Case Report

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A giant left atrial myxoma causing left-sided heart failure

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Abstract

This report presents a case study on giant left atrial myxoma. Transthoracic echocardiography showed a giant mass in the left atrium of a 53-year-old female patient causing functional mitral stenosis. Tumor resection was performed, and the pathological diagnosis confirmed the atrial myxoma. Postoperative echocardiography showed no evidence of any remaining mass and mitral stenosis.

Keywords

Heart failure, mitral valve, myxoma, atrium

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Introduction

Myxomas are the most common type of primary cardiac tumor, accounting for 50% of those. It is estimated that more than 75% of myxomas originate in the left atrium. Atrial myxomas are associated with triad of complications, including obstruction, emboli, and constitutional symptoms (such as fever and weight loss). Intra-cardiac obstruction is observed in 75% of the patients. Pulmonary edema or progressive congestive cardiac failure (dyspnea and orthopnea) are the most common symptoms.[1,2] Herein, we present a case of giant left atrial myxoma showing dyspnea as obstruction symptom and high inflammatory findings as constitutional symptom.

Case report

A 53-year-old woman presented with a month-long history of worsening exertional dyspnea. The laboratory workup showed slightly high inflammatory response with white blood cell count of 8100/mm^3 (3300–8600/mm^3), C-reactive protein of 2.7 mg/dL (0–0.14 mg/dL), a high interleukin (IL)-6 of 16.0 pg/mL (0–4 pg/mL), and a high brain natriuretic peptide of 118.9 pg/mL (0–18.4 pg/mL). The chest X ray showed pulmonary vascular enhancement and right pleural effusion. The electrocardiogram showed heart rate of 97 bpm, right axis deviation, and complete right bundle brunch block. Transthoracic echocardiography and computed tomography showed a giant mass (6.4 × 4.8 cm) in the left atrium (Figures 1 and 2). The massive mobile echodensity occupied the entire left atrium and was attached to the interatrial septum with prolapse into the left ventricle during the diastolic phase leading to functional mitral stenosis (mean transmitral gradient of 12 mmHg).

The patient underwent resection of the cardiac tumor via transseptal approach. The tumor exhibited a peduncle adherent to the interatrial septum (Figure 3). We completely resected the tumor including its peduncle and then directly closed the defective part of the interatrial septum. The pathological diagnosis confirmed the atrial myxoma. Postoperative transthoracic echocardiography showed no evidence of remaining mass and mitral stenosis (Figure 4). Subsequently, the mean transmitral gradient decreased to 2 mmHg. Postoperative IL-6 level was relatively lower (4.9 pg/mL). The patient's recovery was uneventful and was discharged 14 days after the surgery. Six months after the surgery, the patient has shown no symptoms of recurrence. The laboratory workup was following; white blood cell count of 4960/mm^3, C-reactive protein of 0.14 mg/dL, and brain natriuretic peptide of 31.8 pg/mL. The chest

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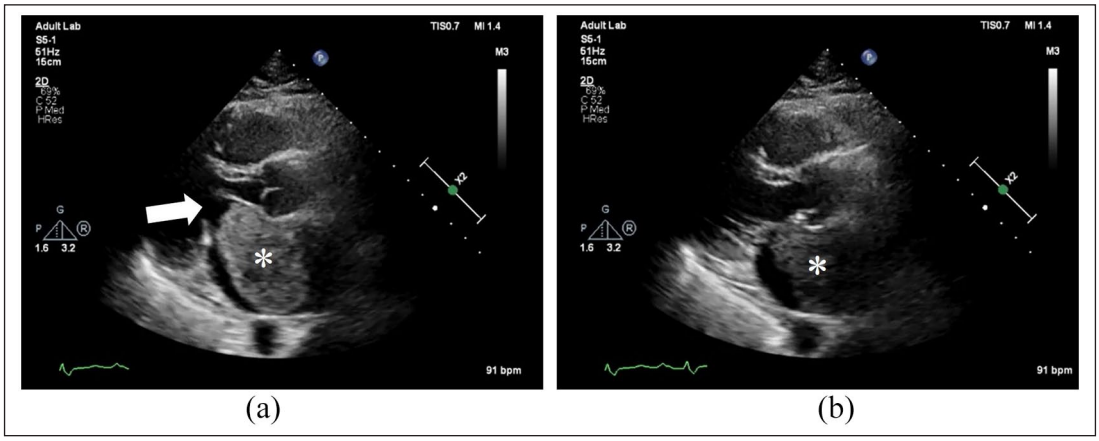

Figure 1. Preoperative transthoracic echocardiography: (a) end-diastolic frame, showing a giant 6.4 × 4.8 cm mobile mass (*) attached to the interatrial septum. The mass is prolapsing and is about to incarcerate into the left ventricle (white arrow) and (b) end-systolic frame, showing a giant mobile mass (*).

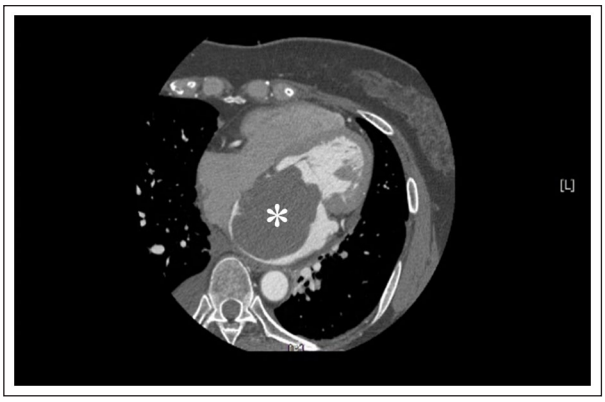

Figure 2. Preoperative cardiac contrast-enhanced computed tomography, showing a giant hypodense mass (*) filling the left atrium.

