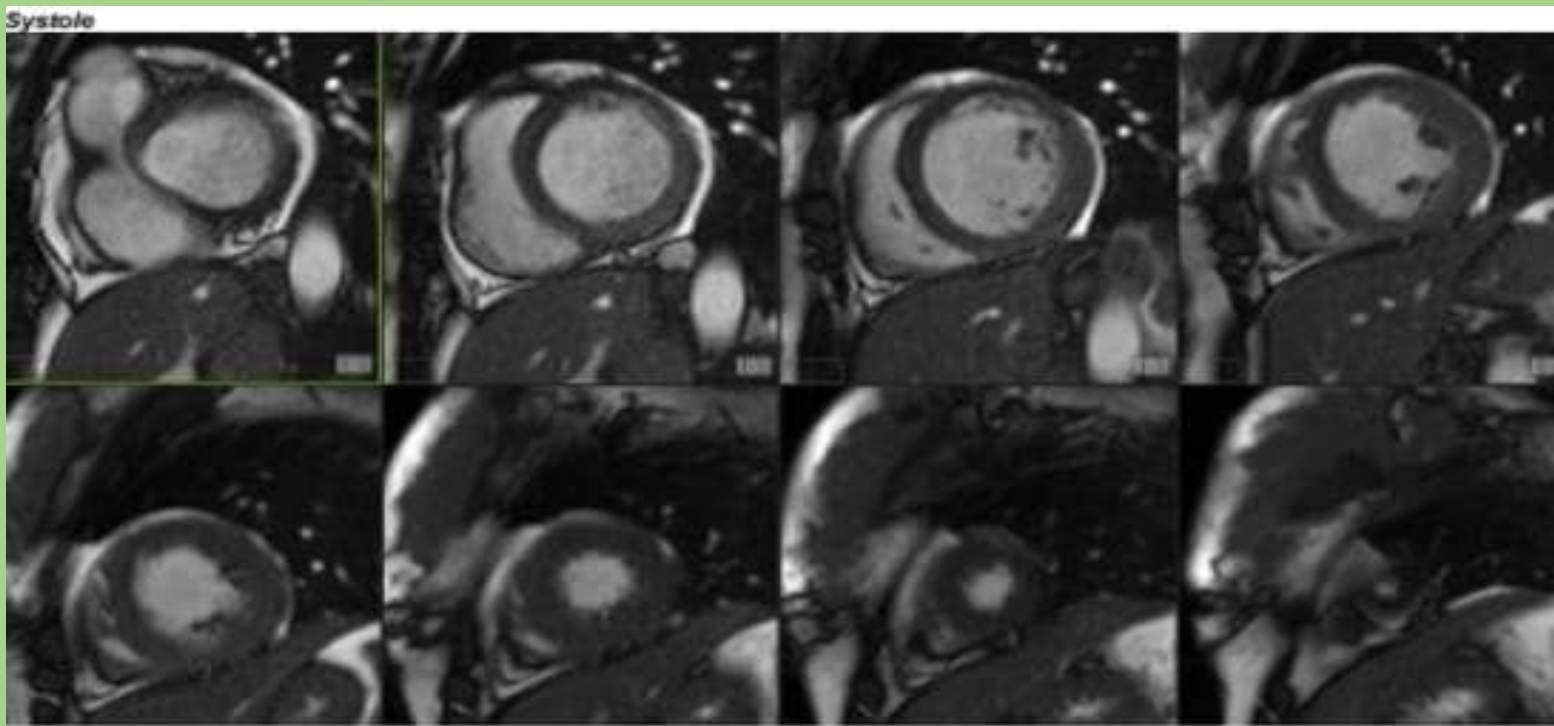
This case illustrates the diagnostic and management challenges of mid-ventricular Takotsubo cardiomyopathy in the postpartum setting. The patient presented shortly after delivery with central chest pain, elevated troponin, and ECG changes, raising concerns for acute coronary syndrome or pulmonary embolism. However, coronary imaging and CT pulmonary angiography were unremarkable, prompting further evaluation. Cardiac MRI was pivotal in confirming the rare mid-ventricular variant of Takotsubo cardiomyopathy, allowing for tailored management with beta-blockers and close follow-up. Follow-up MRI demonstrated full recovery, consistent with the typically reversible nature of Takotsubo cardiomyopathy. Importantly, the earlier antenatal presentation at 15 weeks’ gestation with chest discomfort and palpitations — initially attributed to anxiety — may have signalled an underlying vulnerability to cardiac stress, unmasked by the hormonal and physiological strain of labour and delivery. This underscores the need for heightened clinical awareness, thorough follow-up, and multidisciplinary counselling when planning future pregnancies, including pre-pregnancy echocardiographic assessment.

