

The thrombus image in the huge left atrial appendage

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A 55 year-old woman presented to our cardiology clinic with shortness of breath. She had a history of mitral stenosis and chronic atrial fibrillation. The patient was treated with anticoagulant therapy. She reported that she had consumed 5 mg of warfarin daily for more than two years. On admission to the hospital, the patient's international normalized ratio (INR) revealed an ineffective anti-coagulation level (INR = 1.06). She was referred

to the echo laboratory to assess left ventricular systolic functions and the quantification of mitral stenosis.

Transthoracic echocardiography revealed pericardial effusion, moderate mitral stenosis, and a large left atrial appendage. The Doppler gradient was assessed using the apical window. The maximal and mean gradients were calculated: 12 mm Hg and 6 mm Hg, respectively. The mitral valve area was measured at 1.5 cm² by the planimetric method.

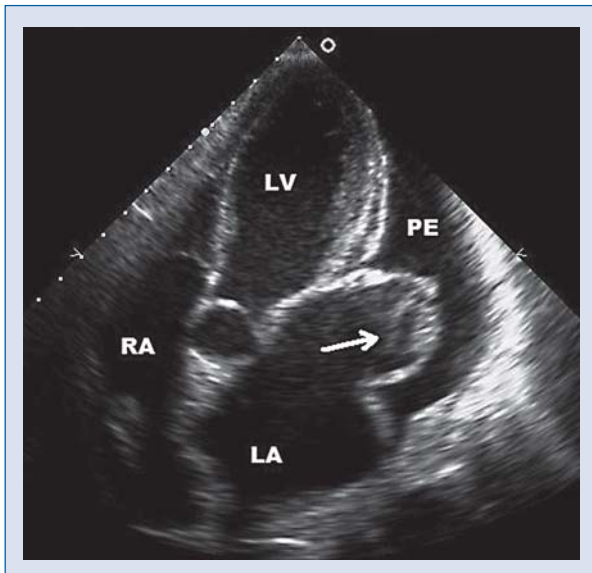


Figure 1. Modified apical four-chamber view of the left atrial appendage in a patient with moderate mitral stenosis. Spontaneous echo-contrast and thrombus (arrow) in the hugely enlarged left atrial appendage are demonstrated. Probe was mildly angulated and rotated clockwise; the image obtained was an apical three-chamber view; RA — right atrium; LA — left atrium; LV — left ventricle; PE — pericardial effusion.

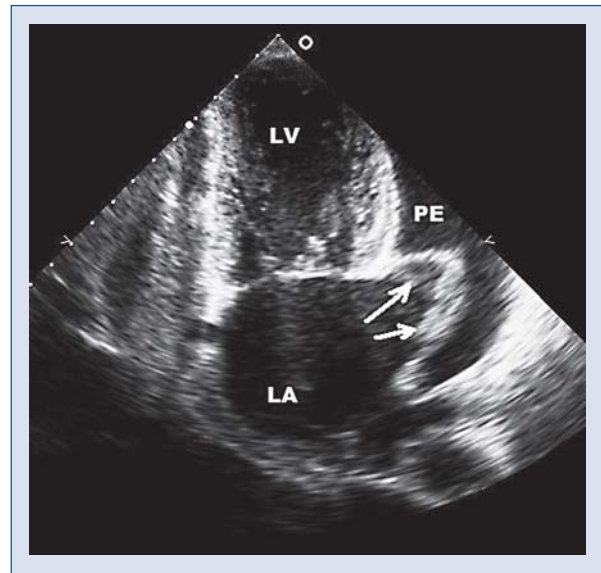


Figure 2. Modified two-chamber view of the left atrial appendage in a patient with moderate mitral stenosis. Spontaneous echo-contrast and thrombus (arrow) are demonstrated in the hugely enlarged left atrial appendage. Probe was mildly angulated to the left; the image obtained was a modified two-chamber view; LA — left atrium; LV — left ventricle; PE — pericardial effusion.

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Also, moderate mitral regurgitation was observed. The estimated pulmonary arterial systolic pressure was calculated at 50 mm Hg by continuous wave Doppler on the tricuspid regurgitation jet. The left atrium dimension was 5.4 cm at the parasternal long axis view. This large left auricular appendage revealed modified apical four-chamber and two-chamber views. There were left atrial spontaneous echo-contrast and a coating thrombus in the enlarged left atrial appendage (Figs. 1, 2). Left atrial spontaneous echo-contrast, as assessed by transesophageal echocardiography, is a better predictor of thromboembolic risk than left atrial size. Atrial fibrillation, mitral stenosis, and spontaneous echo-contrast are contributing factors to thrombus formation in the left atrial appendage.

Transoesophageal echocardiography has a much higher sensitivity than the transthoracic approach when diagnosing left atrial thrombus, in particular when located in the left atrial appendage. However, in this case, we showed that an obvious view of the thrombus can also be demonstrated with modified transthoracic echocardiographic windows when the left auricular appendage is enlarged. Therefore, cardiologists should be aware of this; an unusual echo-image may contribute to our clinical practice as a treatment option.

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