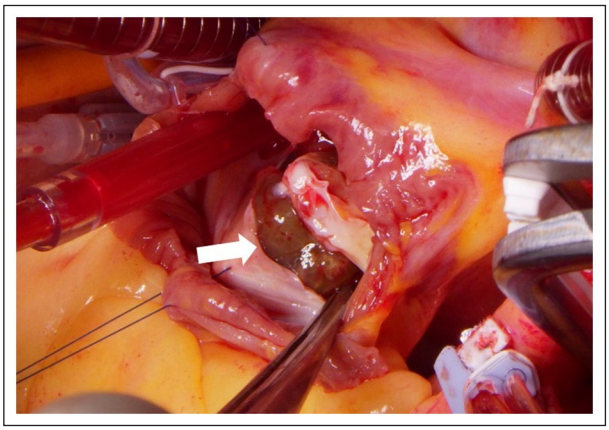

Figure 3. Intraoperative photograph showing a mass in the left atrium (white arrow).

X ray was normal. The electrocardiogram showed relatively lower heart rate of 66 bpm and complete right bundle brunch block.

Discussion

Atrial myxoma causes various symptoms. These clinical symptoms depend on the size, character, and location of the tumor.[3]

Mário et al.[4] reported a case with stroke as an embolic complication. Embolizations are particularly frequent in myxomas of the mitral valve, more than in left atrial wall myxomas, due to valve movement during the heart cycle.[5] Papillary character of the tumor may also lead to higher risk of embolism.[6]

Abdelazeem et al.[7] reported a case with severe obstructive complications due to functional mitral stenosis resulting in severe pulmonary hypertension and right-sided heart failure.

Sudden cardiac death is the most feared complication during the setting of cardiac myxomas. It may occur in 15% of the patients, caused by massive systemic, cerebral or coronary embolization or by sudden obstruction of blood flow at the mitral or tricuspid valves.[8]

Based on several studies, the 10-year survival after cardiac myxoma removal was 96.8 ± 1.8% with excellent long-term prognosis. Early mortality rate was 2% and late mortality rate was 6.1%.[9]

Therefore, to prevent these life-threatening complications, early diagnosis and urgent excision of the tumor is considered essential.[2,3,7]

This patient showed dyspnea (a symptom of left-sided heart failure) due to possible functional mitral stenosis caused by the giant atrial myxoma. Although the mass remained confined to the left atrium till the surgery, considering the tumor size and preoperative transthoracic echocardiography findings showing the tumor prolapsing into the left ventricle, the possibility of incarceration through the mitral valve was considered to be high, which could cause sudden death.

Therefore, we performed the surgery as soon as possible. She was discharged with no surgical complications.

The recurrent rates after surgical resection of atrial myxomas are only 1–3% in sporadic cases, 12% in familial cases,

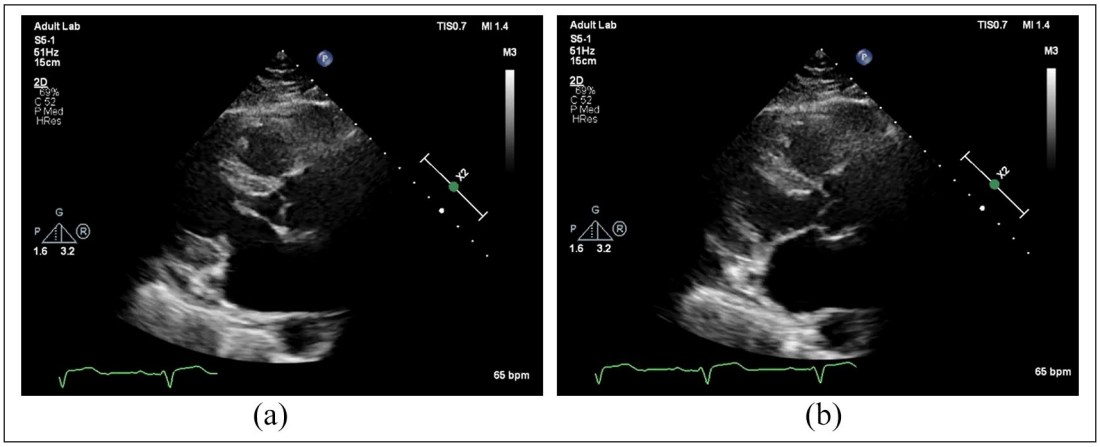

Figure 4. Postoperative transthoracic echocardiography: (a) end-diastolic frame and (b) end-systolic frame, showing no remaining mass.

and 22% in complex atrial myxomas.[2] One study proposes minimal tumor manipulation, excision with adequate margins, and careful inspection of all heart chambers are important measures to prevent recurrence of tumors.[9]

At the surgery, we carefully checked the entire right and left atrium and completely excised the tumor and its peduncle not to leave tumor and cause embolization or recurrence. Six months after the surgery, the patient has shown no symptoms of recurrence.

Conclusion

We performed a tumor resection of giant left atrial myxoma. We consider that earlier surgical resection is the best approach to treat giant myxoma, relieving the symptoms and preventing sudden death.

Declaration of conflicting interests

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Ethical approval

Our institution does not require ethical approval for reporting individual cases or case series.

Informed consent

Written informed consent was obtained from the patient for their anonymized information to be published in this article.

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