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Case Note

Ping pong ball in the hefty heart: A case report

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Abstract
We describe here a very unusual case of a large free floating left atrial thrombus due to critical mitral stenosis detected by incidental echocardiography, in whom peculiar symptoms and complications of ball thrombus were absent. The patent's only symptom was mild dyspnoea attributed to smoking. She had no syncope or arrhythmia induced embolic event. Owing to non-availability of cardiothoracic facility, she was given anticoagulant therapy which resulted in intracerebral haemorrhage and death.

Key words: Ball thrombus, mitral valve disease, asymptomatic, anticoagulant therapy, intracerebral bleed.

Mural thrombus in left atrium or its appendage is a common finding in mitral valve disease with arrhythmia but potentially fatal free floating ball valve thrombus is rare. The thrombus can produce abrupt obstructive mitral failure or catastrophic embolic event.

Here we report an unusual case of large left atrial floating thrombus in a long standing case of critical mitral stenosis without arrhythmia or any complication but she died shortly after prophylactic anticoagulant therapy out of intracerebral bleed.

Case Report

Afebrile 53-year-old smoker presented with breathlessness for last one year. She had no syncope or palpitation. There was no history of childhood joint pain or sore throat. Routine physical examination revealed apical middiastilic rumble with presystolic accentuation and pansystolic murmur. She had early diastolic murmur at Erb's area also. Her temperature was 98.4^0F, presure110/60 and pulse 88 /min, regular. All other physical examination was unremarkable. Other laboratory investigations including liver, thyroid function, haemogram, coagulation profile and biochemistry were unremarkable. Electrocardiogram showed right axis deviation, clockwise rotation and right ventricular hypertrophy. Chest skiagram showed cardiomegaly and mitralization of heart. Transthoracic colour flow Doppler echocardiography revealed: LA 60.4 mm, Ao27.7mm, LVID54 mm (Diastole) and 37.5(Systole).EF:57%, mitral valve area 0.69cm^2 and no evidence of valvular vegetation. There is an echogenic large left atrial snow ball like mobile mass (Fig 1) resembling a thrombus which rolled and tumbled around the left atrium and bounced off the atrial walls suggesting a free floating thrombus in a case of mild mitral regurgitation, moderate aortic regurgitation and severe mitral stenosis.

As there was no available cardiothoracic facility, besides frusemide-amiloride combined tablets and digoxin she was put on heparin followed by warfarin with a international normalized ratio of 3.5.On the 6th day of hospital stay, the patient suddenly went into deep coma, convulsion with decorticate posturing. Computerized tomographic scan revealed massive haemorrhage in both basal ganglia with ventricular extension (Fig 2). The patient died on 10th day of hospitalization.

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Fig1: Free floating ball Thrombus

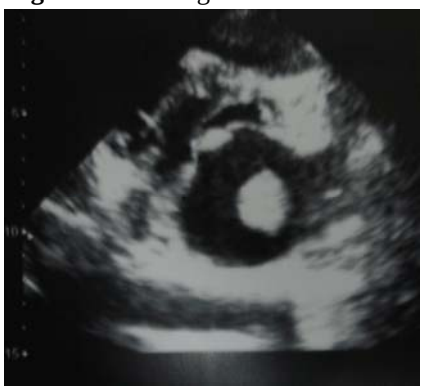
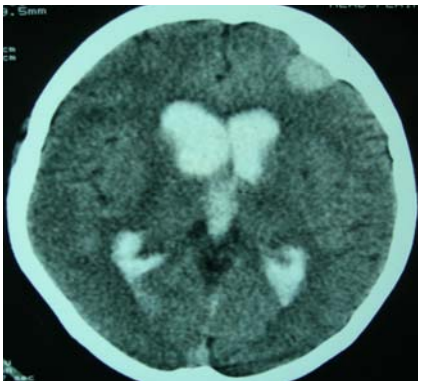


Fig 2: Intracerebral haemorrhage



Discussion

Left-atrial thrombus is an infrequent complication of mitral valve disease. Ball thrombus originates as mural thrombus on interatrial septum. Thrombus enlarges slowly to form a projecting mass being connected with a pedicle from atrial wall. As the bulbous end of thrombus enlarges due to fibrin and platelet deposition, the pedicle lengthens and thins out and eventually separates or fragments from the main ball thrombus. Thrombus spins freely in dilated left atrium and acquires characteristic smooth polished appearance[1]. Transient embolism or stroke occurs during thrombus development.

Our patient did not experience any such event before hospital admission. In hospital she was diagnosed clinically to have obstructive airway with valvular heart disease, confirmed by transthoracic colour-flow Doppler study. Her dyspnoea and preferred supine posture were attributed to emphysema and the pansystolic murmur was ascribed to tricuspid regurgitation owing to pulmonary hypertension and right ventricular hypertrophy. Due to non-availability of surgical option, she was put on prophylactic warfarin after initial heparin therapy with normal target range of activated partial thromboplastin time and international normalized ratio [3-3.5].But on the 6th post hospitalization day suddenly she developed haemorrhagic carebrovascular accident, confirmed by brain scan and died on10th day.

Prior to advent of surgical treatment of mitral stenosis nearly 20% of patients used to die at some time during the course of the disease and about 10-15 % of this group died from its complications[2]. Before the era of anticoagulant therapy and surgical treatment, approximately one-fourth of all fatalities in patient with mitral valve disease were secondary to thromboembolism[3].Embolization correlates inversely with cardiac output and directly with patient's age and size of left atrium; 80% of patients with mitral stenosis in whom systemic emboli develop are in atrial fibrillation and this risk of recurrent events exceeds 10% per year.

If embolization occurs in patients with sinus rhythm, the possibility of transient atrial fibrillation and underlying infective endocarditis should be considered[4]. Rarely abrupt left atrial outflow tract obstruction from large pedunculated ball valve thrombus in variable body position may cause syncope or sudden death, requiring emergency surgical intervention which gives a survival benefit of more than 90%[5].Free-floating ball thrombus is a rare and dramatic finding seen on echocardiography in patients with mitral valve disease and may even persist after valve replacement and adequate anticoagulation[6].

Here the clinical diagnosis was difficult as there were few symptoms and no complications of rheumatic mitral valve disease. Secondly, obstructive airway disease which misled the clinician until she had undergone the colour flow Doppler echocardiogram clinching diagnosis of multiple valvular lesions and large free floating ball valve thrombus. The pressure and pulse did not point any clue to the diagnosis. Clinically she had presystolic, middiastolic, early diastolic and pansystolic murmur. She had neither varied symptoms like dyspnoea[7] nor any change of murmur in different body position.

Here, the most unfortunate event was that the patient remained alive for many years before hospital admission but died soon after institution of anticoagulant therapy. The poor socioeconomic condition was also responsible for her premature death as she had no money to go to higher cardiothoracic centre for operation.

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