PRIMARY CARDIAC TUMOURS - CLINICAL EXPERIENCE IN 24 PATIENTS

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We reviewed our clinical experience in 24 patients with cardiac tumours. All the patients were found to have myxomas. There were 8 males and 16 females. Their ages range from 14 to 73 (mean 48) years. Prior to echocardiographic examination, cardiac myxoma was suspected clinically in only 2 cases. The remaining patients were initially diagnosed as having mitral valvar diseases (9 cases), infective endocarditis (3 cases), congestive cardiomyopathy (4 cases), pericardial effusion (1 case) and Ebstein's malformation (1 case). The tumor was in rthe left atrium in 18, in the right atrium in 4, in the biatrium in 1, while one was in the right ventricle. All patients underwent open heart surgery for excision of myxoma and there was no surgical mortality. Follow-up for mean period of 32 months (range 2 to 99 months) was possible in 18 patients with no evidence of recurrence. We conclude that cardiac myxoma is the commonest cardia tumour. It may mimic many cardiovascular diseases, so a high index of suspicion in important for its diagnosis. Echocardiography is the most useful diagnostic screening tool.

INTRDUCTION

Cardiac myxomas are uncommon and the commonest of the tumours is myxoma.[1] Due to their protean clinical manifestations, may mimic many cardiovascular systemic diseases. Unless the physician has a high index of suspicion, the diagnosis can be missed resulting in morbidity or mortality. Once considered as a possible diagnosis, it is easily recognized by the echocardiography and surgical excision is usually curative. We reviewed 24 patients seen in our hospital and dlineate the clinical features that allow the physician to suspect this rare disease.

MATERIAL AND MOTHODS

PATIENTS

Cardiac myxoma was discovered in 24 patients between December 1998 and December 2006. The diagnosis was based on the histologic examination of the tumor after surgical excision of embolectomy. There were 8 males and 16 females. Ages ranged from 14 to 73 years with a mean of 48. Of the 24 patients, the myxoma was in the left atrium in 18, within the right atrium in 4 patients, biatrium in 1 and in characteristics of these 24 patients are summarized in table 1.

Table-1
Patient population

Number of patients	24
Sex ration (M:F)	8:16
Age	14-73 years (mean:48)
Left atrial myxoma	18
Right atrial myxoma	4
Biatrial myxoma	1
Right ventricle myxoma	1

RESULTS

The major presenting symptoms are summarized in Table 2.

Table-2
Presenting symptoms in 24 patients

Presenting Symptom	No.	%
Heart Failure	19	79
Embolism	6	25
Fever	7	29
Weight Loss	9	37
Syncope	6	25

The Most common heart failure secondary to obstruction (79%). Systemic embolism occurred in 6 patients (3 patients with cerebral embolism, 1 patients with embolism to the abdominal aorta, 2 patient with peripheral arterial embolism) other systemic symptoms include fever, weight loss syncope and fatigue.

CHEST X-RAY

The chest X-ray showed cardiomegaly in 21 patients, diversion of blood flow in the upper lobe in 16 patients and left atrial enlargement in 15 patients.

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ELECTROCARDIOGRAM

The elesctrocardiogram showed that 21 patients were in sinus rhythm, while 3 patients had atrial fibrillation. Left atrial enlargement was noted in 4 patients, right atrial enlargement in 2 patients, 7 patients had right ventricular hypertrophy, 2 patients had left ventricular hypertrophy.

LABORATORY TEST

Anemia was present in 13 patients (defined as hemoglobin less than 14 g% in males, less than 12 g& in females). The erythorocyte sedimentation rate was elevated in 11 patients (defined as more than 10 mm in one hour in males and more than 20 mm in one hour in females). Plasma globulin was elevated in 8 patients (defined as more than 3.5g%).

ECHOCARDIOGRAPHY

M-mode echocardiography was performed in 20 patients and a myxoma was detected in all patients. 17 of these 20 patients had left atrial myxoma, 4 patients has a right atrial myxoma and one patient had biatrial myxoma. Cross-sectional echocardiographic examination was performed in 15 patients, demonstrating left atrial myxoma in 10 patients, right atrial myxoma in 2 patients and biatrial myxoma in 1 patients.

CARDIAC CATHETERIZATION

Cardiac catheterization and angiography were performed in 14 patients and presence of intracardiac tumor was detected in 12 patients. The tumor was in left atrium in 10, one patient had a right atrial and 1 patient had a right ventricle tumor.

CLINICAL DIAGNOSIS

The clinical diagnosis before echocardiography, angiography of surgery are summarized in Table 3. The cardiac myxoma was suspected clinically in only two patients.

