

LEFT ATRIAL MYXOMA: TWO DIMENSIONAL ECHOCARDIOGRAPHIC DIAGNOSIS

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SUMMARY

A patient with a left atrial myxoma is reported to illustrate the value of two dimensional real time echocardiography in the diagnosis of intracavitary cardiac tumours.

INTRODUCTION

Intra-cavitary cardiac tumours are rare and a high index of suspicion is required on the part of the physician to make the clinical diagnosis. With the advent of two dimensional real time echocardiography this diagnosis can be easily and rapidly confirmed. Over the past two decades M-mode echocardiography has been widely used for the diagnosis of left atrial myxomas. Though it has been shown to be highly satisfactory, in a small group of patients with small immobile tumours M-mode echocardiography may be normal¹ and two dimensional real time echocardiography would be needed to establish the diagnosis. This case report illustrates the use of echocardiography in the diagnosis of a left atrial myxoma but it may be inferred that other intra-cavitary cardiac tumours (primary or secondary) and thrombi can be easily visualised with two dimensional real time echocardiography.

CASE REPORT

A 45 year old Chinese woman presented with a

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history of poor effort tolerance for a year. In addition she had episodes of sudden collapse requiring hospitalization at two city hospitals in Kuala Lumpur. During the last episode she was noted to have heart failure and a murmur was heard on auscultation of the heart. On clinical examination she had mild jaundice and ankle oedema. The jugular venous pressure was raised and the pulse rate was 80/min. normal volume. Blood pressure was 130/70 mmHg. There was a left parasternal heave. In the mitral area a grade 3/6 mid-diastolic murmur with an obvious late third heart sound was audible. The liver was palpable. The electrocardiogram showed right ventricular and left atrial hypertrophy. Plain chest radiographs showed that the heart was enlarged with upper lobe pulmonary venous dilatation. The main pulmonary artery appeared prominent. There was panhypergamma globulinaemia and the erythrocyte sedimentation rate was elevated. Serum bilirubin 21/mg/l (conjugated bilirubin 13 mg/l, unconjugated 8 mg/l).

An M-mode echocardiogram was performed on 22.10.80 using a Smith Kline Ekoline 20A Ultra sonoscope coupled with a Cambridge fibre-optic strip chart recorder. A 1.5 mm diameter 2.25 MHz transducer prefocused at 10 cm and a repetition rate of 1000 per second permitting an examination of up to 20 cm tissue depth was positioned along the left sternal edge. The mitral valve, aortic valve, aortic root and left atrium were well visualised. Two dimensional echocardiographic studies were performed with an Emisonic 4290 mechanical sector scanner using a 2.5MHz transducer with a sector angle of 90°, frame speed of 24 frames/second and a pulse repetition frequency of 2400 pulse/second. Ultrasonic tomograms of the heart were obtained in multiple planes from all available acoustic windows including the

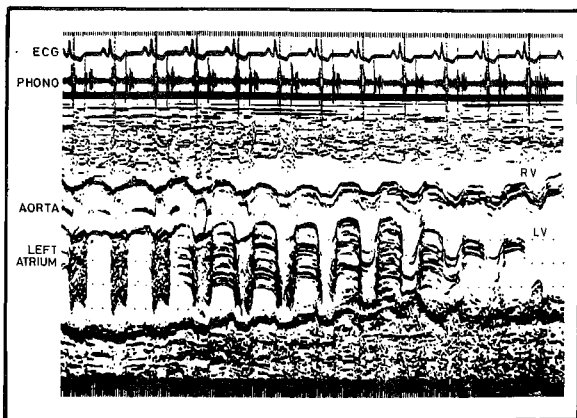


Fig. 1 M-Mode echocardiogram showing the characteristic cloud of multi-layered mass of echoes posterior to the anterior leaflet of the mitral valve in diastole; during systole this cloud of multi-layered mass of echoes appears in the left atrial cavity. The phonocardiogram shows an obvious third heart sound.

LV = left ventricle RV = right ventricle

parasternal, apical and subxiphoid projections as recommended by the American Society of Echocardiography. The examinations were recorded on 8 mm cine film in real time for later analysis. Polaroid stop-frame pictures were obtained as well.

