

Ruptured Membrane of the Left Atrial Appendage

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A 75-year-old woman with newly diagnosed atrial fibrillation was referred for cardioversion. She was a smoker and had hypertension that she controlled with medications. Her renal function, electrolyte levels (including potassium and magnesium), and thyroid-stimulating hormone levels were within normal limits. The results of a recent transthoracic echocardiogram, which she had undergone as an outpatient, were within normal limits. We started her on a regimen of anticoagulation with dabigatran and performed transesophageal echocardiography (TEE), with plans for electrical cardioversion if no left atrial appendage (LAA) thrombus was found.

The TEE showed no evidence of an LAA thrombus, but there was a thin membrane extending across the ostium of the LAA, with a hypermobile, hyperechoic structure attached to it (Fig. 1). We considered that this lesion could be a dehiscenced segment of the membrane itself or an attached thrombus. Color-Doppler mode showed blood flow through the apparently ruptured membrane (Fig. 2). However, we aborted electrical cardioversion for fear that a thrombus was attached to the membrane.

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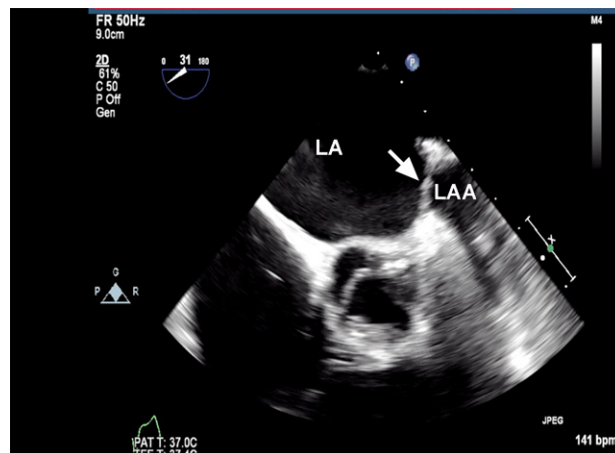


Fig. 1 Transesophageal echocardiogram (mid-esophageal short-axis view at the level of the aortic valve) shows a dehiscenced membrane (arrow) with a mobile component extending across the ostium of the left atrial appendage.

LA = left atrium; LAA = left atrial appendage

[Supplemental motion image is available for Figure 1.](#)

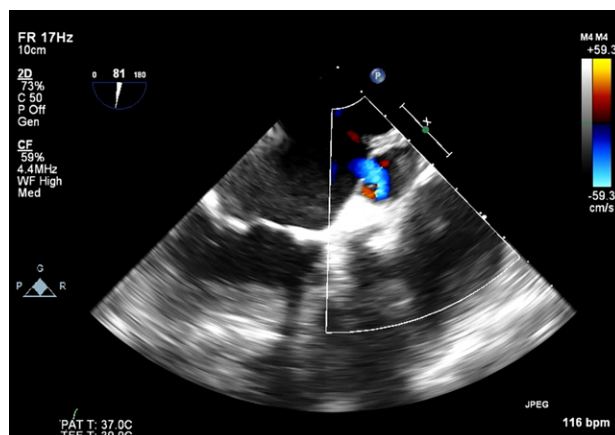


Fig. 2 Transesophageal echocardiogram in color-flow Doppler mode (mid-esophageal short-axis view at the level of the aortic valve) shows flow across the dehiscenced membrane of the left atrial appendage.

[Supplemental motion image is available for Figure 2.](#)

Comment

Membranes of the LAA are extremely rare. To date, 8 other cases¹⁻⁶ have been described in the medical literature, half of which were incidental findings upon TEE. The other 4 patients had atrial fibrillation or flutter, as did our patient. Whether the membrane itself promotes atrial fibrillation or is a mere bystander is not understood. These membranes might be congenital remnants that can pose problems when LAA occluders are deployed. Of course, rupture of a membrane can induce embolism and stroke. More extensive reports and further study of this entity will help us to better understand it.

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