Heartbreaking Constipation: A Unique Case of Takotsubo Cardiomyopathy

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INTRODUCTION

- Takotsubo cardiomyopathy (TCM) is characterized as left ventricular systolic dysfunction with apical ballooning in the absence of coronary artery obstruction [1,5]
- Although the exact etiology of TCM is not well established, it is thought to be secondary to catecholamine surge precipitated by severe psychological stress or physical illness [5]
- We present a case of TCM in a patient with severe constipation, a rare presentation

CASE PRESENTATION

- An 81-year-old female with a history of paroxysmal atrial fibrillation status-post ablation, chronic constipation with prior fecal impaction 20 years ago requiring gastroenterological intervention presented to the emergency department with midsternal chest pain
- She initially planned to present to the emergency department for evaluation of her constipation which persisted for ten days, was unresponsive to outpatient up-titration of her bowel regimen and resulted in severe stress given her prior history of fecal impaction
- Her presentation was initially concerning for a small bowel obstruction (SBO)
- CT scan of her abdomen and pelvis with contrast showed small to moderate stool burden, non-obstructive gas bowel pattern
- Initial blood work was significant for troponin-I 0.22 ng/mL, BNP 49.6 pg/mL. EKG showed sinus rhythm, 1st degree AV block, no ST segment changes, unchanged from her prior EKG
- Repeat labs showed troponin 1.21 ng/mL, BNP 666.9 pg/mL. She was started on a heparin drip and underwent left heart catheterization, which showed patent coronary arteries
- Initial echocardiogram showed left ventricular ejection fraction (LVEF) 20% with normal left ventricular contractility noted in basal wall with mid to left ventricular contractility distal wall akinesis, consistent with apical ballooning
- Subsequently, guideline directed medical therapy for heart failure with reduced ejection fraction was initiated, bowel regimen was intensified, and her constipation resolved
- Repeat echocardiogram 5 days later showed LVEF 50-55% without wall motion abnormalities

