

# Giant Left Atrial Myxoma Misdiagnosed As Schizophrenia: A Case Report

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## Case report

**Keywords:** cardiac myxoma, schizophrenia, misdiagnosis

**Posted Date:** July 30th, 2020

**DOI:** <https://doi.org/10.21203/rs.3.rs-49221/v1>

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# Abstract

**Background:** Primary cardiac tumors are rare. Myxoma is the most common cardiac tumor and presents in the left atrium. Improvements tend to occur with early diagnosis, and with the help of high-resolution imaging technology, such as transesophageal echocardiography (TEE). Patients typically present with tightness of the chest, fatigue and lassitude. There are also cases of misdiagnosis and missed diagnosis.

**Case presentation:** A 59-year-old Chinese woman complained of tightness in her chest, fatigue and lassitude for eight years. She had been misdiagnosed with schizophrenia by the local rural hospital. Computed tomography (CT) confirmed a giant mass in the left atrium, and transthoracic echocardiography (TTE) revealed left atrial enlargement with an occupying lesion. For this patient, we performed tumor resection surgery with a cardiopulmonary bypass. The giant tumor was partially detached during the operation, and the thrombus was removed successfully. After the operation, the mental health department of our hospital thought that the patient's diagnosis of schizophrenia was misdiagnosed. The patient recovered well and appeared rejuvenated after the operation. A two-year follow-up found no adverse events since the operation.

**Conclusions:** When making a diagnosis for a patient who presented with tightness of the chest, we need to administer a cardiac physical examination and echocardiography. The physician diagnosing schizophrenia needs to first rule out any organic diseases. A careful and complete resection of the cardiac myxoma is a vital operation, due to the risk of thromboembolism.

## Background

Primary cardiac tumors are rare; the incidence of them occurring range from 0.0017 to 0.28%, (figure based on autopsies). Myxoma is the most common cardiac tumor and can typically be diagnosed using echocardiography. However, certain myxomas have rare features that are likely to lead to misdiagnosis [1]. Approximately 95% of cardiac myxomas occur in individuals of a wide age range. However, they occur more frequently among women in the fifth or sixth decade of life [2]. We reported a 59-year-old Chinese woman with a giant left atrial myxoma misdiagnosed as schizophrenia for eight years, an incident that is quite rare.

## Case Presentation

A 59-year-old Chinese woman complained of tightness in her chest, fatigue and lassitude for eight years. The doctors in the local rural hospital did not administer a transthoracic echocardiography (TTE) to evaluate her cardiac function. They simply diagnosed her with schizophrenia, since there was no organic damage that they identified. The patient had applied for a schizophrenia certificate and used olanzapine for treatment. In recent years, the symptoms had worsened and the patient's husband took her to our hospital.

Electrocardiograph showed nothing remarkable despite a ventricular premature beat. An X-ray did reveal an increase in the chest-heart ratio (Fig. 1A). After suspecting it to be cardiogenic disease and not schizophrenia, TTE and computed tomography (CT) examinations were performed. The CT confirmed a giant mass in the left atrium (Fig. 1B, yellow arrow), while the TTE revealed a left atrial enlargement with an occupying lesion (4.87cm × 7.13 cm) (Fig. 1C, blue arrow).

Tumor resection was performed via a median sternotomy with cardiopulmonary bypass. During the surgery, a gelatinous and fragile mass that filled the entire left atrium and growing from the interatrial septum was noted (with a 4.5 cm pedicle) (Fig. 1D, white arrow). The 10 × 7 × 3 cm mass and pedicle were successfully removed (Fig. 1E, yellow arrow). An atrial septal defect repair was completed after that. When the “Y” tube was pulled off during the surgery, blood pressure in the left radial artery suddenly dropped off, while the right radial artery and cardiac function remained normal. Since we suspected that some myxoma fragments may have fallen off, we immediately consulted with the vascular surgery department and found a tumor thrombus at the far end of the left radial artery. Embolectomy was successfully performed and two small tumor emboli were successfully removed from the left radial artery (Fig. 1E, blue arrows).

