‘Smoking left atrium’: an alarm to be vigilant and aggressive

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DESCRIPTION

We are presenting an interesting image of an echocardiographic appearance of spontaneous echo contrast (SEC) in the left atrium (LA), which resembled ‘Smoking LA’.

A 40-year-old man presented with severe rheumatic mitral stenosis, with a history of surgical mitral valvotomy and left hemiparesis at the age of 19 years, diagnosed with NYHA class III dyspnoea and orthopnoea since the last 5 months. Subsequently, he was treated successfully with balloon valvuloplasty.

Transthoracic echocardiogram revealed the presence of an enlarged LA with severe mitral stenosis. SEC was seen in LA moving into left ventricle, which appeared to resemble a puff of smoke coming from the LA (videos 1–3 and figures 1 and 2). The echocardiographic image appeared as though the ‘LA was smoking’. Diastolic jet of SEC across mitral valve provides a marker of thrombogenicity in two-dimensional echo in the absence of an obvious clot in patients in sinus rhythm, and can be used as a stand-alone marker to assess severity of diseases like mitral stenosis and severe ventricular dysfunction or in slow/stagnant flow states without the requirement of Doppler evaluation. It can be useful in cases planned for elective cardioversion of atrial fibrillation as well as in prognostication of cases after valvuloplasty.

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 flow. Previous studies have graded SEC and have demonstrated its utility in predicting adverse thromboembolic events in sinus rhythm patients, who are otherwise not considered candidates for anticoagulation.1–3

This image was an interesting appearance presented by a relatively uncommon manifestation of
valvular or structural heart disease, which needs timely and vigilant evaluation for prevention of catastrophic thromboembolic complications.

**Learning points**

▸ Spontaneous echo contrast is a marker of increased thrombogenicity in cases with sluggish blood flow in two-dimensional echo in absence of an obvious clot, especially in sinus rhythm patients.

▸ It may be considered as an indication for anticoagulation and for aggressive follow-up and monitoring for thromboembolic complications, to avoid potentially ignoring a large chunk of patients who are denied anticoagulation therapy despite being at increased risk as has been demonstrated previously.

▸ It can be taken as an evidence of disease severity and an indication for therapeutic intervention.

**Correction notice** This article has been corrected since it was published online on 2 July 2013. Videos 1-3 was previously omitted and has now been included.

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**REFERENCES**

