

Traumatic Aortic Mural Thrombus

Diagnosed Echocardiographically before
Thoracic Endovascular Aortic Repair

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A 26-year-old woman was transferred to our hospital after a motor vehicle accident. She sustained a fractured left femur, and aortic dissection was suspected. Poor-quality computed tomograms (CT) did not dispel this suspicion. A transesophageal echocardiogram (TEE) showed a 1 × 1-cm heterogeneous echodensity; it was attached to the wall of the descending aorta distal to the subclavian artery, mildly mobile with central echolucency (Fig. 1A). Subsequent CTs showed aortic intimal damage along with a density (Figs. 1B–C); CT with 3-dimensional volume-rendering clearly showed a thrombus in the descending aorta (Fig. 1D). The cardiothoracic surgeon still suspected aortic dissection and recommended thoracic endovascular aortic repair. After the uncomplicated procedure, a fluoroscopic image showed no residual thrombus (Fig. 2).

Comment

Aortic mural thrombi can cause complications via peripheral, visceral, and cerebral embolization.¹ Approximately 5% of peripheral arterial emboli develop in the aorta.²

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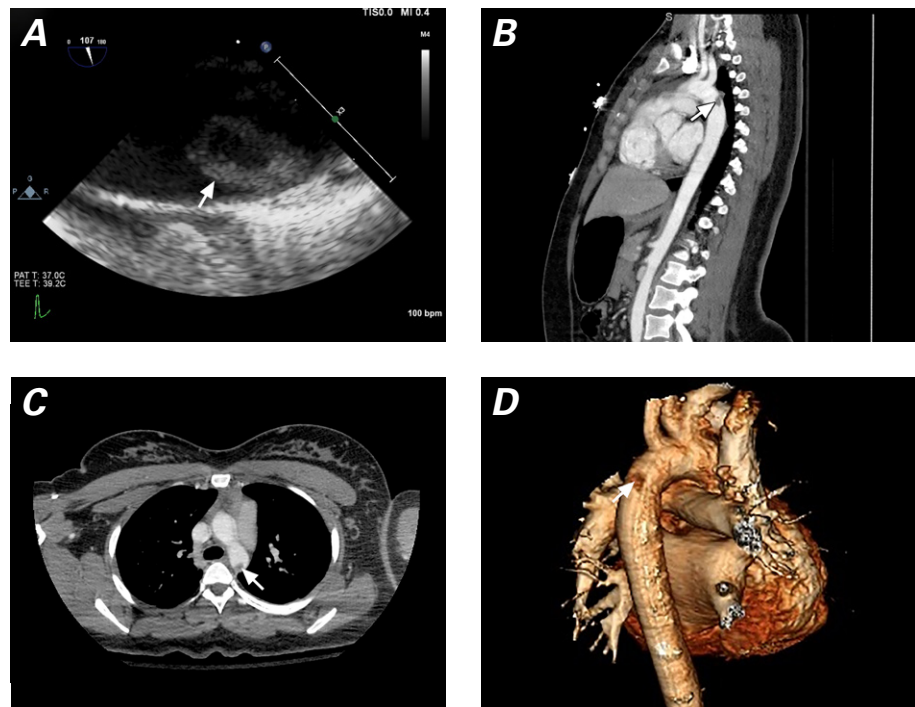


Fig. 1 **A)** Transesophageal echocardiogram shows a heterogeneous echodensity (arrow) in the descending aorta. **B)** Computed tomogram (sagittal view) with thoracic contrast shows intimal damage and thrombus in the descending aorta (arrow). **C)** Computed tomogram of the entire aorta (cross-sectional view) shows a density in the descending aorta (arrow). **D)** Computed tomogram (3-dimensional volume-rendering) shows the site of injury to the aorta (arrow) and thrombus formation.



Fig. 2 After stenting, fluoroscopic image shows the endovascular graft and no residual thrombus.

References

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Traumatic aortic injuries in patients with deceleration injuries need to be ruled out, because the ligamentum arteriosum is tethered to the aorta. In our patient, the deceleration injury caused the mural thrombus.

The procedure of choice to detect aortic mural thrombus is TEE. However, TEE cannot be used to obtain views of the abdominal aorta, so CT or magnetic resonance imaging may be clinically indicated. After diagnosis, the treatment options include anticoagulation, thrombolysis, and surgery; no guidelines specify which is superior. Our cardiothoracic surgeon thought that minimally invasive endovascular repair was best for our patient's thoracic aortic mural thrombus.³ In patients with deceleration injuries, aortic avulsion injuries should be strongly suspected, and combined imaging with CT and TEE is needed.