Case Report

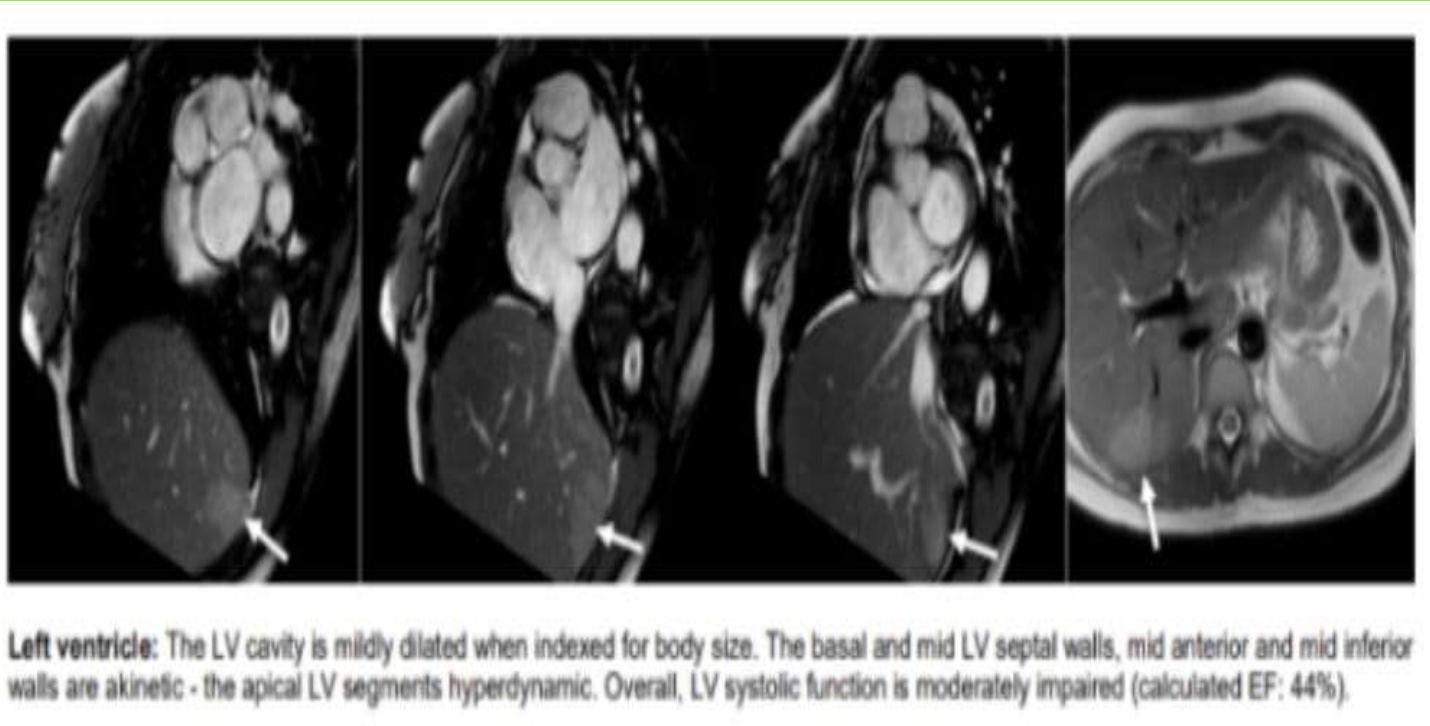
A 31-year-old woman, two hours postpartum following an uncomplicated vaginal delivery of her second child, developed acute central chest pain, shortness of breath, and dizziness. Notably, at 15 weeks’ gestation, she had presented with chest discomfort and palpitations; pulmonary embolism and other major conditions were excluded, and the symptoms were attributed to anxiety with no follow-up arranged.

- ✓ Postpartum ECG showed sinus bradycardia and T-wave inversions (V1–V4).
- ✓ Troponin I was markedly elevated (1452 ng/L; normal <50 ng/L).
- ✓ Echocardiography revealed a mildly dilated left ventricle with an ejection fraction (EF) of 30–35% and mid-ventricular regional wall motion abnormalities.
- ✓ CT coronary angiography ruled out coronary artery obstruction; CT pulmonary angiogram excluded pulmonary embolism.
- ✓ Cardiac MRI confirmed mid-ventricular Takotsubo cardiomyopathy, showing myocardial oedema without fibrosis or infarction.

