

Cardiac Myxomas *

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SUMMARY

Five patients with Cardiac Myxomas are presented, one arising from the left ventricle, one from the right ventricle and three from the left atrium. All the cases were diagnosed on 2 D Echocardiography. Their clinical features are discussed.

INTRODUCTION:

Cardiac myxomas are the commonest intra-cardiac tumours; the commonest site being the left atrium near the fossa ovalis (70%) followed by 25% in the right atrium. The remaining 5% occur in the left ventricle and the Right Ventricle.

Left Ventricular myxomas constitute 2.5% to 4% of all myxomas. Majority of the cases described in the literature are females below the age of 30 years.

Echocardiography has revolutionised the diagnosis of cardiac myxomas.

CASE REPORTS:

CASE 1: I.A. 23/m March, 1984.

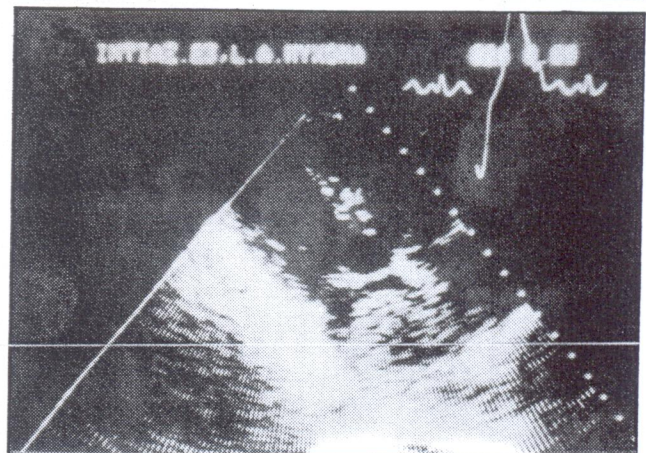
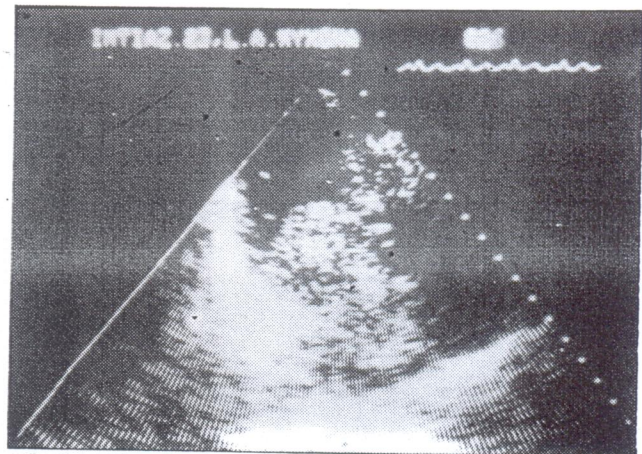
Symptoms: Occasional Palpitations and dizziness; but was asymptomatic, usually.

Signs: Right Parasternal Lift. Accentuated third sound.

E.C.G: Within normal limits.

Chest X-ray: Within normal limits.

2-D Echo: It showed a big tumour mass moving up and down in the L.V. in each cardiac cycle occupying almost whole of L.V. cavity in the diastole.



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M-Mode: It confirmed the presence of :
 a) Dense echoes behind the A.M.L. during diastole with echo free zone in early diastole.
 b) E-F slope normal.
 c) A.M.L. not thickened.

This patient was operated and the diagnosis of L.A. Myxoma was confirmed. The patient was cured.

CASE 2: A.H. 60/m average built.

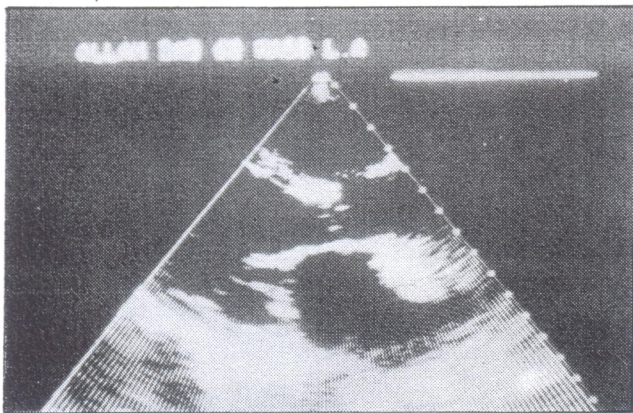
Symptoms: Shortness of breath: off and on for 10 yrs
 Palpitations: off and on for 10 yrs.
 Cough : off and on for 10 years.
 2 episodes of hemoptysis.
 Occasional retrosternal chest pain.
 Occasional swelling of feet.