ORIGIN OF CARDIAC TUMOURS

Of the 24 patients, pre operative findings as well as Histopathology confirmed final diagnosis of Cardiac Myxomas in all. Of the 18 cased with left atrial myxoma, the tumor originated from the interatrial septum in 17 cases and performed the lateral wall of the left atrium in the other case. Of the 4 cases with a right atrial myxoma, the tumor arose from interatrial septum in 3 and arose from Eustachian valve of the inferior vena cava in the other. In one the tumor arose from interatrial septum and was present in both atriums while the right ventricular myxoma arose from the anteroletral wall of the right ventricle.

SURGICAL TREATMENT AND FOLLOW-UP

Open heart surgery was performed in all the patients with no surgical mortality. 5 patients have been lost to follow-up, while 19 patients were followed up for a period ranging from 2 to 99 months (mean 32 months). All were well and no evidence of recurrence was noted.

DISCUSSION

Primary tumors of the heart are rare. The autopsy incidence of such tumors is about 0.007%, about half of which are myxomas.[1] In this series, cardiac myxoma occurred predominantly during the fifth and sixth decades of life (15/24, 63%), as found in other reports.[2,3] The sex distribution was mainly female in our series (female:male=2:1). In western countries the female to male ratio is about 3 to 1.[2,4]

Table-3
Clinical diagnosis in 24 patients

Clinical Diagnosis	No.
Mitral Valve Disease	9
Infective endocarditis	3
Congestive cardiomyopathy	4
Pericarditis with pericardial effusion	1
Left-sided cardiac myxoma with systemic embolism	2
Systemic embolism with unknown cause	1
Cerebrovascular accident	2
Ventricular septal defect	1
Ebstein's malformation	1

About 75% of cardiac myxomas occur in the left atrium, 20% in the right atrium and 5% in the ventricle.[5]

The most clinical problem was related to obstruction to blood flow manifested as heart failure (79%) as reported elsewhere.[6] Embolic phenomena were found in six patients (25%). Three of these patients had cerebral embolism and 1 had peripheral arterial embolism. The incidence of embolic phenomena in cardiac myxoma is said to range from 33% to 48% in some series.[7,8] The most common site is the brain, this occurring about half of the cases.[7] Large embolic lodging in the ab-

dominal aorta are not uncommon, and my follow other incidents of embolization or occur without premonitory symptoms.[11,12,13] Our 2 cases had no warning, so we recommend that patients with arterial embolic should be screened for cardiac myxoma my echocardiography whether or not precordial auscultatory abnormalities are apresent. The further more the material obtained from embolectomy should be examined histologically to rule out the possibility of myxomatous embolism.

Cardiac myxomas are notorious for mimicking a great variety of cardiovascular diseases. Of our cases, only two were suspected to have cardiac myxoma on clinical grounds. There fore a high index of suspicion by kphysician is essential for its diagnosis. The abnormal laboratory findings found in cardiac myxoma, including anemia, elevated erythocyte sedimentation rate and elevated levels of gammaglobulin, found in about half of the cases in this report, an incidence also similar to that reported previously.[6] Unfortunately, all of these are nonspecific, so their value diagnostically is not conclusive but should raise the possibility of the diagnosis.

The electrocardiogram is also non diagnostic, since it reflects hemodynamic abnormalities similar to those of disease of the mitral or tricuspid valves. The majority of the patients were in sinus rhythm (87.5%), so if a middle-aged patient presented with "mitral valvar disease" but was in sinus rhythm then the possibility of cardiac myxoma should be entertained and echocardiography examination would be recommended. The value of echocardiography in the diagnosis of cardiac myxoma has been well established.[14,15] In the present series, cardiac catheterization was performed without complication in 14 patients. Some [13,16,17] have reported complications of cardiac catheterization in patients with cardiac myxoma. This should not now be a problem, since catheterization is no longer indicated. Surgical excision of myxoma is safe and in our series, there was no operative mortality. In one report from Myo Clinic [6], there was one death in 37 patients (2.7%) undergoing surgical intervention. According to some observers [13], 8% of the patients with cardiac myxoma die suddenly while waiting for operation, so urgent surgical intervention is recommended as soon as cardiac myxoma is diagnosed. The tumor may recur after surgical excision, and the rate of recurrence had been reported as 7%.[18] There was no recurrence in our series of 19 patients who had been followed-up fro a mean period of 32 months (range 2.99 months).

In conclusion Primary Cardiac Tumour is a rare disease with myxoma being the commonest. Because of its protean clinical manifestation, a physician should be familiar with its clinical manifestation. A high index of suspicion is essential to its diagnosis. Echocardiography is the most useful diagnostic screening tool. Once cardiac myxoma is diagnosed, urgent surgical intervention is recommended. Recurrence is possible, so long-term follow-up and serial echcardiographic examinations are mandatory.

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