

# Incidentally Detected Asymptomatic Cardiac Myxoma in a Patient With COVID-19

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**ABSTRACT:** Primary cardiac tumors, such as myxomas, are rare. About 75% of myxomas occur in the left atrium of the heart. Myxomas can have a broad clinical spectrum. The clinical presentation varies from asymptomatic to sudden cardiac death. Sometimes, a diagnosis is difficult. Cardiac myxoma can cause hemodynamic disturbances in the setting of pneumonia and hypercoagulable state in patients with Coronavirus disease 2019 (COVID-19) and make treatment decisions difficult. We present a case of unusually huge left atrial mass discovered incidentally in a patient with COVID-19. Upon workup, an echocardiogram revealed an incidental 7 × 5 cm left atrial myxoma. Preoperatively, the patient was monitored closely in the ICU. After stabilization in the ICU, the patient was taken to surgery and the tumor was successfully removed. Pathohistological results after surgical removal of the tumor confirmed the diagnosis of cardiac myxoma. We consider our case extremely rare due to the asymptomatic course despite the large size of the tumor.

**KEYWORDS:** Coronavirus, myxoma, atrial function left, asymptomatic diseases

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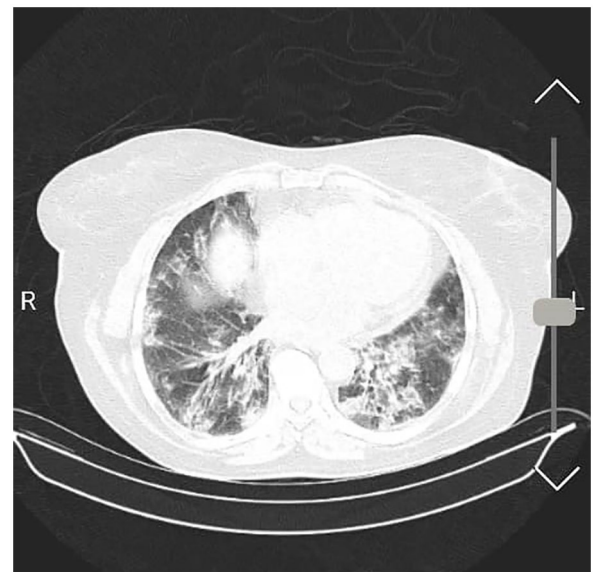
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## Introduction

Primary cardiac tumors are very rare with an incidence between 0.0017% and 0.19%.<sup>1</sup> The symptoms of atrial myxoma are related to location, size, and mobility. Although echocardiography plays an important role in detecting this tumor, identifying its nature is difficult. A well-formed and organized thrombus is a common differential diagnosis. One of the challenges faced by physicians is to deal with undifferentiated myxoma and thrombus. The treatment of choice for myxomas is surgical resection. We present a case of asymptomatic left atrial myxoma in a 64-year-old female patient which was an incidental finding that was admitted due to COVID-19. Surgical resection is advised to reduce embolic events, stroke, mitral valve obstruction, and sudden death.

## Case Report

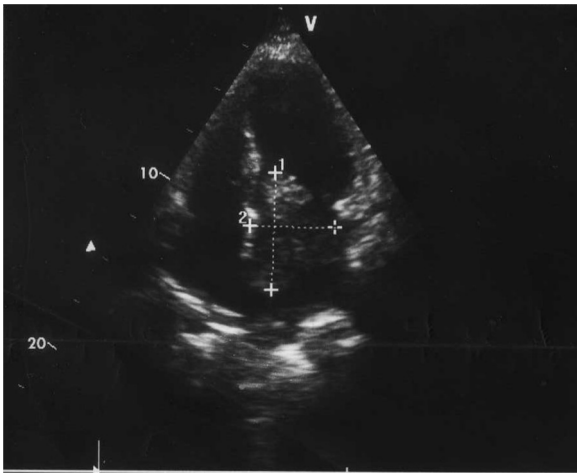
A 64-year-old woman came to the emergency department with 2 days of high fever, dyspnea, and nonproductive cough. Her medical history included type II diabetes mellitus. On physical examination, the patient was breathless at rest, had tachycardia at 116 bpm, oxygen saturation was 88% in room air. Blood pressure was 100/60 mm Hg. Her temperature was 38.9°C. Chest examination revealed an early diastolic murmur, best heard in the fifth intercostal space. Her lung fields revealed a decrease in breathing sound at the base of the lungs. The abdomen examination was unremarkable. Chest computed tomography (CT) showed moderate bilateral pleural effusion and bilateral multilobar lung consolidation with ground-glass opacities suggestive of COVID-19 (Figure 1). Nasopharyngeal swabs were taken and positive for COVID-19 by real-time



**Figure 1.** Chest CT showed bilateral lung consolidation with ground-glass opacities suggestive of COVID-19.

reverse transcription-polymerase chain reaction (rRT-PCR) assay. The patient was transferred to the intensive care unit (ICU) and medically treated for COVID-19. Transthoracic echocardiography revealed a highly mobile 70 × 50 mm mass in the left atrium, with a typical feature of myxoma (Figure 2). The mass was projected forward into the left ventricle through the mitral valve during diastole, mimicking severe mitral stenosis. Systolic function was normal, with an ejection fraction of 55%. Transesophageal echocardiography was considered but