Signs: Grade II apical systolic murmur.
 B.P. : 100/70.

E.C.G. : Sinus tachycardia 120/min.

Chest X-ray: Within normal limits.

2-D Echo: Tumour mass in left atrium moving down in the Left Ventricle during diastole.



M-Mode: Confirmed the presence of tumour mass in the left atrium behind the A.M.L.

The patients was operated and the diagnosis was confirmed at operation and biopsy.

CASE 3: R.A. 64/m From Chackwal, June 1986.

Symptoms: Shortness of breath: One and a half yrs
 Dizziness and vertigo: 6 months.
 Syncopal attacks: 6 months.
 Occasional swelling of feet.

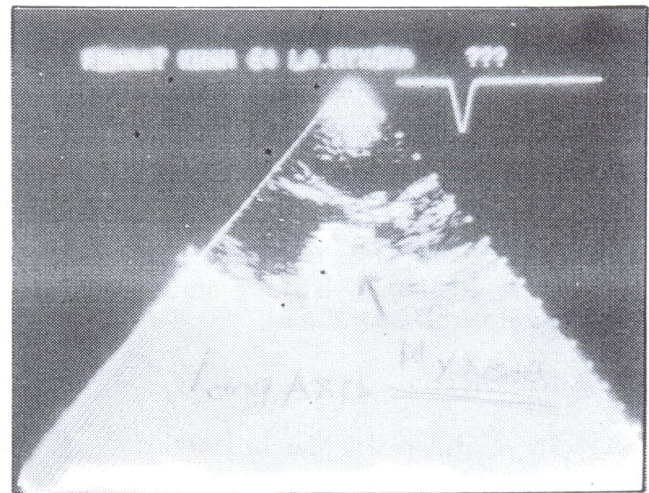
Signs: A pale lean, thin, non-smoking, middle aged man.
 J.V.P. elevated.
 Apical thrust normal.
 Grade III pansystolic murmur in the left parasternal region.
 Chest normal.
 Liver enlarged and palpable.

E.S.R. : 40 mm. in the first hour.

E.C.G. : Right Axis Deviation with L.A. and L.V. hypertrophy.

Chest X-Ray: Mild pleural effusion on left side.

2-D Echo: Showed a tumour mass in the Left Atrium.



M-Mode: Confirmed Left Atrial tumour.

This patient was referred to surgery but in spite of repeated persuasion and explanation he refused surgery and was discharged.

CASE 4: M.K. 25/m Sept. 1984.

Symptoms: Progressive shortness of breath : 2 yrs.
 Vague abdominal symptoms for 2 years.
 Dizziness, Black outs, feverish feeling and vague chest pain for 2 months.
 Swelling of feet for 2 months.

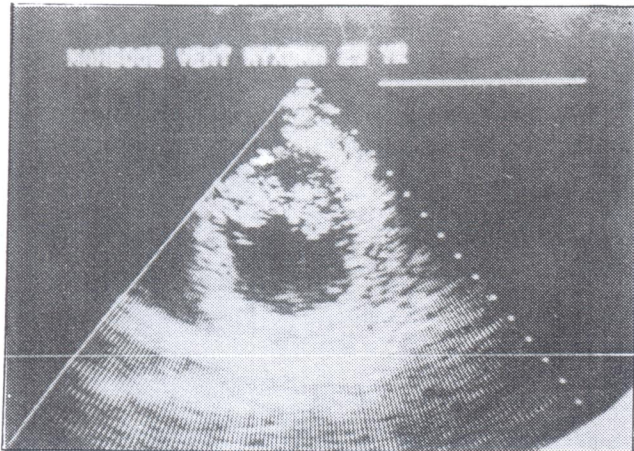
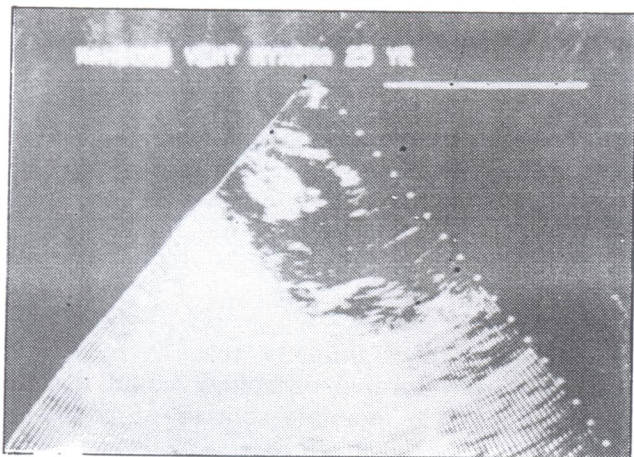
Signs: Average built.
Regular pulse: 80/min.
B.P. : 110/70.