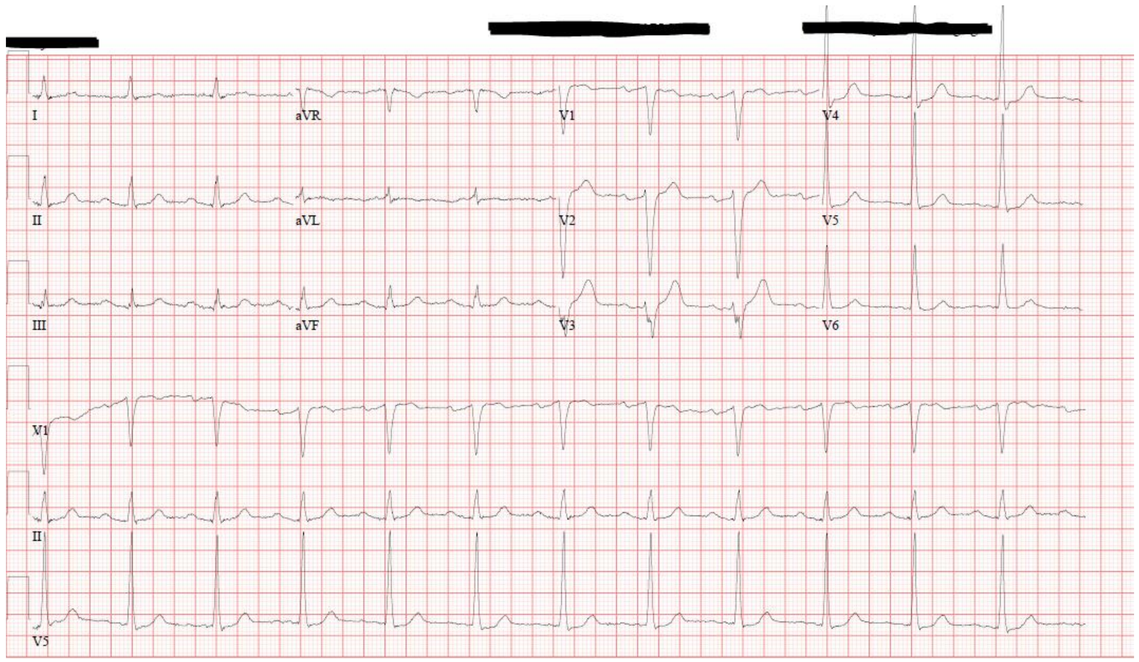

Figure 1. Initial EKG on presentation

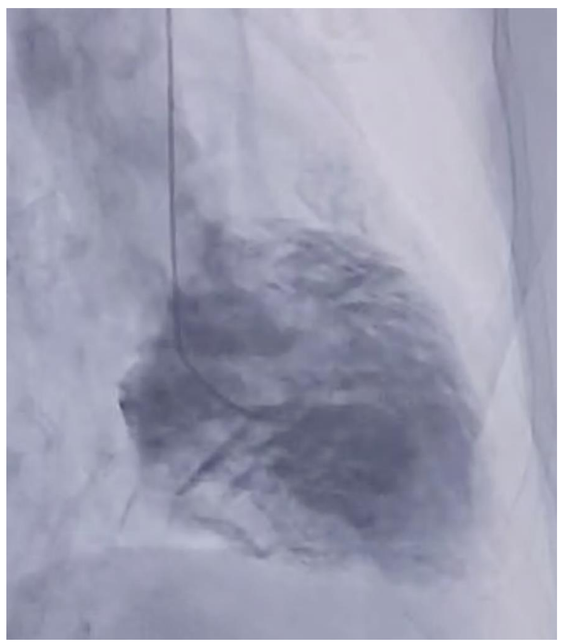

Figure 2. End-diastolic left ventriculography

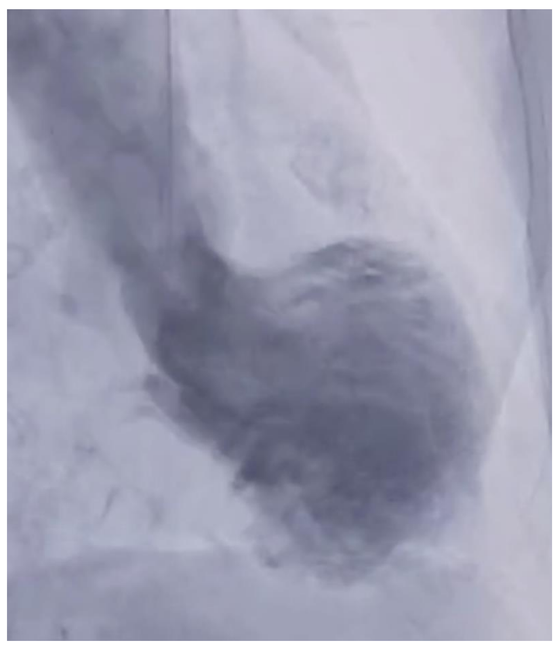

Figure 3. End-systolic left ventriculography showing apical ballooning

DISCUSSION

- TCM predominantly affects postmenopausal women, with approximately 80-90% of cases occurring in women over the age of 50 [6]
- This condition has been reported to be precipitated by severe psychological stress and gastroenterological pathologies such as SBO [1, 3, 4]
- Constipation-predominant irritable bowel syndrome (IBS-C) is linked to significantly increased nocturnal levels of plasma catecholamines and serum cortisol in women [2]
- Our patient's constipation caused her severe psychological stress as she initially refused cardiac catheterization until she had a bowel movement
- We postulate that in the absence of other psychological stressors or pathology such as SBO, psychological stress secondary to constipation in the setting of increased nocturnal serum cortisol and plasma catecholamine levels led to her development of TCM

CONCLUSION

- Currently, there are no evidence-based management or prevention guidelines for TCM
- Further research into the pathogenesis of TCM is essential to develop effective prevention strategies and treatment protocols to prevent recurrence

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