Biatrial Cardiac Myxoma: A Case Report

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Abstract  A 37 years old man presented with acute ataxia and vertigo. An axial brain CT Scan without contrast showed multiple subcortical hyperdence lesions. Brain MRI with gadolinium showed multiple hyperintence lesions. Transthoracic echocardiography showed large mobile biatrial masses. Biatrial masses were resected surgically. Both tumors had the histopathological features of benign cardiac myxoma. The clinical diagnosis was multiple brain emboli from cardiac myxoma. Myxoma is a primary benign cardiac tumor with a reported incidence of 0.0017% among the general population. The patient may present with constitutional symptoms, sequelae of valvular obstruction, embolic events or sudden death. Early diagnosis and treatment of these life threatening neoplasms is the challenge for physicians. Myxomas which arise from two different cardiac chambers are uncommon.

Keywords: myxoma, echocardiography, biatrial


1. Introduction

Primary cardiac tumor is accounting for less than 0.2% of all tumors found in human being [1]. Although about 75 % of intracardiac tumors are benign but they may be associated with major complications such as thrombus, valve obstruction or even sudden cardiac death [1]. Cardiac myxomas are the most common type of primary intracardiac tumors and originate primarily from left atrium (LA). Myxomas originating from right atrium (RA) are less common and those arising from two cardiac chambers are extremely rare fewer than 2.5% [1,2].

2. Case Report

A 37 years old man presented with acute ataxia and vertigo. His problem begins since last evening. Other symptoms were nausea, vomiting and diplopia. He said that four months ago he had similar symptoms for three days that resolved spontaneously. One year ago, he had two episodes of transient right hemifacial paresis. He suffered from bipolar mood disorder for seven years. Except for dilated pupils and ataxic gate the remainder of the exam was normal.

Electrocardiogram showed normal sinus rhythm, right axis deviation and right bundle branch block. Chest x ray was normal. The patient had elevated ESR and CRP levels.

An axial brain CT Scan without contrast was performed in emergency department and showed multiple subcortical hyperdence lesions.

In brain MRI with gadolinium, multiple hyperintence lesions were seen in T1 (Figure 1).
Transthoracic echocardiography showed large biatrial mobile masses (Figure 2) and in transesophageal echocardiography, a large mobile mass (60×27 mm) was seen in LA that attached to interatrial septum and aortomitral intervalvular fibrosa which protruded into LV through mitral valve during diastole. In RA also another mobile mass (43×31 mm) was seen (Figure 3).

**Figure 2.** Transthoracic echocardiography of left atrial tumor prolapsing in to left ventricle in diastole from parasternal long axis view at left and bialtrial tumors from apical four chamber view at right (arrows)

Surgical consult was performed and biatrial masses were resected using median sternotomy under cardiopulmonary bypass (Figure 4). RA mass was resected via right atriotomy and LA mass was resected from interatrial septal approach. A pericardial patch was used to reconstruct the interatrial septum. Both tumors had the histopathological features of benign cardiac myxoma (Figure 5).

**Figure 3.** Transesophageal echocardiography showing left atrial tumor(left) and bialtrial tumors(right)

**Figure 4.** Gross photograph of the surgically excised variegated right atrial myxoma with a friable and gelatinous texture
3. Discussion

The first myxoma diagnosed clinically was by Kirkeby and Leren in 1952 [3]. Subsequently, the first successful removal of a cardiac myxoma using cardiopulmonary bypass was performed in Stockholm at the Karolinska Institute by Clarence Crafoord on July 16, 1954 [4]. In 1967, Yipintsoi described the first successful removal of a bialtrial myxoma using cardiopulmonary bypass in a 37-year-old Thai policeman [3]. Bialtrial myxomas continue to be rare tumors. A report by Imperio at al. in 1980 described a total of three cases of successful removal of bialtrial myxomas in the literature [14] and approximately 19 cases was reported by Peachel in 1998 in the literature at that time [11] and finally a review of English literature by Irani et al. revealed ten other entries in 2008 [2].

Myxomas are benign primary cardiac tumors that most often (about 80%) are found in left atrium and in decreasing frequencies in right atrium (18%), right ventricle, left ventricle [5], and fewer than 2.5% are bialtrial [1,2,5]. The incidence of cardiac myxoma peaks at 40 to 60 years of age with a female-to-male ratio of approximately 3:1. Most myxomas occur sporadically but may be familial.

Early diagnosis for intracardiac tumor is difficult because the symptoms are frequently nonspecific [6]. The patient can remain asymptomatic for a long period of time before diagnosis [7]. The clinical manifestations have been classified by Goodwin as consisting of constitutional symptoms, sequelae of valvular obstruction and embolic phenomena [8]. Sudden death may occur from coronary embolization of tumor or sudden obstruction of the mitral valve orifice [9]. The heart auscultation may result in abnormal findings in 50% to 85% of patients [9,10]. These abnormalities may include a holosystolic murmur of mitral insufficiency, a systolic ejection murmur, a diastolic murmur of mitral stenosis, a loud S1 or S2, an S4, or a tumor plop [1,10,12,13]. None of the characteristics of Carney complex were present in our patient and he had no family history. He had no constitutional symptoms and cardiac examination was normal.

Anemia, elevated ESR, elevated C-reactive protein (CRP), and increased gamma globulin are of associated laboratory abnormalities [9,10].

The most useful examination in the diagnosis is the echocardiogram which could confirm the location and extension of myxomas with a highly diagnostic sensitivity. Plain chest X-ray or CT scan is not diagnostic except for the pulmonary metastasis in cases of malignancy or the metastatic tumor [15].

The only definitive treatment is surgical removal [5]. Life-long follow-up is needed because myxomas have some tendency to recur. Recurrence rates vary but range from 5% to 14%. The time to recurrence in different series has varied from 0.5 to 6.5 years [17].

Bialtrial myxoma is rare and initial presentation of the patient with bialtrial myxoma and CNS embolic symptoms is rare too. Although this is not the first case, we presented it to highlight the importance of careful examination of all cardiac chambers seeking additional tumors for early diagnosis and treatment of this life threatening condition.
to prevent irreversible complications or death. Because the recurrence rate is somewhat higher with biatrial myxoma, serial follow-up echocardiography and family screening is necessary. After surgery our patient had no symptom at six months follow up and repeat echocardiogram was normal.

Competing Interest

The author have no competing interests.

References