Case Report

Right Atrial Fibroma in an Adult Patient

Abstract

Left atrial fibroma as a benign tumor is an exceedingly rare left atrial mass. It has various clinical signs and symptoms and sometimes leads to serious complications such as lethal arrhythmia and death. We report a case of right atrial fibroma in a 40-year-old male who presented with dyspnea and atrial fibrillation. Transthoracic echocardiography revealed a large sessile mass attached to interatrial septum near the coronary sinus valve in the right atrium. The patient underwent surgical resection of tumor through the right atrium. The postoperative course was unremarkable. Histopathological examination showed that it was a fibroma. The 6-month follow-up revealed that the patient was in well condition with no evidence of tumor recurrence.

Keywords: *Atrial, death, fibroma, lethal arrhythmia, tumor*

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Introduction

The retrieval of cardiac fibroma rate from careful literature search introduced it as an exceptional cardiac neoplasm. During literature search, only 170 cases of fibroma were found in the cardiac chambers in the past 50 years. These tumors have a small size with a mean size of approximately 50 mm.[1] The first, second, and third most common locations of this neoplasm are in the left ventricle, right ventricle, and interatrial septum, respectively. Sixty percent of fibromata were found to be in the left ventricle, followed by 30% and 10% in the right ventricle and right atrium, respectively. The least mortality rate was found in tumors originating in the left or right ventricle; however, the highest mortality rate was observed in patients with intraseptal origin (60% of mortality).[2] The lower age of patient at the time of tumor diagnosis is considered as a risk factor for early mortality and poor survival rate.[3] In one study, both the lower age of patients at the time of detection and interatrial septal origin could be considered as risk factors that significantly determine a poor outcome because cardiac fibroma arising in the septum may be associated with conduction defect.

Case Report

A 40-year-old male with dyspnea, palpitation, and fatigue was admitted to our center for further evaluation. The physical examination was unremarkable. The blood pressure and heart rate were normal. Routine laboratory examinations were normal. On transthoracic echocardiography (TTE), a sessile mass was seen in the right atrium that was attached to interatrial septum. Coronary artery was found to be normal during cardiac angiography [Figure 1]. Due to the probable risk of pulmonary emboli and symptomatic features of the tumor, surgical removal was scheduled. Midline sternotomy was performed, and cardiopulmonary bypass was instituted with ascending aortic as arterial cannulation and bi-cava cannulation as venous cannulation. Cold cardioplegia (cryocardioplegia) was used in aortic root as antegrade for myocardial protection. The right atrium was opened transversely. On inspection of the right atrial cavity, a yellow mass (2.6 cm × 1.6 cm) above the coronary sinus orifice that bulged out to cavity was detected [Figure 2]. It had a yellow color, was fragile, not surrounded by any capsule, and was excavated with its underlying endocardium with a small rim of its peripheral septal tissue and endocardial defect repaired by running proline suture [Figure 3]. The left atrium was explored transseptally, and no evidence of tumor was found in the left atrium. Histopathologic examination showed that the mass was a fibroma [Figure 4] containing fibroblast cells in fascicles with abundant collagen fibers and no evidence of mitotic figures or malignancy. The patient's

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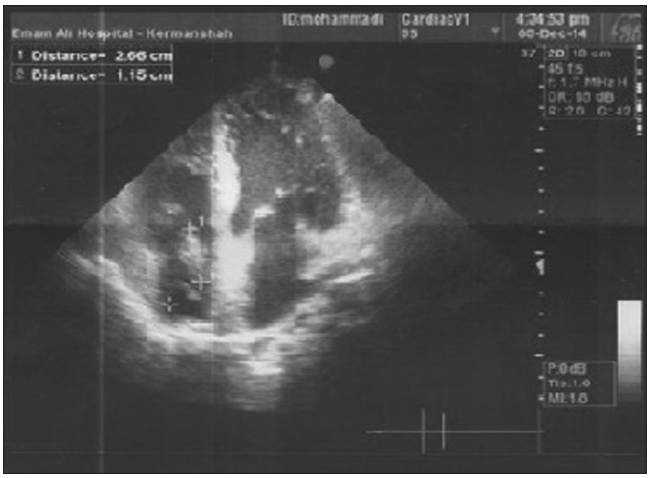