A pathological examination confirmed the final diagnosis of primary cardiac myxoma from the interatrial septum (Fig. 1F) (hematoxylin and eosin stain, × 400 magnification). The patient recovered well and appeared rejuvenated after the operation. A two-year follow-up found no adverse events since the operation. After the operation, the mental health department of our hospital thought that the patient's diagnosis of schizophrenia was misdiagnosed.

## Discussion

The World Health Organization defines a cardiac myxoma as a neoplasm. The gross specimen of myxomas are polyp-like, villous, or jelly-like with a smooth surface. There are plenty of stellate cells among mucoid stroms. Seventy-Five percent of myxomas occur in the left atrium, 18% in the right atrium with 3% in each of the right and left ventricles and 1% in the valve [3].

Clinical manifestations of cardiac myxomas are daedal. They can be asymptomatic in tumor size for cases of < 4 cm and result in unexpected sudden death (generally caused by blood-flow obstruction or embolization) [4]. The myxoma clinically presents with intracardiac obstruction with congestive heart failure (67%), signs of embolization (29%), fever (19%), weight loss or fatigue (17%), and immunologic manifestations of myalgia, weakness, and arthralgia (5%), with almost all patients presenting with one or more of these symptoms [5]. Our patient had typical symptoms of congestive heart failure and perioperative embolization.

The diagnosis of cardiac myxoma requires TTE (or TEE) and CT before surgery. There can often be a misdiagnosis of the condition due to poor image quality or atypical myxoma. It has been confused with a thrombus and myocardial infarction [6]. Cardiac myxoma is the most common benign cardiac tumor, but many cardiac malignant tumors have been misdiagnosed as cardiac myxoma, resulting in delayed

treatment. Without the help of TTE or TEE, myxomas can easily be misdiagnosed as other systemic diseases. But as far we know, a misdiagnosis of schizophrenia is rare. The misdiagnosis of the patient in this case was largely attributed to local doctors not having given her a timely cardiac examination, including auscultation and echocardiography. When patients complain of tightness in the chest, we must not forget the importance of the cardiac physical examination and TTE (or TEE).

Systemic embolization is the second-most common mode of presentation for patients with myxoma. It occurs in 30%-40% of patients. Because the majority of myxomas are left-sided, approximately 50% of embolic episodes affect the central nervous system owing to both intracranial and extracranial vascular obstruction. We reported a case of arterial embolism in the upper-left extremity. Fortunately, the radial artery blood pressure was measured in the left upper limb. Problems were found in time during the operation and the embolus was successfully removed.

Tumor resection via median sternotomy is a common method for treating myxoma. For myxoma with a villous surface, it is necessary to completely resect the tumor and prevent thromboembolism caused by the tumor.

## Conclusions

This case was of a rare giant cardiac myxoma misdiagnosed as schizophrenia. When diagnosing patients with tightness in the chest, we cannot forget the importance of the physical cardiac examination and echocardiography. Any diagnosis of schizophrenia needs to first rule out any organic diseases. Careful and complete resection of the cardiac myxoma is necessary, as it may cause thromboembolism.

## Abbreviations

TEE

transesophageal echocardiography; TTE: transthoracic echocardiography; CT: computed tomography

## Declarations

**Acknowledgments:** Not applicable.

## Authors' contributions

XHF AND SW wrote the draft of the manuscript. ZYR revised the article. XHF, NYM, and LWD performed the surgery and contributed to the perioperative care. All authors read and approved the final manuscript.

## Funding

The authors declare that they received no financial support pertaining to this case report.

## Availability of data and materials

The authors declare that all data in this article are available within this published article.

### **Ethics approval and consent to participate**

Informed consent was obtained from the patient.

### **Consent for publication**

Written informed consent for publication of this case report was obtained from the patient.