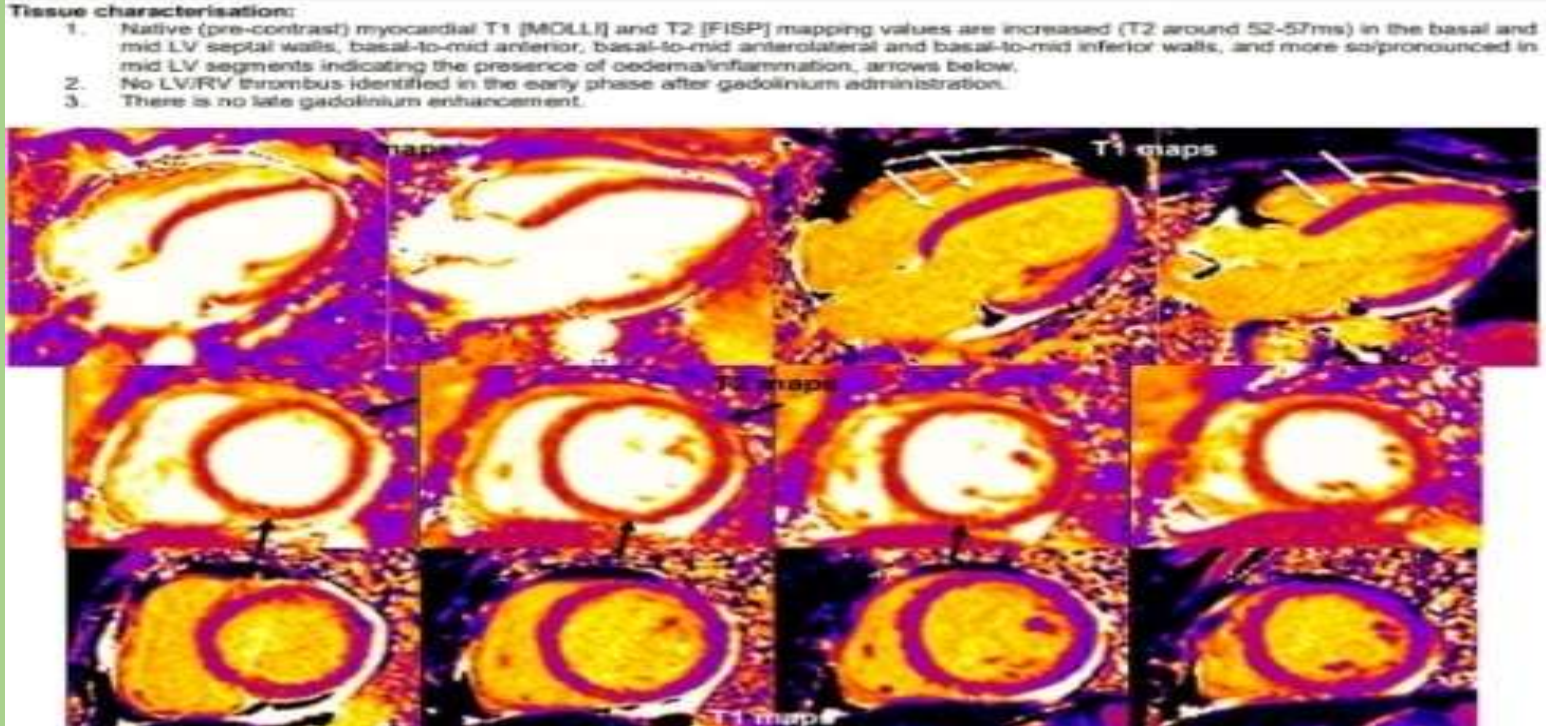
She was discharged on day 4 with a planned follow-up cardiac MRI. The follow-up scan confirmed the diagnosis of mid-ventricular Takotsubo cardiomyopathy, showing complete resolution of the cardiomyopathy, normal left and right ventricular function, and no myocardial oedema or fibrosis — confirming full cardiac recovery.