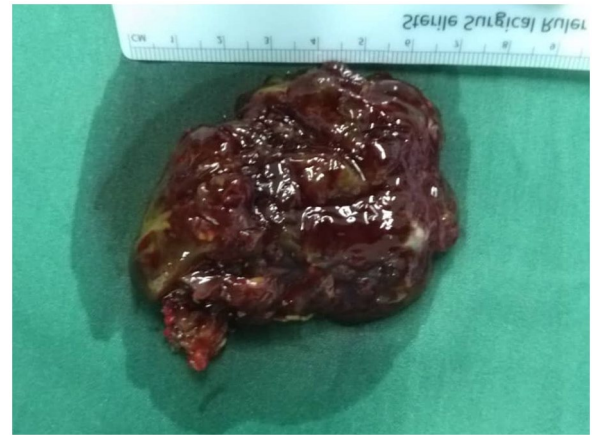


**Figure 2.** Transthoracic echocardiogram showed left atrial mass.



**Figure 3.** Chest CT scan with intravenous contrast showed left atrium mass.

not performed due to the high risk of transmission of COVID-19 associated with the procedure. Due to the advanced age of the patient coronary angiography was built and there was no significant coronary artery disease. During the evaluation, an 8 × 5 cm tumor was identified in the left atrium by CT (Figure 3). Surgical operation was delayed until the patient's COVID-19 infection resolved with a negative PCR test for COVID-19 due to the concern for respiratory decompensation during surgery and the high rate of mortality in the setting of active COVID-19 infection. Anticoagulation with Heparin has continued until surgery to prevent superimposed thrombus and embolization given the propensity for thrombus formation in patients with active COVID-19 infection. Three weeks later, after recovering completely from infection, she successfully underwent tumor resection (Figure 4). A median sternotomy was performed. Standard Cardiopulmonary bypass was established using ascending aorta and bicaval cannulas with moderate hypothermia. The tumor was excised through a left atrial approach. The patient was weaned from CPB easily. The postoperative period was uneventful and the patient was discharged on the 7 postoperative days. Histopathological examination of the excised mass was compatible with myxoma.



**Figure 4.** The soft mass was harvested from the left atrium.

## Discussion

Myxomas are the most common primary cardiac tumors. They can originate in any cardiac chamber. Left atrial myxomas are more common than right atrial myxomas and approximately 85% of them are located in the left atrium.<sup>2</sup> Myxomas are more common among women and generally appear between the third and sixth decade of life.<sup>3</sup> Many myxomas will not cause symptoms. These are often discovered when an imaging study is done for another reason. Clinical manifestations include dyspnea, chest pain, palpitation, syncope, rhythm disturbances, embolization, heart failure, myocardial infarction, and even sudden death. Patients may also have constitutional symptoms. Include malaise, anorexia, fever, arthralgia, and weight loss. In an asymptomatic patient, it is more difficult to reach a diagnosis. Our patient was asymptomatic, which can usually be found in about 20% of myxoma. The detection of left atrial mass was an incidental finding. The size of the myxoma with a diameter of less than 5 cm is usually seen in asymptomatic patients, but in our patient, the mass size was greater than 5 cm.<sup>4</sup> The most common modality used for the diagnosis of cardiac tumors, particularly cardiac myxomas, is an echocardiogram. It has high sensitivity and specificity for diagnosis.<sup>5</sup> Echocardiography plays an essential role in detecting these masses, but it is difficult to identify their nature. Transesophageal echocardiography provides very useful information and is superior to transthoracic echocardiography in fully demonstrating the relationship between the tumor and the cavity wall. This imaging modality reveals smaller tumors. The differential diagnosis of intracardiac masses consists of cardiac tumors, vegetation, and thrombus. Myxomas should be managed with surgical resection due to the risk of tumor embolization and other complications. Recurrence after surgical resection is rare.<sup>6</sup> Cardiac myxomas have a low surgical mortality rate and a good prognosis. Minimal tumor manipulation and adequate exposure for complete tumor excision are essential to prevent a recurrence. Regular follow-up with echocardiography is mandatory after surgical excision for early detection of tumor recurrence and postoperative complications. Our patient demonstrates some

interesting features. First, the asymptomatic giant left atrial myxomas are very rare. When the tumor is located close to the mitral valve, it results in obstruction and presents symptoms of left heart failure symptoms and pulmonary congestion. Despite being so large, there were no obvious associated symptoms in our case. Secondly, the mass diagnosis incidentally during the underlying COVID-19 disease. Multidisciplinary teams consisting of, cardiologist, cardiac surgeon, radiologist, and pulmonologist are essential in reaching the best time for surgery. Third, differentiating between myxoma and other cardiac masses such as mural thrombus is still a challenge, especially in COVID-19 patients. This can only be confirmed by histopathological examination. Due to the high predisposition for a hypercoagulable state with COVID-19 infection, anticoagulation must be started. Finally, physiological changes in COVID-19 infections, such as tachycardia and hypotension, can cause hemodynamic changes in the heart and cause the tumor to develop obstructive physiology.

### Conclusions

Cardiac myxomas are uncommon tumors. In our case, the patient was asymptomatic. In patients with COVID-19 who develop hemodynamic instability, surgical intervention should

be performed as soon as possible. This case highlights the importance of the timing of the surgery.


### Author Contributions

All authors reviewed and approved the final manuscript.

### Informed Consent

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

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