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Giant left atrium with spontaneous echo contrast: a harbinger of thromboembolic phenomenon

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DESCRIPTION

A 25-year-old man presented with worsening dyspnoea on exertion of 5 months duration along with two episodes of thromboembolic stroke to the left side of the body over a span of the last 2 months. The patient had a history suggestive of rheumatic heart disease. On cardiac auscultation, a long rumbling mid-diastolic murmur was heard. ECG showed atrial fibrillation. Chest roentgenogram (figure 1A) revealed cardiomegaly with enlarged left atrial appendage (white arrows), splaying of carinal angle (thick black arrows) and double-density sign (black arrows) along the right cardiac border suggesting left atrium (LA; black arrows). Transthoracic echocardiogram revealed a grossly dilated LA (measuring 18.4×11.1 cm) having dense swirling spontaneous echo contrast (SEC; figure 1B, video 1), severe mitral stenosis and moderate mitral regurgitation with mitral valve orifice area of 0.9 cm^2 . Interestingly, the SEC in LA (thin white arrow) was partially cleared of (thick white arrow) by the mitral regurgitation jet, thus giving the appearance of negative contrast (figure 2; video 2). Postmitral valve replacement, the echocardiogram revealed the regression of LA size and disappearance of the SEC (figure 3). According to Isomura *et al*,¹ the giant LA is defined as diameter more than 8 cm. The SEC is an echogenic swirling pattern of blood flow, caused by an increased ultrasonic backscatter from the aggregation of the cellular components of blood in the conditions of blood stasis or low-velocity blood flow² and has been associated with a higher risk of thromboembolism and cerebrovascular accident.³

Learning points

- ▶ Giant left atrium is defined as that measuring >8 cm or touching the right lateral side of the chest wall.
- ▶ Spontaneous echo contrast is a predisposing factor for thrombus formation and hence a thromboembolic phenomenon.
- ▶ Atrial fibrillation in the presence of structural heart disease satisfies the indication to start anticoagulation.

Video 1 Transthoracic echocardiogram showing huge elliptical left atrium with dense swirling spontaneous echo contrast.

Figure 1 Chest x-ray posterior-anterior view (A) showing cardiomegaly with enlarged left atrial appendage (white arrows), splaying of carinal angle (thick black arrows) and double-density sign (black arrows) along the right cardiac border. The transthoracic echocardiogram (B) revealed huge elliptical left atrium (18.4×11.1 cm) with evidence of dense swirling spontaneous echo contrast in apical four-chamber view.

Figure 2 The colour compare in apical four-chamber view demonstrating the partial clearance of the spontaneous echo contrast in left atrium (LA; thick white arrows) by the mitral regurgitation jet, giving the appearance of negative contrast.

Video 2 Transthoracic echocardiogram (apical four-chamber view) showing clearance of the spontaneous echo contrast in the left atrium by the mitral regurgitation jet on colour Doppler interrogation.

Competing interests None.

Patient consent Obtained

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Figure 3 Postmitral valve replacement, the transthoracic echocardiogram showing regressed left atrium size, laminar flow (white arrow) across the mitral prosthetic valve (yellow arrow) and disappearance of spontaneous echo contrast in the left atrium.

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