

How to Cite:

Moghadam, M. Y., Namdar, R. B., Zadeh, H. M., Rahimi, Z., & Ghodsi, M. (2022). A case report of a heart mass. *International Journal of Health Sciences*, 6(S5), 6698–6702.
<https://doi.org/10.53730/ijhs.v6nS5.10321>

A case report of a heart mass

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Abstract---Introduction: Certain cardiac tumors are asymptomatic and are detected by chance after autopsy. The clinical signs and symptoms of cardiac tumors vary greatly and are determined mainly by the tumor's location and size rather than its histology. Cardiac masses have a broad differential diagnosis, and it is critical to differentiate between neoplastic and non-neoplastic cardiac masses and benign and malignant neoplasms. Surgery is advised in situations of heart failure symptoms, treatment-resistant ventricular arrhythmias, or blockage of the heart's inlet or outlet pathways. Presentation: In this research, a 60-year-old man presented to the hospital with complaints of shortness of breath, and after an echocardiogram and CT scan, he was diagnosed with a right atrial tumor, which required surgery. Conclusion: The patient was sent to the oncology unit for additional treatment after surgery, excision of the mass, and analysis of the pathology sample.

Keywords---Tumor, Heart, Surgery.

Introduction

Benign and malignant cardiac tumors, myxoma, and various non-neoplastic lesions are among the clinical differential diagnoses for intracardiac masses (1,2, 3, 4). Circulatory tumors are a highly unusual complication of the cardiovascular system. They are often metastatic tumors caused by neoplasms in other organs (2). The incidence of cardiac tumors is between 0.002-0.03% at all ages based on autopsy (3). According to autopsy studies, the total incidence of primary cardiac neoplasms is around 2 in 10,000, with the majority of them having malignant histological characteristics (4). There is presently no non-invasive or clinical imaging approach for diagnosing this tumor. Histopathological examination is the only procedure helpful in determining the kind of tumor (5).

Metastatic cardiac lesions are more common than primary heart tumors, with roughly 1.9% of cancer patients. Naturally, it's important to remember that cardiac tumors are often asymptomatic, with only vague symptoms in the early stages. These masses were only found after they had grown to a large size before the invention of contemporary imaging techniques. However, in most anatomical lesions of the heart, echocardiography is one of the most acceptable diagnostic modalities (6).

Surgery is the sole therapeutic option for cardiac tumors that necessitate intervention. Before surgery, cardiac tumors should be thoroughly evaluated, including the number, location, extent, and size of the tumor and the patient's hemodynamic state. The ultimate objective is to remove as much of the tumor as feasible. Surgery is suggested in situations of heart failure symptoms, treatment-resistant ventricular arrhythmias, or blocking of the heart's entry or exit. Most cardiac tumors are not operated on if the patient is asymptomatic, and diagnostic procedures such as echocardiography and ECG are used to keep track of the patient (3).

Patient introduction

The patient, a 60-year-old male with shortness of breath, had been in the hospital for nearly two weeks and had no previous medical history. For the patient, echocardiography was conducted. EF: 55% was seen, and HRCT revealed a hypodense mass of 54x58 mm in the right atrium, with enlargement to the right ventricle, which had been dilated with a pike into the posterior wall of the right atrium. (See Figs. 1). The patient's ECG revealed mild bilateral pericardial effusion, pleural effusion, and an ST depress in half to one box from V2 to V5. The patient had sufficient diuresis and complained of sleeplessness and a lack of appetite. The patient was put on a heparin drip and got CBR. The patient was subsequently angiographically assessed to establish the existence of a mass in the right ventricle and right atrium, and due to proximal blockage of the coronary artery LAD to the midline, the patient was rushed to the cardiac operating room unit for heart surgery. Because of the tumor's large size, it was cannulated via the femur and attached to the CPB device instead of the atrium, resulting in cardiac arrest. Blood flow was established from the intrathoracic artery (LIMA) to the LAD after the tumor, and a portion of the atrial wall was entirely removed. After achieving homeostasis, the patient was taken off the CPB and sent to the ICU for

heart surgery. He was gradually discharged from the ward and moved to the oncology unit to continue treatment following anesthesia, full consciousness, and tolerating RBR and diet.



Fig 1: Tumor image isolated from the patient's right atrium and Echocardiography of the patient before surgery

Discussion

Cardiac tumors are very uncommon neoplasms that occur in 0.02% of the population, with only 25% of them being malignant (7). Heart masses have three clinical manifestations: direct cardiac effects, systemic consequences, and embolic events.

The location and extent of the tumor are the most crucial factors in cardiac manifestations. Pericardial effusion, tamponade, blockage, or heart valve failure indicators such as heart failure, syncope, abrupt chest pain, death, symptoms of cardiomyopathy, and a range of arrhythmias are all examples of cardiac manifestations. Individuals with cardiac tumors often have systemic nonspecific symptoms such as fever, general weakness, weight loss, and anorexia. Hematologic abnormalities such as leukocytosis, anemia or polycythemia, thrombosis or thrombocytopenia, and an elevated ESR are common abnormal laboratory results (3).

More than two-thirds of initial cancers are cardiac sarcomas. Cardiovascular sarcomas are more common in people in their 40s than extracellular soft tissue sarcomas, and they have a worse prognosis, with a 5-year survival rate of just 14%. Angiosarcoma, leiomyosarcoma, liposarcoma, rhabdomyosarcoma, synovial sarcoma, myxofibrosarcoma, and pleomorphic sarcoma are histopathologic

subgroups of primary cardiac sarcomas that are indistinguishable. The most prevalent separate sarcomas are angiosarcoma and leiomyosarcoma (8, 9).

Echocardiography, which gives great anatomical and functional information, is the diagnostic method used in the first examination of cardiac malignancies. On the other hand, magnetic resonance imaging is the most sensitive and, in the future, may be used as a supplement to echocardiography as the primary diagnostic method (10). Computed tomography (CT) of the heart to examine cardiac masses is becoming more common, particularly when other non-diagnostic imaging methods are prohibited. CT is superior to other cardiac imaging techniques for evaluating calcified masses, general evaluation of chest and lung tissue and associated vascular structures, removal of coronary artery disease or masses adjacent to or obstructing coronary arteries that block coronary arteries, and surgical planning. Because of its capacity to identify metastases in suspected malignancies, CT of the heart is valuable in tumor staging (11).

In most circumstances, heart surgery is the best option. Chemotherapy and radiation are two other therapies (12). All patients with cardiac tumors have a survival rate of 80-90% following surgery, depending on criteria such as the kind of tumor, surgical success, and the survival of cardiac structures after surgery. Surgery is not feasible in specific individuals owing to the tumor's location and level of cardiac involvement. Heart transplants may be necessary for certain situations (3).

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