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## Too close for comfort: A case of extrinsic compression of the left ventricle by a large hiatal hernia

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**Description**

A 77-year-old man with a history of Coronary artery disease, COPD, and pulmonary fibrosis on 5 L of oxygen at home presented to the emergency department with dizziness.

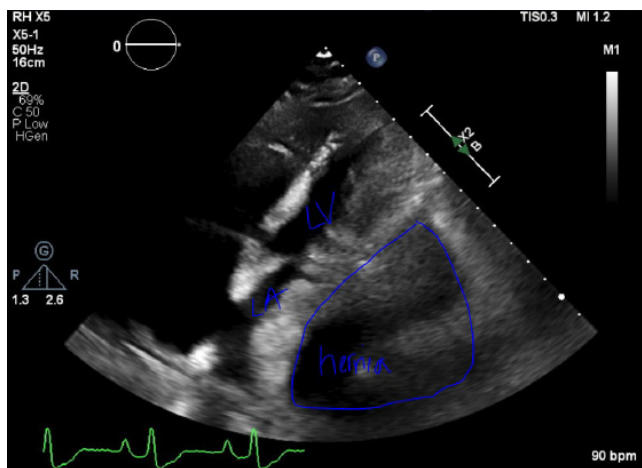
Vital signs at presentation included temperature 37°C, pulse 160/min, blood pressure 86/60 mmHg, respiratory rate 24/min, oxygen saturation 96% on 5 L of oxygen. He had end-inspiratory crackles on lung auscultation.

His labs were unremarkable, but he had atrial fibrillation with a ventricular rate of 162 and non-specific T wave changes on EKG. Chest X-ray showed prominent interstitial markings representing fibrosis, and Chest CT revealed a large hiatal hernia with left pleural thickening and worsening emphysema. Trans-thoracic Echocardiogram (TTE) showed an Ejection fraction of 75%, extrinsic compression of the inferior, lateral, and infero-lateral wall, and impaired relaxation. Other Echocardiographic findings were extrinsic compression of the left atrium, dilated

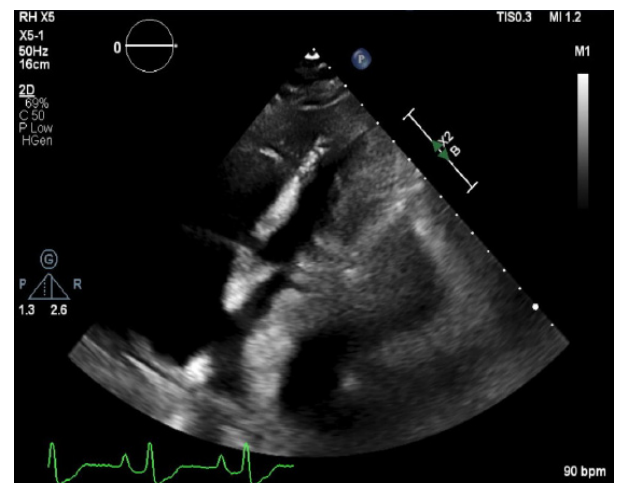
right atrium, moderate tricuspid regurgitation, and estimated right ventricular systolic pressure of at least 96 mmHg (Figures 1a,b&c).

Cardiac distortion by a large hiatal hernia can increase the risk of various forms of arrhythmia and Left Ventricular Outflow Obstruction (LVOT), leading to syncope and exertional dyspnoea [1,2]. Although this patient had severe COPD and pulmonary fibrosis, his TTE abnormalities showed that his dyspnea may have been partly due to left atrial and ventricular compression by his large hiatal hernia. Interestingly, this patient only reports intermittent reflux symptoms, and he was not on proton pump inhibitors. The hemodynamic effect on cardiac structures can become accentuated when the hernia increases in size during feeding [3]. Hernia surgery often leads to symptomatic improvement. In this case, the patient was deemed not a surgical candidate due to severe COPD and interstitial fibrosis. His atrial fibrillation was treated, and he was discharged on metoprolol and Apixaban.

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**Figure 1a:** TTE four-chamber view showing a large Hiatal Hernia compressing on the left atrium and ventricle.



**Figure 1c:** TTE four-chamber view showing mildly open Left atrium in end systole.



**Figure 1b:** TTE four-chamber view showing complete collapse of the left atrium in end-diastole.

## References

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