Moving Ball in Left Atrium-Presenting as Recurrent Syncope

Others Section

BHUPENDRA KUMAR SIHAG¹, BASANT KUMAR², NEELAM³, SANJEEV H NAGANUR⁴

ABSTRACT

In patients with rheumatic mitral valve stenosis having atrial fibrillation, the "Ball valve thrombus" is an uncommonly encountered complication. A case of 42-year-old male with rheumatic severe mitral stenosis, mild aortic stenosis with moderate regurgitation presented with recurrent episodes of non-exertional syncope for seven days as chief symptom. He was in atrial fibrillation with controlled ventricular rate and echocardiography, showed a large ball valve thrombus in the left atrium. Thus, echocardiography facilitated for rapid diagnosis and earliest surgical intervention as a life saving measure.

Keywords: Ball valve thrombus, Mitral stenosis, Rheumatic heart disease

CASE REPORT

A 42-year-old male, singer by profession, presented with recurrent non-exertional syncope for seven days without history of palpitation, dyspnoea, paroxysmal nocturnal dyspnoea. On further evaluation, pulse rate was irregular and rate was 70/min; blood pressure was 120/80 mm Hg in the right arm in supine position. Cardiovascular system examination revealed features suggestive of severe mitral stenosis and mild aortic stenosis and moderate regurgitation. He never visited any physician for his illness. On further investigation, ECG showed atrial fibrillation with controlled ventricular rate [Table/Fig-1]. His echocardiogram was suggestive of severe mitral stenosis, moderate aortic regurgitation with mild stenosis. There was a large freely mobile thrombus measuring 23×24 mm in left atrium, frequently impinging on stenotic mitral valve orifice [Table/Fig-2] and [Video-1-3]. He was immediately started on anticoagulation and referred for mitral valve replacement and clot removal.



[Table/Fig-1]: ECG showing atrial fibrillation



[Table/Fig-2]: (a) Showing thrombus in left atrium protruding into mitral valve; and (b) Showing free ball-valve thrombus.

DISCUSSION

In rheumatic mitral valve disease, left atrial thrombosis is a frequent entity [1]. It is more commonly seen in enlarged atrium

with atrial fibrillation [2]. Around one third of patients with rheumatic severe mitral stenosis with atrial fibrillation will have left atrial thrombus [3]. The prevalence of ball-valve thrombus in such a population is not well documented in the literature. The common complication of ball valve thrombus is systemic embolization, heart failure, Cerebrovascular Accident (CVA) or sudden cardiac death [4]. Our patient presented with recurrent non-exertional syncope as his chief complaint, which is a well described feature in ball valve thrombus [5]. It is hypothesised that the ball valve thrombus is initially formed in the left atrial appendage which subsequently extends into the left atrium and later, this spherical-shaped thrombus when gets disconnected from the left atrial wall, spins at a random speed in a clockwise direction [6]. In systole, it is propelled backwards into the left atrium by the anterior mitral leaflet causing intermittent ping-pong acceleration [5]. This results in intermittent left ventricular inflow obstruction causing syncope.

Echocardiography is an easily accessible and non-invasive tool for prompt diagnosis of these conditions. Emergent surgery to remove the ball valve thrombus should be considered given its potential life threatening nature [7].

CONCLUSION

In rheumatic heart disease, mitral stenosis is common valvular lesion where left atrium thrombosis occurs commonly. If the thrombus becomes large and freely mobile and obstructs the mitral inflow, the patient may present as recurrent syncope. Prompt surgical intervention is life-saving.

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PARTICULARS OF CONTRIBUTORS:

- Assistant Professor, Department of Cardiology, Postgraduate Institute of Medical Education and Research, Chandigarh, India.
 Assistant Professor, Department of Cardiology, Postgraduate Institute of Medical Education and Research, Chandigarh, India.
- Assistant Professor, Department of Cardiology, Postgraduate Institute of Medical Education and Research, Chandigarh, India.
 Assistant Professor, Department of Cardiology, Postgraduate Institute of Medical Education and Research, Chandigarh, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Basant Kumar, Assistant Professor, Department of Cardiology, PGIMER, Sector-12, Chandigarh-160012, India. E-mail: basantvimal@gmail.com

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