Figure 1: Right atrial mass in four chamber echocardiography

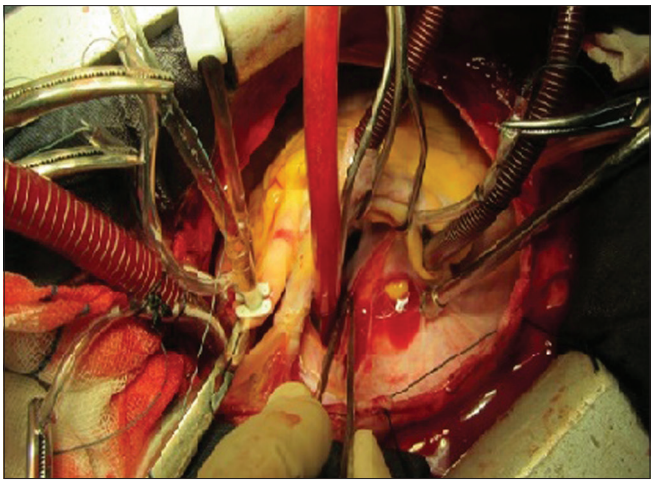

Figure 2: Intraoperative view of fibroma

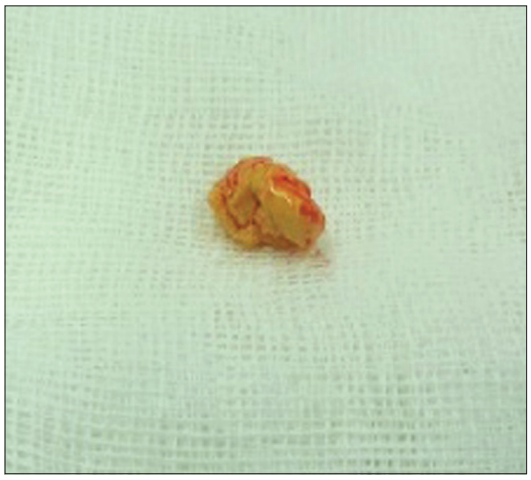

Figure 3: Gross pathology of the resected mass

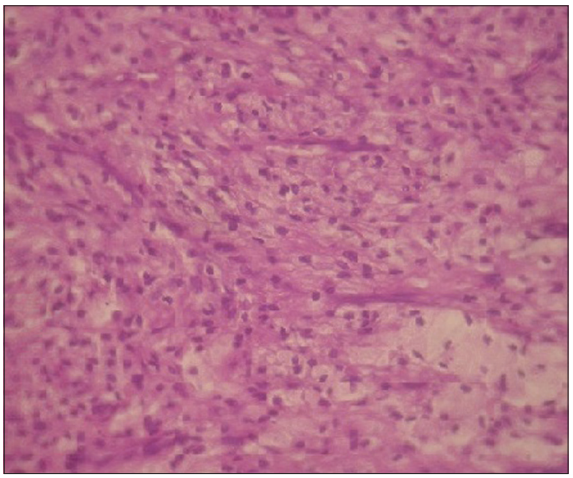

Figure 4: Fibroblast cells in fascicles with abundant collagen fiber (H and E, ×100)

postoperative recovery was uneventful, and he was discharged from hospital on the 8th postoperative day. At the 12-month follow-up evaluation, his condition was well with normal sinus rhythm and no recurrence of the tumor in TTE examination.

Discussion

Primary heart tumors are very rare, with a reported prevalence of 0.0016%–0.020%.[4] Of primary neoplasms, about 76% are benign, and 24% are malignant.[5] However, cardiac fibroma is an exceedingly rare mass in adult but ranks second among the most common primary cardiac neoplasms in children after rhabdomyoma.[6] Right atrial fibroma as a benign tumor is basically composed of fibroblasts in the interstitial myxoid tissue filled by collagen.[7] The tumor could not obtain a large size, and its clinically important and serious complications relate to conduction pathway blockage, arrhythmia, and sudden death. However, cardiac fibromas (fibromata) are commonly detected in adolescents, <17 years old, but they can occur exceptionally in adults.[8] The clinical presentation varies with a wide range of symptoms from asymptomatic cases in 33% of patients when detected incidentally to 25% of symptomatic cases when the tumor is clinically diagnosed.[9] Twenty-five percent of cases could be manifested with malignant arrhythmia and serious conduction defect consequences. Seventeen percent of remaining patients as our case usually have atypical chest pain, dyspnea, fatigue, or faint.[10] Nonetheless, it may also be demonstrated with the symptoms of valvular obstruction, and it simulates valvular obstruction. However, inflow obstruction of mitral valve is the most common because the left ventricle is the most common site of tumor emergence followed by an interatrial septum and right ventricle. In contrast to cardiac myxoma, cardiac fibroma rarely is associated with distant emboli,[11] and surgical resection in a symptomatic case could be scheduled. Agarwala *et al*. showed that 40.6% of the total fibroma cases were found in the patients <1 year of age and/or 11.3% of the whole cases occurred in the prenatal or neonatal patients. The gender tendency was toward the male sex.[12] The resection of tumor in the left ventricle as the most common location for fibroma origin may also

be associated with distortion or rupture of the papillary muscles of mitral valve or ventricular septal defect.[10,11,13,14]

Conclusion

In our case, fibroma had a unique position in cardiac chamber, i.e., near the coronary sinus valve that was not reported in the previous medical literature yet.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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