J.V.P.: 8-10 cm. above the sternal angle. Ankle edema present. Apex palpable in the 5th left intercostal space outside midclavicular line. Accentuated third heart sound. Liver palpable 4 cm. below the costal margin.

E.C.G.: Non specific T-Wave flattening.

Chest X-Ray: Moderate cardiomegaly.

2-D Echo: 2 pedunculated tumour masses seen, one in connection with the septum and one with the apical wall of the left ventricle. The septum was moving in the Right Ventricle in systole and produced partial inflow obstruction.



Cardiac	Pulmonary Wedge Pressure: 6 mm.
Cath. :	Left Pulmonary Artery: 16/12
	Main Pulmonary Artery: 16/12
	Right Ventricle: 17/11
	Right Atrium: 14/10

The patient was explained and persuaded to undergo surgery which he deferred but did not turn up again.

CASE 5: M.A. 20/M Cobbler March 1986.

Symptoms: Fever 4 months.
Cough with hemoptysis: 2 months.

Signs: Young healthy looking man.
B.P. : 100/70.
Pulse 120/min regular.
Temperature: 98.4°F.
J.V.P. : normal.
Apex beat palpable in the 5th left intercostal space at the midclavicular line.
A systolic thrill palpable in the second and third left intercostal spaces. Fourth heart sound audible. Short Ejection Systolic Murmur at left second intercostal space, increasing in intensity on sitting up. Rest of the systemic examination was unremarkable.

T.L.C.: Normal.

E.S.R. : 55 mm. in the first hour.

Serum Protein Electrophoresis:
Shows normal albumin and alpha 1, alpha 2,
Beta and Gamma Globulin bands.

E.C.G. : Sinus tachycardia: 150/min.
T-Wave inversion in I, II, III.

Chest X-Ray: Normal.

2-D Echo: An echogenic mobile mass attached to the Right Ventricular Wall, obstructing the Right Ventricular outflow tract. Right Ventricular Hypertrophy.

Cardiac Cath: Oval negative shadow in the R.A.O in 45 degree position.

Patient was referred to Surgery.

DISCUSSION:

Cardiac myxomas are the most frequent benign intra cavitory tumours. Atrial myxomas originate from the region of fossa ovalis but might also arise from other locations. Right Atrial myxomas are more solid with a wider attachment and involve the septum and atrial wall more than the Left Atrial myxomas. These originate from various locations and produce tricuspid valve obstructions.

The clinical presentation of cardiac myxomas can be summarized under 3 headings:

1. Systemic Symptoms:

Fever, anaemia, rarely polycythemia, and episodes of dyspnoea and cyanosis. These symptoms are more common in Left Atrial myxomas. Constitutional symptoms are supposed to be less common with the left ventricular myxomas.

2. Obstructive symptoms:

Obstruction of the Mitral Valve in the Left Atrial Myxomas would produce syncopal attacks, cough, expectoration and sometimes symptoms resembling Mitral Stenosis.

Right atrial myxomas will obstruct the Tricuspid valve and would thus produce symptoms of Right Ventricular Failure. Similarly R.V. and L.V. myxomas tend to produce R.V. O.T. and L.V.O.T obstruction respectively.

3. Embolic Episodes:

Emboli can be systemic or pulmonary depending upon the site of myxoma. Systemic emboli

are reported in 40% to 50% of the patients of L.A. myxoma and in more than 50% of the L.V. myxomas (Meller 1979).

The commonest sites of embolisation are in the brain, kidneys, extremities and aortic bifurcation and may provide a clue of the presence of myxomas in an otherwise normal person.

Intra cranial mycotic aneurysms have been described after myxomatous emboli.