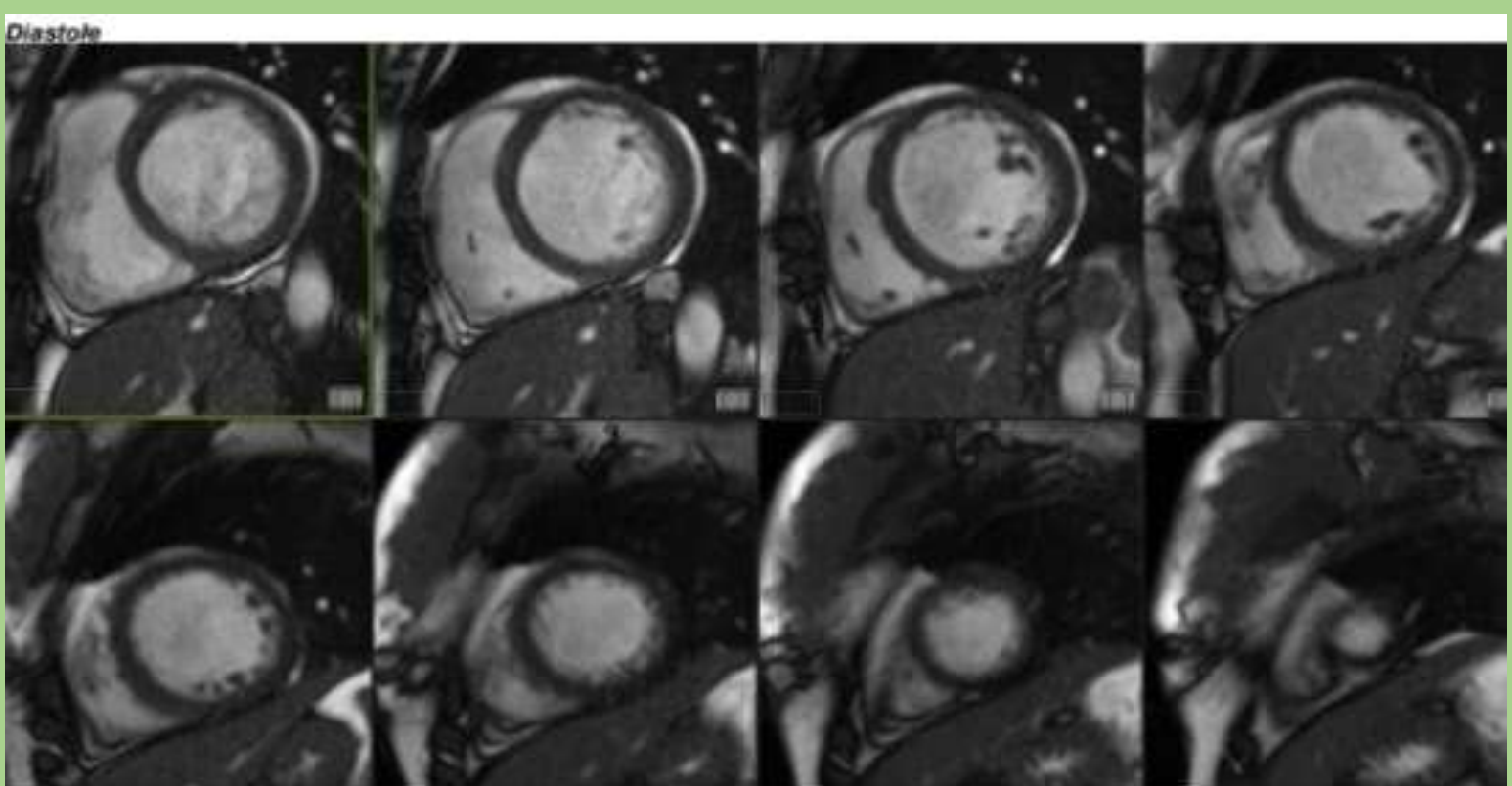
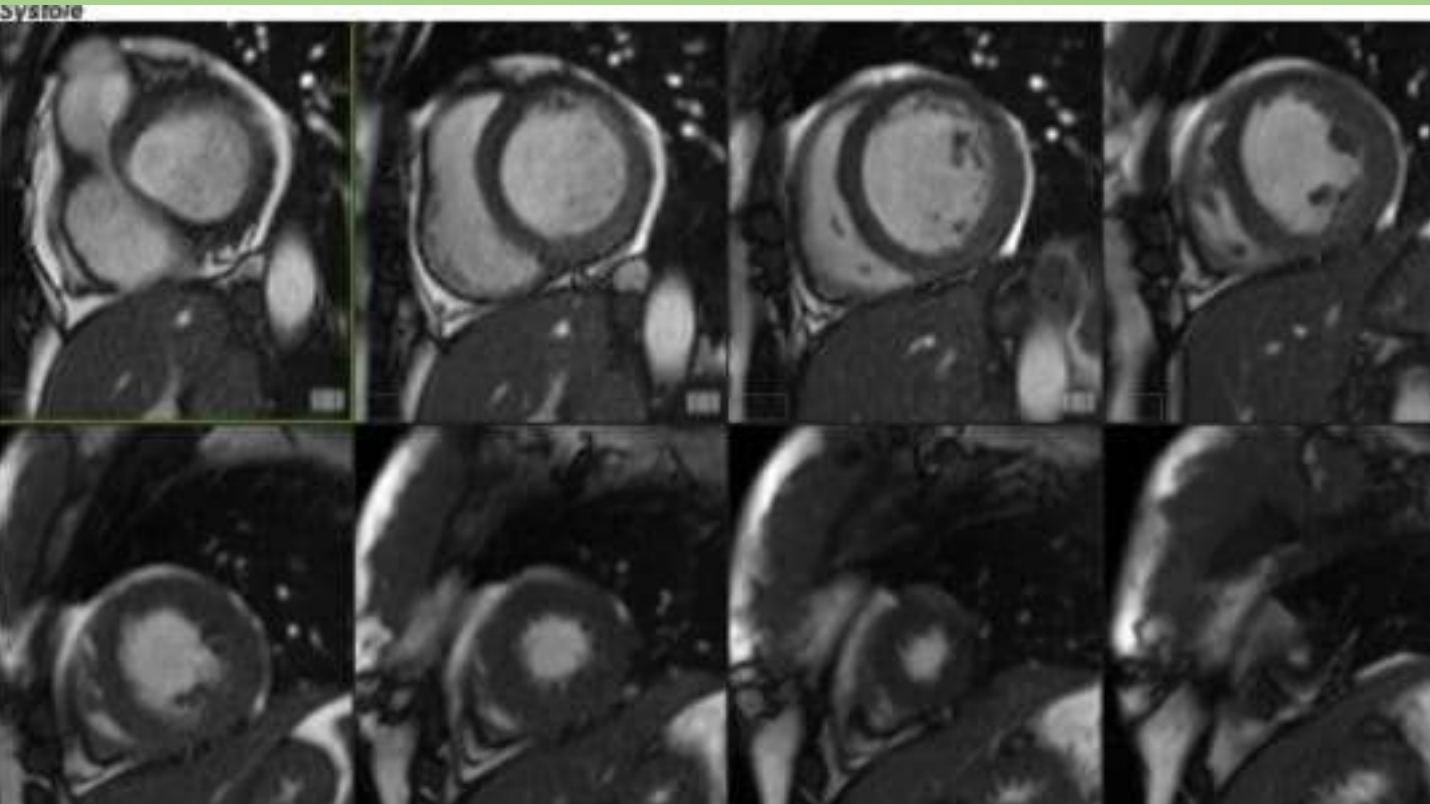
She was advised to seek pre-pregnancy counselling and echocardiographic assessment before any future pregnancies.