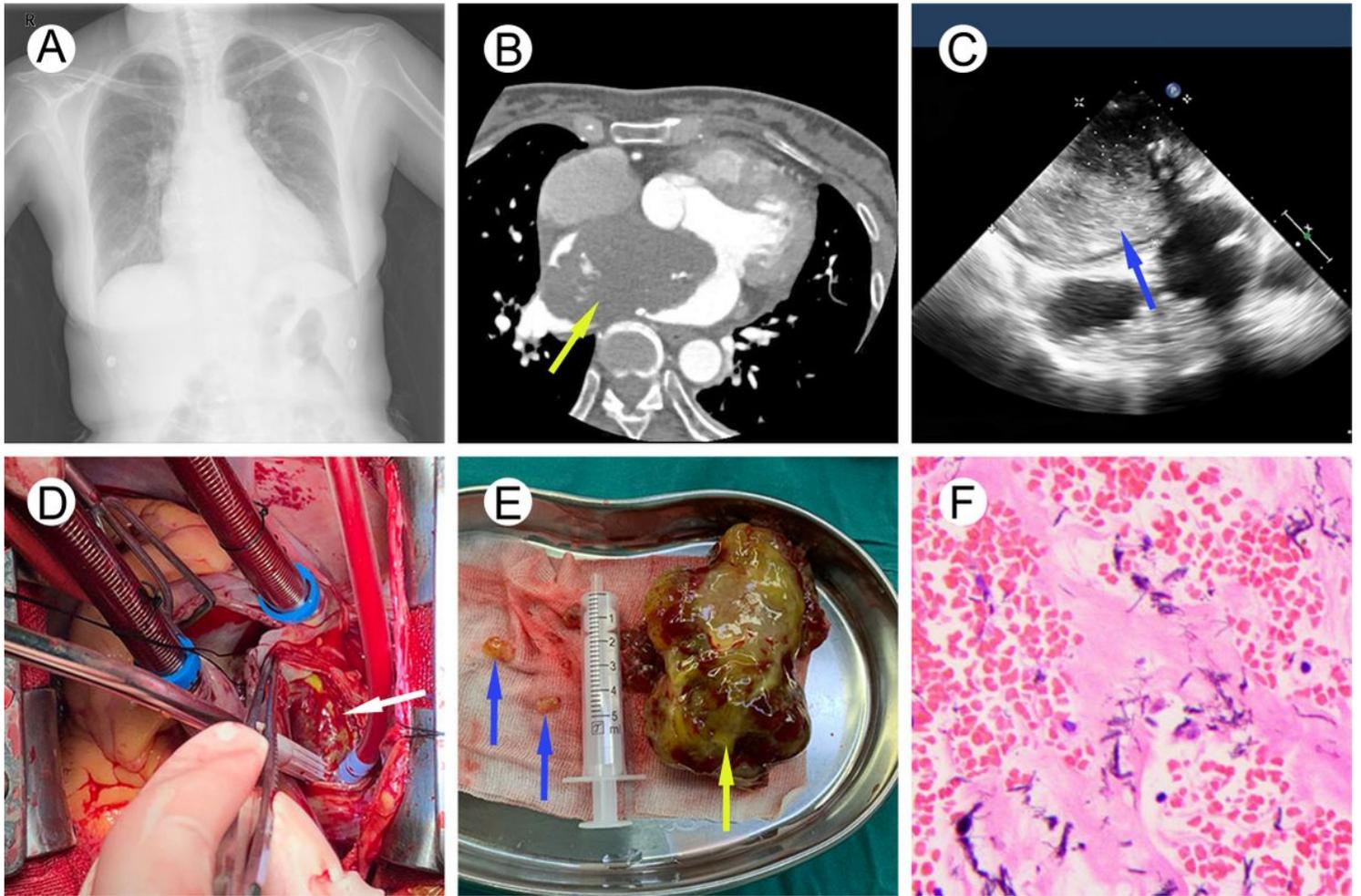
### **Competing interests**

The authors declare that they have no competing interests.

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## **Figures**



**Figure 1**

Giant left atrial myxoma misdiagnosed as schizophrenia A: Chest X-ray shows moderate enlargement of the heart (heart/chest ratio > 0.5) B: Computed tomography confirms a giant mass in the left atrium (yellow arrow) C: Transthoracic echocardiography reveals left atrial enlargement with an occupying lesion (4.87×7.13 cm) (blue arrow). D: A jelly-like mass in left atrium during the operation (white arrow) E: Giant jelly-like myxoma (10×7×3 cm) with a 4.5 cm pedicle (yellow arrow) and two small tumor emboli removed from the left radial artery (blue arrows). F: Pathological section of the left atrial myxoma (hematoxylin and eosin stain, ×400 magnification).