Dilated Cardiomyopathy due to Echovirus

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INTRODUCTION

- Dilated cardiomyopathy (DCM)- most frequent cause of heart transplantation and 3rd leading cause of heart failure in the US.
- Characterized by ventricular chamber dilatation and systolic dysfunction with normal left ventricular wall thickness.
- Although the most common etiologies of DCM are coronary artery disease and hypertension, infectious agents, especially viral, have been implicated in the pathogenesis of DCM.
- Incidence of viral myocarditis is approximately 1.5 million cases worldwide per year.
- Viral infection results in a myocardial inflammatory response that triggers interstitial edema, myocyte necrosis, and ultimately fibrosis.
- Cardiac sequelae of myocarditis are often self-limiting. However, in some cases, it may progress to DCM with left ventricular dysfunction, arrhythmias, thromboembolism, heart failure, and cardiac-related death.
- The clinical presentation of myocarditis: angina, dyspnea on exertion, syncope, arrhythmias, acute heart failure, and life-threatening cardiogenic shock.
- Due to the wide variety of presentations, myocarditis can be difficult to diagnose.
- We present a case of viral cardiomyopathy caused by echovirus, an enterovirus.

CASE DESCRIPTION

- 57-year-old Hispanic female with a past medical history of non-Hodgkin's lymphoma, stage III, treated with R-CHOP presented with gastroenteritis and a positive echovirus assay in 2011.
- Later that year, an echocardiogram revealed dilated left atrium *(Image 3)*, normal left ventricular dimension, moderate to severe global hypokinesis of the left ventricular wall, and a left ventricular wall ejection fraction (EF) of 25% *(Images 1 and 2)*.
- Since 2011, echocardiograms have shown a similar EF of 25%.
- In 2013, patient also began developing concentric left ventricular hypertrophy, enlarged left ventricular end-diastolic diameter (6.7 cm), and moderate to severe mitral regurgitation.
- CT angiogram has continued to show no significant stenosis of the coronary arteries.
- In 2015, an electrocardiogram showed evidence of interventricular conduction delay with a QRS duration of 132 ms. Biventricular pacemaker was implanted the following day.

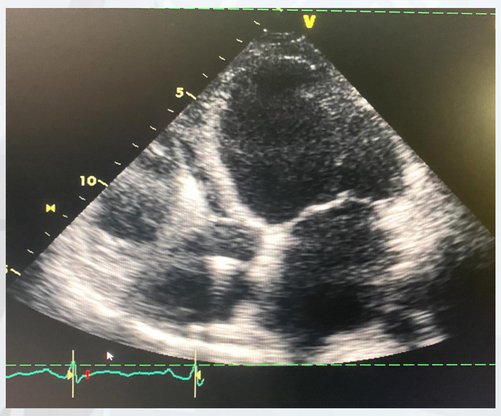

Image 1: Echocardiogram during systole.

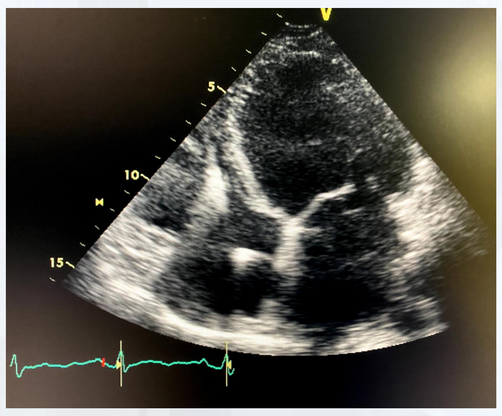

Image 2: Echocardiogram during diastole.

CONCLUSIONS

- This is a case of a patient with a past medical history of non-Hodgkin's lymphoma, who developed myocarditis, which rapidly progressed to chronic systolic heart failure following an episode of gastroenteritis from echovirus.
- Although most enterovirus infections are self-limiting, persistent infections and associated sequelae are frequently encountered in immunodeficiency.
- It is important for clinicians to be aware of the potential cardiac sequelae associated with a common cause of gastroenteritis and vulnerable populations.

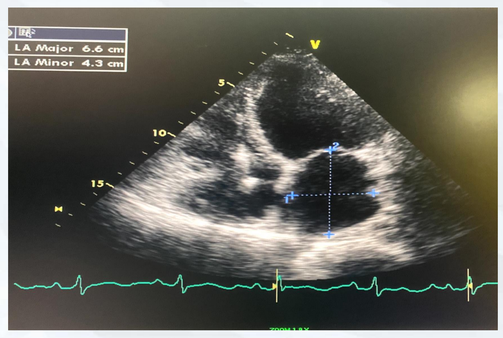

Image 3: Echocardiogram showing increased left atrial size at 6.6 cm

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DISCLOSURES: None.