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CASE REPORT

Unusual Localized Non-Hodkin Lymphoma: Left Ventricular Giant Mass in a Patient Admitted with Syncope

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SUMMARY

Cardiac involvement with non-Hodgkin lymphoma (NHL) is rare. Depending on the cavity involved, presenting symptoms may include shortness of breath, arrhythmia, syncope, heart failure, and pericardial effusion. However, the definitive diagnosis is dependent on patholog. The prognosis of non-Hodgkin lymphoma is poor due to late diagnosis and limited treatment options. Herein, we present the case of a seventy-year-old female patient who was admitted to the Emergency Department with no complaints of cardiac discomfort and no cardiac history but was diagnosed with Diffuse Large B cell lymphoma using transthoracic echocardiography.

Keywords: Cardiac masses; echocardiography; lymphoma; left ventricle; syncope.

Introduction

Primary cardiac lymphomas are very rare; they usually occur in people with immune deficiency,[1] and represent only 0.5% of all lymphomas and 1-2% of all heart tumors. Cardiac involvement from systemic lymphomas are more common and includes 8-28% of all lymphomas.[2] Lymphomas with cardiac involvement are non-Hodgkin lymphomas (NHL). These are the most common concerning pericardial involvement and hold the myocardium in the second row, which can mostly be seen in the right atrium and ventricle. Heart metastases can be seen through next to, such as lung and mediastinum, as well as by lymphatic and hematogenous means.[3] Cardiac masses may cause varying symptoms depending on the location of the involvement. A myxoma, common benign tumor of the heart, may present obstructive or embolic symptoms, tumors that cause pericardial metastasis or symptoms related to effusion or constriction. Especially tumors that are monitored in the left ventricular cavity of the heart may cause both systemic embolism and syncope by performing mechanical obstruction.[4,5]

Case Report

A 70-year-old female patient with no known cardiac history was brought to the Emergency Department with a sudden developing syncope that lasted without prodromal symptoms and lasted for about five minutes. After the first evaluation in the emergency room, where then we were consulted.

On examination of the patient, consciousness was observed, vital signs were stable and oxygen-free saturation was found to be 90%. Respiratory sounds were reduced in the lower right lobes of the lung, and crepitant rales were heard. ECG was observed in normal sinus rhythm. Neurological examination was evaluated naturally. The patient's Pro-BNP level was 1300 ng/l blood count Hb 11.2 g/dl, white blood cell count 8360/mm^3, platelet count 410000/mm^3.

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Upon further workup, a transthoracic echocardiogram (TTE) showed a large mass and a homogeneous mass filling the majority of the left ventricular cavity and extending towards the left ventricular outflow tract, additionally, it was observed that the mass occasionally led to a gradient increase in the left ventricular outflow (Fig. 1) (Video 1). In the thorax and abdominal tomography of the patient, a possible thrombus of 5.5x3.5 cm was detected in the left ventricular lumen and the ventricular opening significantly reduced on the defined ground (Fig. 2), There were a large number of lymph nodes in the pathological view, the largest in the mediastinum: the largest being found in the mediastinum, pretracheal (2.5x2 cm), and the left hilus (2.5x2 cm). The right lung's lower lobe was atelectatic and was showing pleural effusion. Pathological lymph nodes of the right parailiac and right inguinal enlargement 3x2.5cm attracted attention.

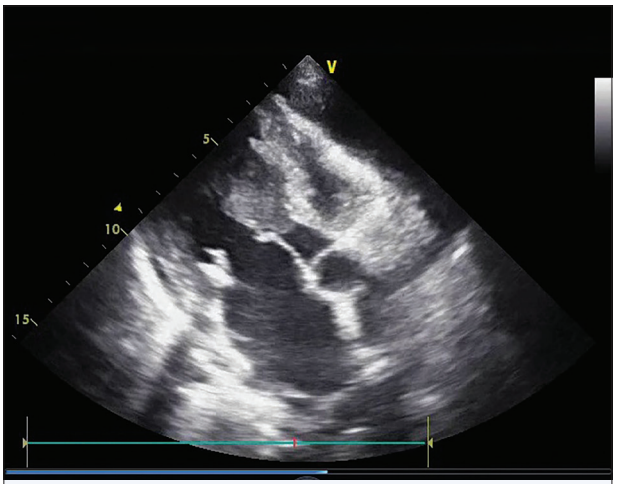

Fig. 1. Transthoracic echocardiography view of the mass obstructing the left ventricular outflow trac.