The M-mode echocardiograms (Fig. 1) showed typical features of a left atrial myxoma which include the presence of a cloud of multilayered mass of echoes posterior to the anterior leaflet of the mitral valve in diastole. During systole this cloud of multilayered mass of echoes appears in the left atrial cavity and the mitral valve appears to be free of it. The diastolic closure rate of the anterior leaflet of the mitral valve appears to be reduced.

Two dimensional echocardiographic study showed a large intra-atrial mass (Figs. 2 and 3) measuring 4 cm by 3 cm which was attached to the interatrial septum by a stalk. During systole the tumour rests within the left atrial cavity clearly separated from the normal mitral valve which showed normal coaptation of the tips of both the leaflets. In diastole the tumour is noted to move into the inflow tract of the left ventricle and virtually obstructs the mitral valve orifice.

A cardiac catheterisation was performed and no shunts were present on oximetry. Haemodynamic data obtained included: aortic pressure 95/55 mmHg; left ventricular pressure 95/0/10 mmHg; right ventricular pressure 90/0/6 mmHg; pulmonary artery pressure 90/38 mmHg; mean

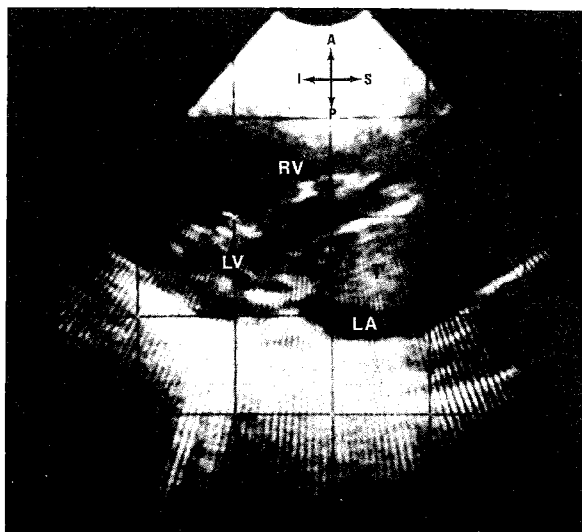


Fig. 2A. Two dimensional echocardiogram (left parasternal long axis view) showing 3x4 cm tumour mass in the left atrial cavity in systole. AO = aorta; RV = right ventricle; LA = left atrium; LV = left ventricle; T = tumour; S = superior; I = inferior; A = anterior and P = posterior.

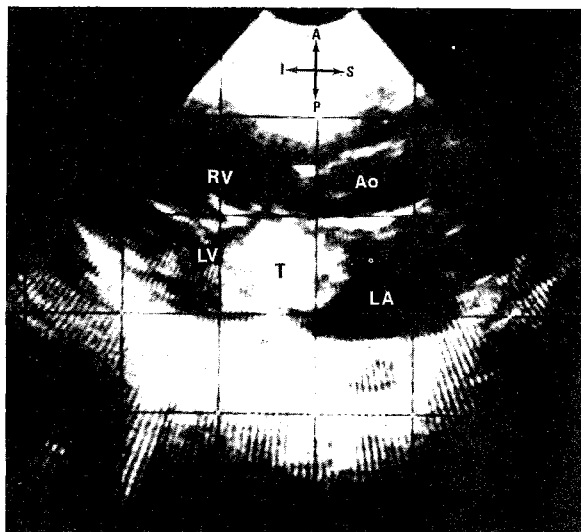


Fig. 2B. Two dimensional echocardiogram (left parasternal long axis view) showing the tumour virtually obstructing the mitral valve orifice. AO = aorta; RV = right ventricle; LA = left atrium; LV = left ventricle; T = tumour; S = superior; I = inferior; A = anterior and P = posterior.

pulmonary arterial wedge pressure 30 mmHg; right atrial pressure 2 mmHg; cardiac output 4.2 litres/minute. A pulmonary angiogram was done and the contrast followed through to the left atrium. This demonstrated a large filling defect in