A SUMMARY OF L.V. MYXOMAS:

A summary of L.V. myxomas, after Meller. J. is given in the chart attached. (Table I).

The case numbers 3,4,5 were not operated and hence the diagnosis is based on echo findings only. It can be argued in case 4 that it was an organised thrombus however the following characteristics clearly differentiate the L.V. myxoma from thrombus:

- a) Pedunculated masses arising from the septum and L.V. wall.
- b) Masses are mobile.
- c) Granular appearance.
- d) Septum pushed into the R.V. cavity.

Moreover it is unlikely that a young man without other cardiac pathology could develop a thrombus. The possible sources of confusion could be:

- a) Pedunculated thrombus.
- b) Abnormal echoes in the outflow tract due to other tumours.
- c) Right sinus of Valsalva aneurysm.
- d) Flail A-V leaflet and A-V vegetations.

TABLE - 1

LEFT VENTRICULAR MYXOMAS (after Meller J. 1977)

Age (years) & Sex	Location of Emboli	Syncope	LV outflow obstruction	Duration of symptoms	Method of diagnosis	Outcome	Comments
10. F	Aorta, Kidneys Brain	Seizure	+	4 yrs.	Autopsy	Dead	Multicentric tumour. Death probably to myxomatous emboli to the brain.
32. F	Aorta, Brain	-	-	7 yrs.	Surgery	Alive	Operated for mitral valve disease.
45. F	-	-	-	-	Autopsy	Dead	Incidental finding. Death due to a myocardial infarction.
14. F	-	+	+	6 months	LV angiography	Dead	Multicentric tumour, death 8 days after resection of one myxoma. Questionable renal failure.
52. F	Aorta	-	-	4 yrs.	LV angiography	Alive	
43. F	-	-	-	-	Autopsy	Dead	Incidental finding, mitral stenosis, rheumatic pericarditis, congestive failure.
15. M	Aorta, Kidneys Brain	-	+	2 yrs.	LV angiography	Dead	Death in early postoperative period resection of myxoma.
24. M	?	?	+	?	Angiography	Alive	No more details.
25. M	Kidneys, Brain coronary arteries.	?	+	2 yrs.	Autopsy	Dead	Emboli during exertion, death due to myxomatous emboli to brain.
17. M	Brain	+	-	1½yr	Autopsy	Dead	Emboli to brain causing death.
20. F	-	+	+	5 yrs.	Surgery	Alive	Syncope during exertion, operated for questionable aortic valve disease.
11. F	Aorta	-	-	2 yrs.	Histology of emboli	Alive	
50. F	-	-	-	?	Surgery	Alive	Operated for mitral valve disease.
16. F	Brain	?	?	1 year	Angiography	Alive	Neurological defect. No more details.
10. M	Brain, Coronary arteries.	+	+	4 yrs	LV angiography	Alive	
33. M	-	+	+	17 yrs	Echocardiography	Alive	

References:

