

IMAGES IN EMERGENCY MEDICINE

Ultrasound

A man with sudden onset chest pain

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1 | PATIENT PRESENTATION

A 55-year-old male with a history of long QT syndrome status post implantable cardioverter-defibrillator, polycystic kidney disease, and hypertension presented to the emergency department for sudden onset chest pain with radiation to the back and left arm. Initial vital signs demonstrated a blood pressure of 203/93 with a heart rate of 58. Troponin was 0.04 ng/mL, D-dimer was >20 µg/mL, and creatinine was 4.89 mg/dL. Chest x-ray demonstrated a widened mediastinum.

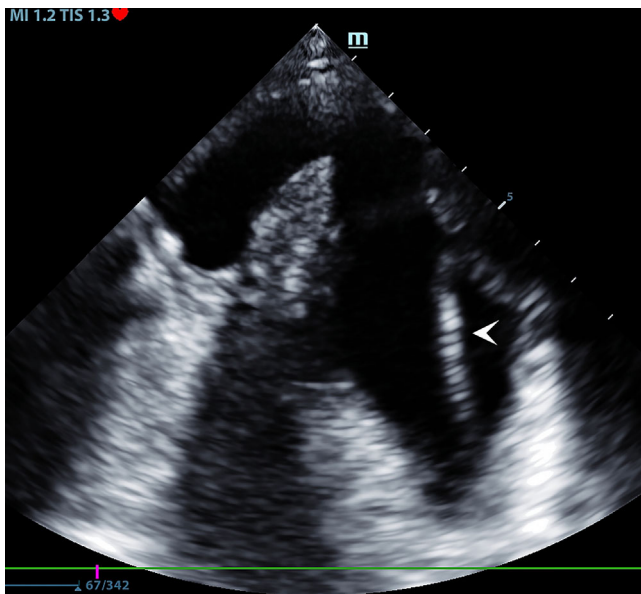


FIGURE 1 Transthoracic echocardiography showing a hyperechoic linear structure in the lumen of the descending aorta (arrowhead), suprasternal view

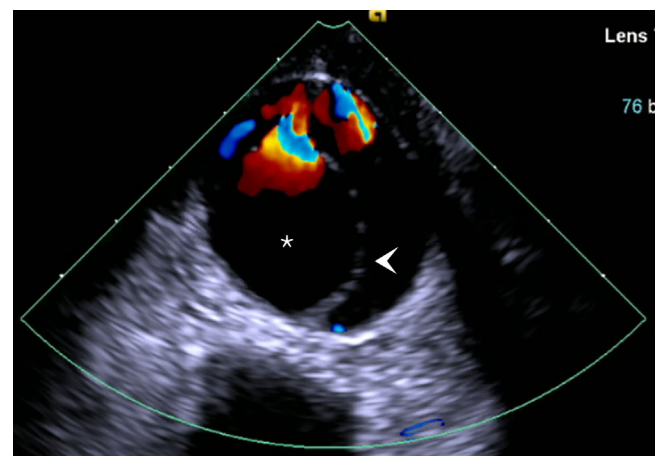


FIGURE 2 Transesophageal echocardiography with color Doppler identifying true lumen (star) of an aortic dissection (arrowhead), descending aorta short axis view

Point-of-care ultrasound (POCUS), including parasternal, apical, sub-xiphoid, and abdominal aortic views, were unremarkable. Suprasternal view revealed a hyperechoic linear structure moving rhythmically with cardiac contraction independent of the vascular wall (Figure 1; Video 1).

2 | DIAGNOSIS

2.1 | Stanford type A aortic dissection

Cardiovascular Surgery and Cardiology were consulted. Emergent transesophageal echocardiography (Figure 2) and computed

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FIGURE 3 Computed tomography angiography of the thorax demonstrating an aortic dissection (star), sagittal view

tomography (CT) angiography (Figure 3) confirmed the diagnosis of a Stanford type A dissection. The patient underwent emergent repair without complication.

Aortic dissection is a vascular emergency that is potentially life threatening, and timely management is critical.¹ CT angiography is considered the reference standard for noninvasive diagnosis.² POCUS is efficient, highly specific, and can escalate management.³ Multiple transthoracic echocardiography views are recommended when assessing the thoracic aorta.^{4,5} The suprasternal view is often not considered in this assessment but is of paramount importance, and it was key to diagnosis in the present case. Management of a Stanford type A dissec-

tion includes the control of blood pressure and heart rate and consultation for emergency surgery.²

ACKNOWLEDGEMENTS

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

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