Left ventricle: The LV cavity is mildly dilated when indexed for body size. The basal and mid LV septal walls, mid anterior and mid inferior walls are akinetic - the apical LV segments hyperdynamic. Overall, LV systolic function is moderately impaired (calculated EF: 44%).



Tissue characterisation: Native (pre-contrast) myocardial T1 (MOLLI) and T2 (FISP) mapping values are increased (T2 around 100-120ms) in the basal and mid LV septal walls. Basal-to-apical anterior, basal-to-apical anterolateral and basal-to-apical inferior walls, and more subendocardial in the LV septum, indicating the presence of oedema/inflammation, as seen below. There is no late gadolinium enhancement in the early phase after gadolinium administration.



Learning Points

- ✓ Mid-ventricular Takotsubo cardiomyopathy is a rare but important differential diagnosis in postpartum chest pain.
- ✓ Advanced imaging, particularly cardiac MRI, is crucial to confirm diagnosis and guide management.

Early antenatal symptoms, even if mild or attributed to anxiety, may signal underlying cardiac vulnerability.

- ✓ Full recovery is possible with supportive management, but pre-pregnancy counselling and cardiac evaluation are essential for future pregnancies.

Conclusion

This case highlights the importance of considering rare cardiac conditions such as mid-ventricular Takotsubo cardiomyopathy in postpartum women presenting with chest pain. Early recognition, use of advanced imaging, and multidisciplinary management are essential for accurate diagnosis and optimal outcomes. Careful follow-up and pre-pregnancy counselling are crucial to ensure safe planning for future pregnancies.

