

# Hiatal Hernia Mimicking Aortic Aneurysm on Point-of-care Echocardiography

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## CASE PRESENTATION

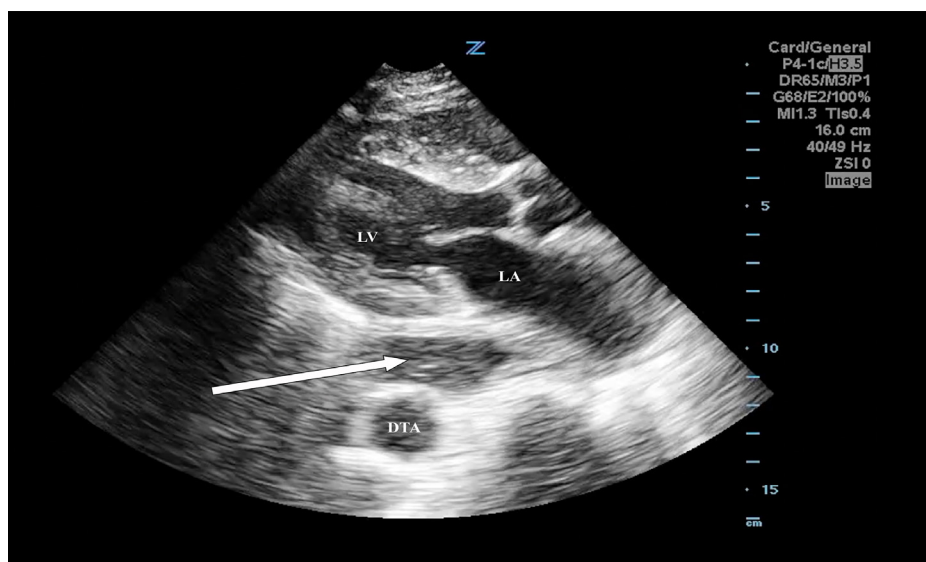
An 85-year-old woman presented to the emergency department (ED) with altered mental status. She appeared to be in shock with a distended abdomen. A point-of-care (POC) echocardiogram using a 4 Mhz phased array transducer revealed a large anechoic mass posterior to the left atrium concerning for an aneurysm of the descending thoracic aorta (DTA). (Image, Video) However, computed tomography revealed high-grade small bowel obstruction, associated with a hiatal hernia.

## DIAGNOSIS

The detection of hiatal hernia on echocardiography has been described in the cardiology literature;<sup>1</sup> however, this case highlights a patient in shock who was diagnosed by POC

echocardiography by emergency physicians (EP). Given the increased use of POC echocardiography by EPs, it is important to recognize mimics of life-threatening conditions. In the Image, a parasternal long-axis (PLAX) view reveals an anechoic mass posterior to the left atrium with multiple hyperechoic echoes within it, which raised suspicion for a DTA aneurysm. Other critical diagnoses in this anatomic region include aortic dissection, loculated pericardial effusion, left atrial or ventricular aneurysms.

When suspicious for a hiatal hernia on echocardiography, be certain to visualize the object of interest in at least two windows. The inner lining of the structure should be thick (6-13mm) and resemble stomach mucosa with the presence of microbubbles.<sup>2</sup> A diagnosis may be confirmed after having the patient drink a



**Image.** Parasternal long-axis window with anechoic mass (arrow) with microbubbles posterior to the left atrium (LA) and left ventricle (LV) but anterior to the descending thoracic aorta (DTA). Despite mimicking life-threatening aortic pathology, this is a fluid-filled hiatal hernia.

carbonated beverage, which will result in increased microbubbles and swirling echo densities.<sup>3</sup> Other mass lesions seen adjacent to the DTA include left atrial myxomas or thrombosis, mediastinal hematomas or tumors, pericardial cysts and esophageal carcinoma.<sup>4</sup>

In conclusion, a posterior anechoic mass seen on the PLAX view on POC echocardiography can be mistaken for a DTA aneurysm, but may be accurately diagnosed as a hiatal hernia if it has a thick inner lining resembling stomach mucosa and contains microbubbles.

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### *CPC-EM Capsule*

What do we already know about this clinical entity?

*Emergency physicians rely on point-of-care echocardiography for rapid detection of critical diagnoses such as aortic aneurysms and dissections.*

What is the major impact of the image(s)?

*A hiatal hernia may be distinguished from an aortic aneurysm on ultrasound by the presence of microbubbles and a thick inner lining resembling stomach mucosa.*

How might this improve emergency medicine practice?

*By recognizing mimics of life-threatening conditions on ultrasound, emergency physicians can better expedite patient care and resource utilization.*

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