'Bird-beak sign' of left atrial thrombus: a guide to management

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DESCRIPTION

A 24-year-old man presented with history of dyspnoea on exertion (New York Heart Association class III) of 4 months duration. After evaluation the patient was diagnosed as severe rheumatic mitral stenosis (MS) (mitral valve area 0.9 cm^2) with dilated left atrium and atrial fibrillation (AF). The valve morphology was suitable for percutaneous trans-septal mitral commissurotomy (PTMC). Transesophageal echocardiography showed a large thrombus in left atrial appendage (type Ib) protruding to the left atrium (LA). The thrombus had an echolucent centre giving appearance of bird's beak ('Bird-beak sign'; figure 1, see online supplementary video 1). The patient was started on aggressive anticoagulation, rate control and diuretic therapy. After 2 months the patient underwent successful PTMC.

LA thrombus is seen in up to 33% patients with mitral stenosis in AF and is associated with increased morbidity and mortality.¹ The echolucent centre suggests that the thrombus is relatively new and is actively growing.² This has practical

importance for patient management as PTMC can be performed safely in presence of organised LA clot (types Ia, Ib and IIa).³ PTMC should be deferred till the clot resolves or get organised. Also the thrombus with echo-lucent centre carries a high risk of systemic embolism.² The recognition of 'Bird-beak sign' in transesophageal echocardiogram carries paramount importance. These patients need aggressive anticoagulation and should be closely followed. The other risk factors for LA clot formation and embolisation in MS includes AF, LA size $>4.5\text{ cm}$, LA appendage emptying velocity $<20\text{ cm/s}$, mobile thrombus and spontaneous echo contrast.

Learning points

- ▶ Left atrial thrombus in mitral stenosis is associated with high morbidity and mortality.
- ▶ 'Bird-beak sign' in transesophageal echocardiography is marker of recent and growing thrombus.
- ▶ It is associated with high risk of thromboembolism. Thus aggressive anticoagulation should be given before percutaneous trans-septal mitral commissurotomy.

Competing interests None.

Patient consent Obtained.

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Figure 1 Transesophageal echocardiogram (colour B mode) showing thrombus (white arrow) with echolucent centre ('Bird-beak sign') in left atrial appendage slightly protruding to left atrium.

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