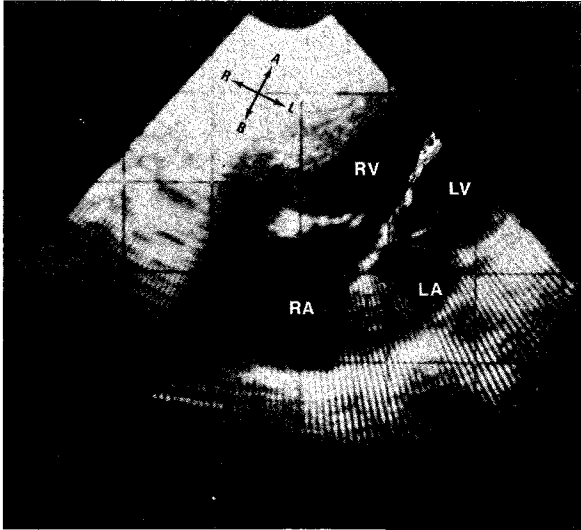


Fig. 3A. Two dimensional echocardiogram (left parasternal 4 chamber view) showing the tumour within the left atrial cavity attached to the interatrial septum.

RV = right ventricle; RA = right atrium; LV = left ventricle; LA = left atrium; T = tumour; A = apex; B = base; R = right; L = left.

the left atrium in systole.

The left atrial tumour was resected under cardiopulmonary by-pass on 29.10.80. A large lobulated mass with a myxoid appearance showing some haemorrhagic areas weighing 75 gms and measuring 2.5 cm by 4.5 cm was found attached to the interatrial septum. Histopathological examination showed that the tumour had a myxoid stroma in which stellate cells were present. Capillaries are seen and some endothelial cells form small gland-like spaces. Areas of recent and old haemorrhages were present. The post-operative course was uneventful. The patient has since remained asymptomatic. A repeat two dimensional echocardiogram twenty months after surgical correction revealed no recurrence of tumour in the left atrial cavity.

DISCUSSION

As illustrated in this case report two dimensional real time echocardiography provides better display and more information as to the site, size, shape and mobility of intracavitary cardiac tumours.² However the clinical presentation of intracavitary cardiac tumours may be rather varied and frequently present with signs and/or symptoms of blood flow obstruction such as syncope, peripheral embolisation or unusual constitutional symptoms³

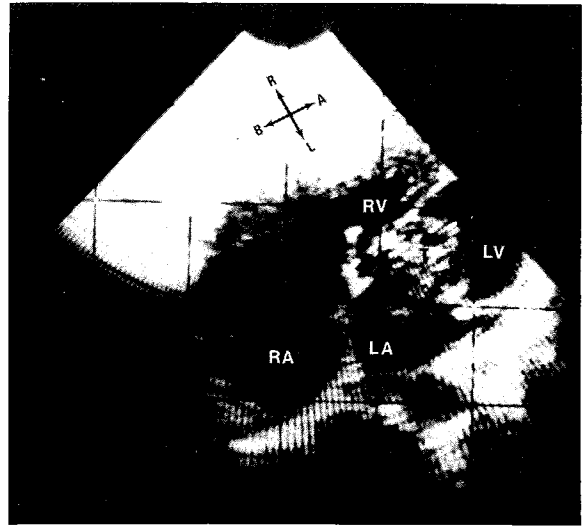


Fig. 3B. Two dimensional echocardiogram (left parasternal 4 chamber view) showing the tumour in diastole virtually obstructing the mitral valve orifice.

RV = right ventricle; RA = right atrium; LV = left ventricle; LA = left atrium; T = tumour; A = apex; B = base; R = right; L = left.

and the diagnosis may be easily missed. The physical signs may mimic mitral stenosis or regurgitation. A rather delayed opening snap in the presence of significant symptoms should indicate that it is a third heart sound and should arouse clinical suspicion of the disease. Cardiac myxomas are easily operated on as is illustrated by this case report and hence it is mandatory that two dimensional echocardiography be performed on all patients where the clinical diagnosis is suspected. It can also be used to follow up the patients post-operatively to detect early recurrences of the tumour.

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