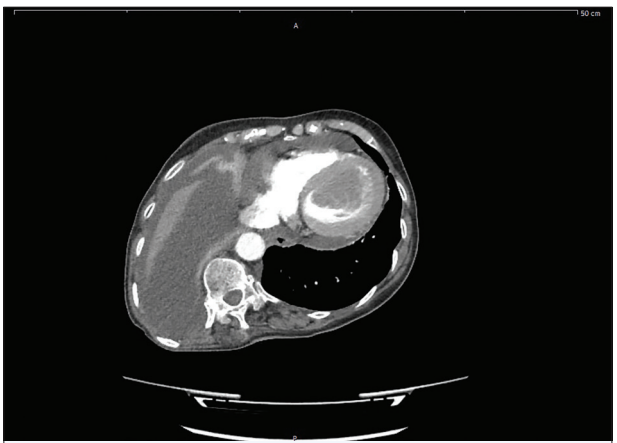

Fig. 2. Computed tomography (CT) scan of thorax showing mass in the left ventricular cavity

This was found with the MRI, the patient had a mass that could be comparable with the meningioma or metastatic mass in the gray ore, where the posterior parietooccipital extracially located (19x14 mm) dimensions were observed with a clear homogeneous contrast enhancement after the IVCM, and a pointus smooth and sharp limited dural tail mark (Fig. 3). She had no symptoms that could be associated with the mass. It was learned that the left submandibular lymph node biopsy was taken recently, but a diagnosis could not be made.

It was learned that the patient had no recent excessive weight loss and complaints of fever; however, that due to the position of the body, there was increased shortness of breath at night. Upon the patient's haemodynamics deterioration, she was referred to Cardiovascular Surgery to take an intracardiac mass. In the operation room, a sternotomy and right atriotomy septostomy were performed, the mitral valve was removed, and the mass that filled the inside of the left ventricle was completely resected, after this, the thrombotic and fragile-visible mass was resected and the septostomy was closed until the mass was completely cleaned. The pump was extracted without any difficulties (Fig. 4).

The pathology result of the removed material was interpreted as Non-Hodgkin Lymphoma, Diffuse Large B Cell Non-germinal Central Type. Treatment of the patient started with chemotherapy and it was observed that the symptoms of dyspnea of the left ventricle were preserved and hemodynamically returned to normal. The patient's consent was obtained for this case study.

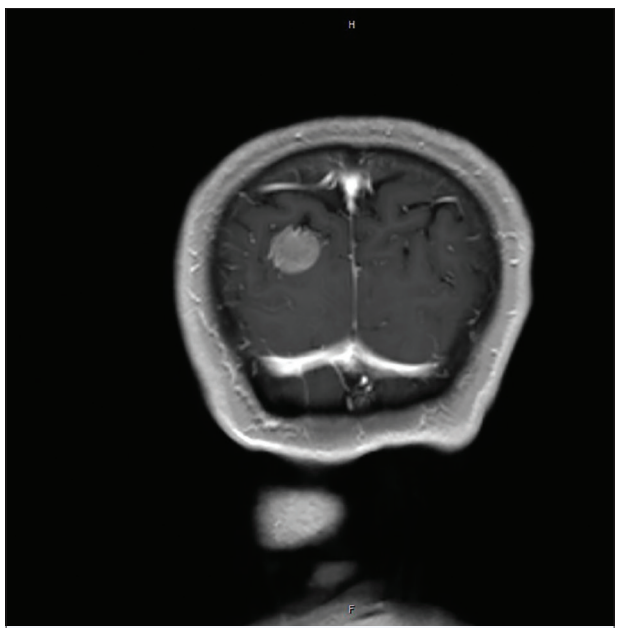

Fig. 3. Magnetic resonance imaging (MRI) scano f the brainshows a parietooccipital mass.