1. Goldberg, H. P., Glenn, F., Dotter, C. T., and Steinberg, I. : Myxoma of the Left Atrium: Diagnosis made during life with Operative and Post Mortem Findings, *Circulation*, 6 : 762, 1952.
2. Peters, M.N., Hall, R.J., Cooley, D.A., Leachman, R.D., and Garcia, E. : The Clinical Syndrome of Atrial Myxoma, *J. Am. Med. Assoc.*, 230 (5) : 694, 1974 (82 references).
3. St. John Sutton, M. G., Mercier, L.A., Giuliani, E. R., and Lie, J. T. : Atrial Myxomas: A Review of Clinical Experience in 40 Patients, *Mayo Clin. Proc.* 55 : 371, 1980.
4. Bulkley, B. H., and Weiss, J. L. : Atrial Myxomas : Triumph of Machine over Man, *Chest*, 75(5) : 537, 1979.
5. Bashey, R. I., and Nochumson, S. : Cardiac Myxoma: Biochemical Analyses and Evidence for its Neoplastic Nature, *N. Y. State J. Med.*, 79(1) : 29, 1979.
6. Read, R. C., White, H. J., Murphy, M. I., Williams, D., Sun, C. N., and Flanagan, W. H. : The Malignant Potentiality of Left Atrial Myxoma, *J. Thorac. Cardiovasc. Surg.*, 68(6) : 857. (48 references)
7. Jugdutt, B. I., Rosall, R. E., and Sterns, L. P. : An Unusual Case of Recurrent Left Atrial Myxoma, *Can. Med. Assoc. J.*, 112 (9) : 1099, 1975 (15 references).
8. Desousa, A. L., Muller, J., Campbell, R., Batnitzky, S., and Rankin, L. : Atrial Myxoma: A Review of the Neurological Complications and Metastases and Recurrences, *J. Neurol. Neurosurg. Psychiatry*, 41 (12) : 119, 1978. (35 references).
9. Morgan, D. L., Palazola, J., Reed, W., Bell, H.H., Kindred, L. H., and Beaucamph, G. D. : Left Heart Myxomas, *Amer. J. Cardiol.*, 40 (4) : 611, 1977.
10. Crawford, F. A., Jr., Selby, J. H., Jr. Watson, D., and Joransen, J. : Unusual Aspects of Atrial Myxoma, *Ann. Surg.*, 188(2) : 240, 1978.
11. Rees, J. R., Ross, F. G., and Keen, G. : Lentiginosis and Left Atrial Myxoma, *Br. Heart J.*, 35 (8) : 874, 1973.
12. O'Neil, M. B., Jr. mGrehl, T. M., and Hurley, E. H. : Cardiac Myxomas : A Clinical Diagnostic Challenge, *Am. J. Surg.*, 138 : 68, 1979.
13. Kaminsky, M. E., Ehlers, K., Engle, M. E., Klein, A. A., Levin, B. R., and Subramanian, V.A. : Atrial Myxoma Mimicking a Collagen Disorder, *Chest*, 75 (1) : 93, 1979.
14. Bradham, R. R., Gregorie, H. B., Jr., Howell, J. S., Jr., Rivers, C. F., Jr., and Barnwell, W. H. : Aortic Obstruction from Embolizing Cardiac Myxoma, *J. S. C. Med. Assoc.*, 75 (1) : 7, 1979.
15. Tipton, B. K., Robertson, J. H., and Robertson, J.T. : Embolism to the Central Nervous System from Cardiac Myxoma: Report of Two Cases, *J. Neurosurg.*, 47(6): 937, 1977.
16. Case Records of the Massachusetts General Hospital, Weekly Clinicopathological Exercises. Case 42-1793, *N. Engl. J. Med.*, 289 (16) : 853, 1973.
17. Gialiani, E. R., Lemire, F., and Schattenberg, T. T. : Unusual Echocardiographic Findings in a Patient with Left Atrial Myxoma, *Mayo Clin. Proc.*, 53 (7) : 469, 1978.
18. Lappe, D. L., Bulkley, B. H., Weiss, J. L. : Two Dimensional Echocardiographic Diagnosis of Left Atrial Myxoma, *Chest*, 74 (1) : 55, 1978.
19. Vozzi, C. R., Pechacek, L. W., Garcia, E., Marthur, V. S., de Castro, C. M., and Hall, R. J. : Two Dimensional Echocardiography in the Diagnosis of Unusual Left Atrial Myxomas, *Cardiovasc. Dis.*, Bull. Texas Heart Institute, 7 (3) : 246, 1980.
20. Lee, Y. C., and Magram, M. Y. : Nonprolapsing Left Atrial Tumour. The M-Mode Echocardiographic Diagnosis, *Chest*, 78 (2) : 332, 1980.
21. Moses, N. W., and Nanda, N. C. : Real Time Two Dimensional Echocardiography in the Diagnosis of Left Atrial Myxoma, *Chest* 78 (5) : 788, 1980.
22. Meller, J, Teichholz, L.E., Pichard, A.D., Matta, R., Litwak, R., Herman, M. V., and Massie, K. F. : Left Ventricular Myxoma : Echocardiographic Diagnosis and Review of Literature.
23. Martinez, E. C., Giles, T. D., and Burch, G. E. : Echocardiographic Diagnosis of Left Atrial Myxoma, *Am. J. Cardiol.*, 33 (2) : 281, 1974.
24. Muroff, L. R., and Johnson, P.M. : Right Atrial Myxoma Presenting as Nonresolving Pulmonary Emboli : Case Report, *J. Nucl. Med.*, 17 (10) : 890, 1976.
25. Ports, T. A., Schiller, N. B., and Strunk, B. L. : Echocardiography of Right Ventricular Tumours, *Circulation*, 56 (3) : 439, 1979.