



Presenter
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Case Presentation

- An 84-year-old female, after undergoing mitral valve replacement with complications including sick sinus syndrome and atrial fibrillation that were treated with a permanent pacemaker and cardioversion, presented with chest pain and dyspnea on exertion a month later.
- Laboratory results revealed a B-type natriuretic peptide (BNP) level of 286 pg/mL and an increased troponin level of 176 ng/mL.
- EKG showed ventricular pacemaker (fig 1). Echocardiogram showed new-onset heart failure, with a ventricular ejection fraction (LVEF) of 25-30%, suggestive of TCM (fig 2).
- Guideline-directed medical therapy for heart failure was initiated, including jardiance, lisinopril, and metoprolol. A follow-up transthoracic echocardiogram performed a month later showed an improved LVEF of 50%.

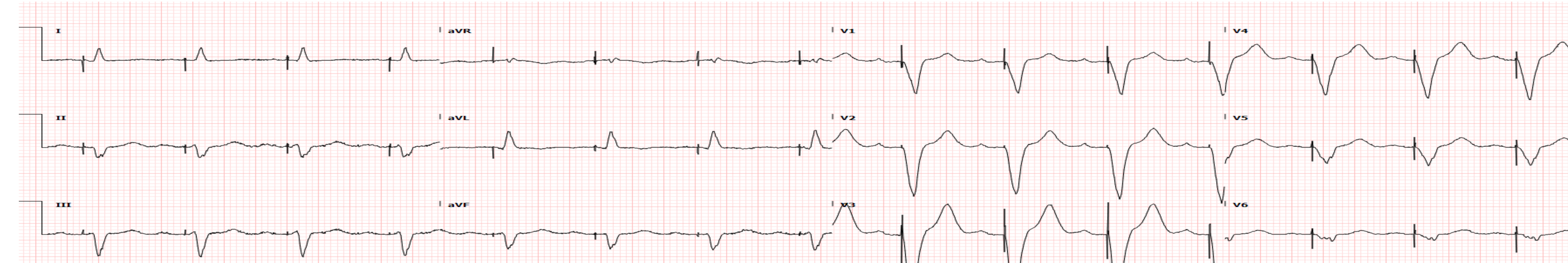


Fig 1: EKG showed ventricular pacemaker without any abnormalities detected

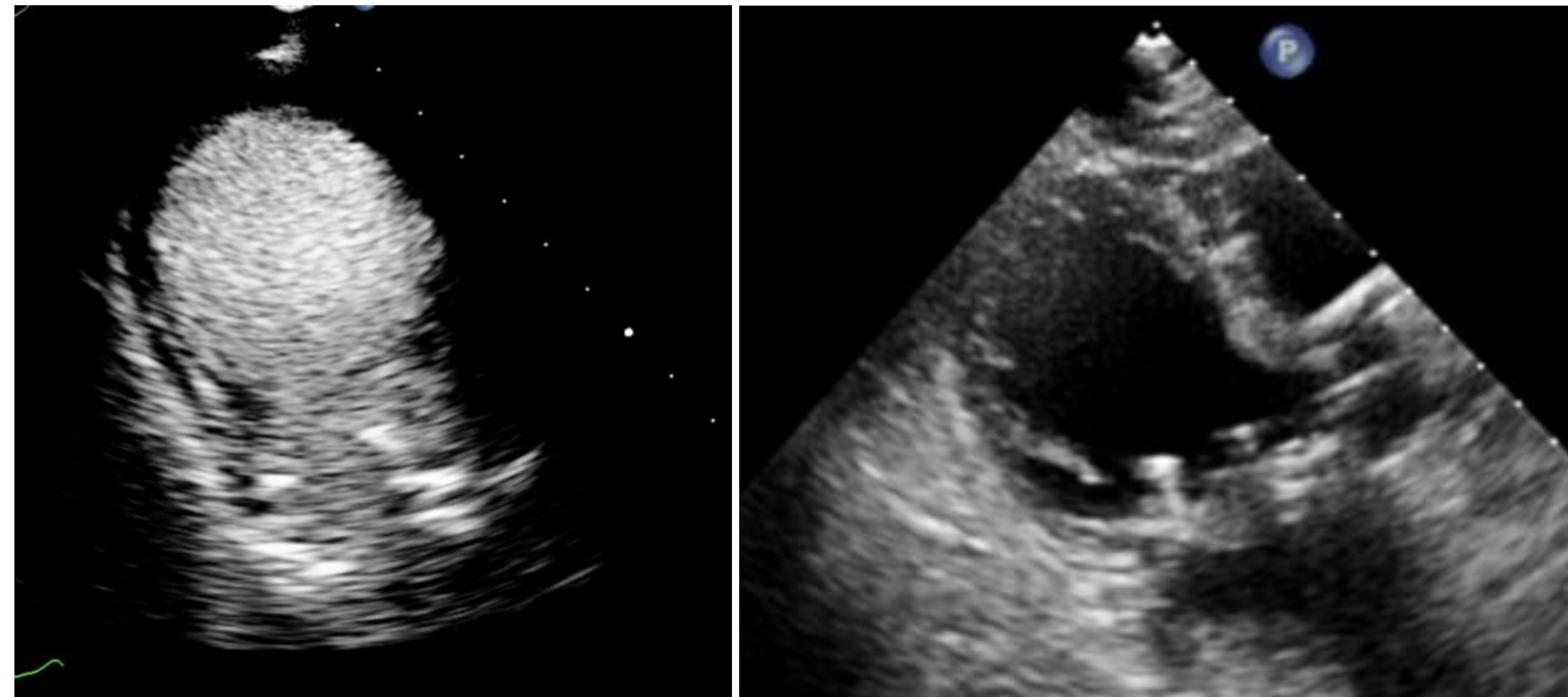


Fig 2: Echocardiogram showed dilated moderate aortic regurgitation, dilated left atrium, akinesias of the apical and mid-ventricle segments, basal segments hypercontractility, and apex dilation, LVEF of 25-30%

Unique aspect

- In this rare case, TCM developed after mitral valve replacement, with cardiac surgery probably serving as the primary stress factor. Other potential etiologies include postoperative events such as autonomic dysfunction during or after cardioversion, atrial fibrillation, sick sinus syndrome, and pacemaker placement [3,4,5].
- Additionally, risk factors in this patient included a BMI of 40, borderline-low sodium level of 135 mEq/L, and the reduction of estrogen in postmenopausal women, all of which contributed to the manifestation of this syndrome.

Literature review

- Takotsubo cardiomyopathy (TCM) is characterized by transient dysfunction and ballooning of the left ventricle of the heart.
- It typically occurs following a significant stressor, which can be either physical or emotional in nature. In this particular case, the stressor is likely attributed to cardiac surgery. It is noteworthy that around 70–80% of TCM patients have recently experienced a major stressor, with 41–50% related to physical stressors and 26–30% related to emotional stressors. [1]
- However, only a few occurrences of TCM that have been preceded by cardiac surgery have been published, accounting for 0.9% according to 52 out of 5773 patients. In these cases, mitral valve surgery contributed to the majority cases with 69.2% [2]

References

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Conclusions

Open heart surgery can act as a physical stressor that triggers TCM. Early recognition of this condition is crucial for appropriate management. Supportive therapy plays a key role in the mainstay management of TCM.