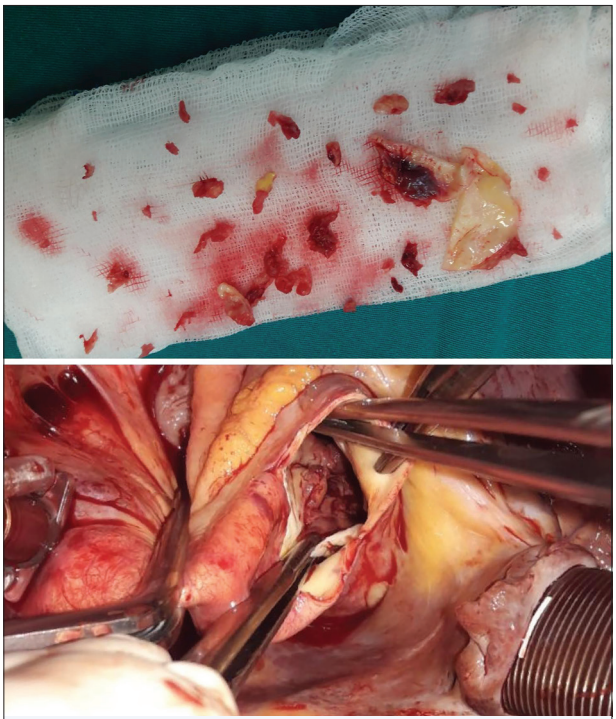

Fig. 4. Intraoperative view of the mass in the left ventricle

Discussion

Cardiac tumors are extremely rare, detected in general autopsy series at a rate of 1% to 2%. [5] Primary tumors of the heart are usually detected by chance, and three-quarters of them are benign.

It is the location of an intracardiac or extracardiac mass, which is usually the best indicator of tumor type; it plays a secondary role in defining the morphological features of the mass.[3] Secondary cardiac tumors are less common than primary tumors; however, any malignant tumor can metastasize to the heart. While lung cancer, esophageal cancer and lymphoma are mostly seen in men, metastases of lung cancer, lymphoma and breast cancer are more frequently observed in women. [6] The most common involvement is the pericardium, then it is the frequent myocardial involvement, most often the right cavities of the heart.[7]

Cardiac involvement with non-Hodgkin lymphoma (NHL) is not uncommon, but cardiac involvement as the first-line presentation of malignant lymphoma is a rare condition. Secondary cardiac involvement was found in 10-20% of patients with advanced disease, especially at autopsy.[8]

Cardiac involvement of lymphoma can be with the mediastinal neighborhood or with lymphatic spread. In our case, the lymphatic or hematogenous spread was considered since the epicardial spread was not observed. Since cardiac lymphomas show variable radiological features, an integrated imaging approach is mandatory. With multimodal imaging techniques, such as computed tomography (CT), magnetic resonance imaging (MRI), and positron emission tomography (PET), the detection and size of tumors have been made easier. Echocardiography is a sensitive, inexpensive and easily accessible method for the detection of lymphoma. It is more practical to use echocardiography in the application and follow-up for the detection and follow-up of cardiotoxicity, cardiac involvement, pericardial effusion caused by treatment in patients with non-hodkin lymphoma.[9] Functional evaluation of the heart can be carried out with the cardiac MRI, which has been used in recent years. This method reveals the effects of both the extracardiac spread of the tumor and the intracardiac mass on cardiac functions. However, its use is limited due to the need for evaluation by the experienced center and being expensive. In addition to the anatomical images obtained with PET, CT and MRI, it also contributes detail about metabolic activity, providing valuable information in staging tumors and differentiating malignant and benign. According to retrospective studies, NHL patients with cardiac involvement had a better prognosis than patients with B cells, and the prognosis was worse in patients presenting with heart failure, the most common symptom in cardiac involvement.[10] In the treatment of lymphoma, complete remission can be seen with polycemotherapies, especially rituximab. Radiotherapy, on the other hand, was observed to increase survival when administered with CHOP chemotherapy to areas affected by aggressive lymphomas.[11]

In this case, it was observed in the left ventricular cavity, a rare location of lymphoma, and the first symptom was syncope. In the patient with a mass in the brain and multiple lymph nodes that could not be diagnosed with biopsies taken before, the diagnosis of NHL was achieved by transthoracic echocardiography.

Conclusion

Transthoracic echocardiography should be applied to diagnose structural heart diseases that that may be the cause of syncope in patients who are referred because as it is affordable, accessible and fast in the detection and follow-up of cardiac masses.

Informed consent: A written informed consent was provided by the patient.

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