

## Lobular Breast Carcinoma Metastasis to the Myocardium: Case Report



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**ABSTRACT:** The invasive lobular carcinomas are the second type of cancer Invasive breast cancer after invasive ductal and account for over 20% of invasive breast cancer. Metastasis from primary cancer to the myocardium is uncommon in lobular breast cancer. Here we present a case of lobular breast carcinoma that metastasized to the myocardium.

**KEYWORDS:** Cardiac metastasis, Lobular Breast Carcinoma, Echocardiography, PET CT

### INTRODUCTION

Approximately 80% of invasive breast cancers are typically classified into invasive ductal carcinoma, the remaining 20% are invasive lobular carcinoma. The metastatic patterns of invasive lobular carcinoma and invasive ductal carcinoma are different [1]. In invasive lobular carcinoma, metastases are found more frequently in the bone and/or other sites such as the central nervous system, body cavities, and visceral organs [2], and the frequency of metastasis is higher in invasive lobular carcinoma than in invasive ductal carcinoma [2, 3].

Although the heart is a relatively uncommon site for metastatic disease. Myocardia metastases from breast cancer, particularly invasive lobular carcinoma, are rare. No case of invasive lobular carcinoma with metastasis in myocardium has been reported in the literature. The most case of cardiac metastasis are report with invasive ductal carcinoma.

Here we report a case of a metastatic lesion in the myocardium from invasive lobular carcinoma in a 54 years old woman along with a short review of the literature.

### CASE REPORT

A 54-year-old woman was admitted to Cheikh Khalifa Hospital for cardiac evaluation of invasive metastatic lobular carcinoma of the skin, lymph nodes, bone and eyes.

She had stage II NYHA dyspnea with fatigue, her cardiovascular clinical exam was normal. On the ECG, she had sinus tachycardia without any repolarization disorder.

On echocardiography, the cardiac cavities were at normal size with good systolic function of the ventricles. However, there was a mass in the wall of the right ventricle with moderate pericardial effusion (Figure 1).

PET revealed bilateral neoplastic mammary hypermetabolism with secondary ocular, skin, bone, lymph node, and left brain sites (Figure 2). There was no hypermetabolism in the cardiac air (Figure 3). Chest CT showed heart mass with moderate pericardial effusion with other metastatic sites.

The patient started chemotherapy. After the 4th session, there is a clinical improvement with disappearance of dyspnea. The control by ultrasound and CT scan showed a reduction in the size of the cardiac mass, which points towards a metastatic localization of his infiltrating lobular cancer (figure 4.5).

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### DISCUSSION

Cardiac metastases are rare. Bussani et al reported that the incidence of cardiac metastases ranges from 2.3% to 18.3% in autopsy studies, and is particularly high in malignant pulmonary mesotheliomas, malignant melanomas and pulmonary adenocarcinomas[4]. On breast cancer, the incidence is 15.5%, with no details on ductal or lobular carcinomas.

lobular carcinoma accounts for 20% of breast cancers, with secondary localizations mostly in the bones, lungs and lymphatics. the cardiac localization is exceptional [1].

Cardiac metastatic localizations are pericardial or epicardial, myocardial localizations, as in the present case, are less frequent [4,5].

Only 10% of patients with cardiac metastases will have symptoms. Clinical manifestations vary depending on the location and extent of myocardial involvement and may include rhythm disturbances, heart failure or embolic events [6]. Diagnosis of cardiac metastasis is done primarily with use of echocardiography and imaging techniques (scanner or magnetic resonance imaging), as in our patient [7, 8]: Echocardiography has the advantage of being easy to perform, easy to handle and reproducible, it is a test of choice for monitoring [8]. CT scanning has increased both speed and resolution, making it possible to visualize important cardiac anatomy, even in routine studies. The main strength of this modality is the excellent spatial resolution, which translates into high sensitivity to pericardial effusions. The main limitation of this modality is the poor tissue characterization [9]. Fluorine-18-FDG PET/CT is a useful modality for detecting sites of metastatic disease in cancer patients, but special considerations are required for accurate evaluation of cardiac metastasis [10,11]. In general, myocardial activity is indeterminate on whole-body FDG PET/CT given variable background myocardial uptake. However, when focal activity is present relative to background myocardium and biodistribution, further imaging should be considered.

Cardiac MRI is the best imaging modality for evaluating the extent of myocardial involvement by metastatic disease [12,13]. The tissue characterization capabilities of cardiac MRI can be used to differentiate infiltrating metastasis from myocardium and tumor from thrombus.

Lobular carcinoma is a rare disease associated with poor prognosis. It is important to control lesions using multimodal therapy that includes surgery, chemotherapy, and radiotherapy. Cardiac metastasis, which is difficult to treat, was already detected during the patient's initial examination. [14].

Systemic chemotherapy is usually the most beneficial in this situation. In cases where the metastasis results in tamponade, or obstruction of blood flow, palliative surgery is often used to relieve symptoms. Palliative radiotherapy to the heart is rarely helpful or indicated to relieve symptoms.

In our patient, the evolution was favorable after 4 sessions of chemotherapy, there is clinical improvement with reduction of the mass size at echocardiography (figure 4). After 6 session of chemotherapy, the mass has almost disappeared (figure 5), Long-term surveillance is needed clinically and with imaging.

### CONCLUSION

Myocardial Localization of lobular breast carcinoma metastasis is unusual site of Metastasis, Echocardiography is sensible to detect it, with imagery (CT, MRI), Pet scanner will be done with specific protocol to detect cardiac metastasis.

### CONFLICT OF INTEREST

The authors declare that they have no competing interests.

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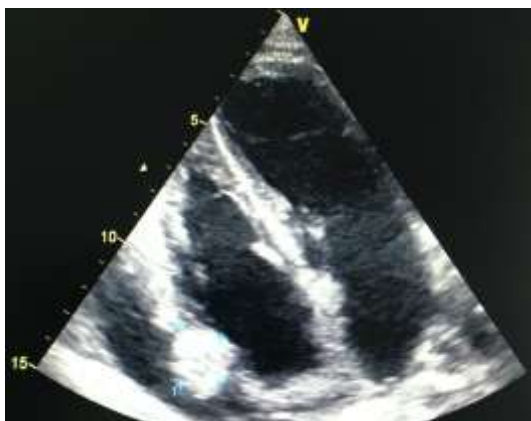


Figure 1: trans thoracic echocardiography (TTE) A 4 cavity view : The masse lateral Right ventricular with pericardial effusion

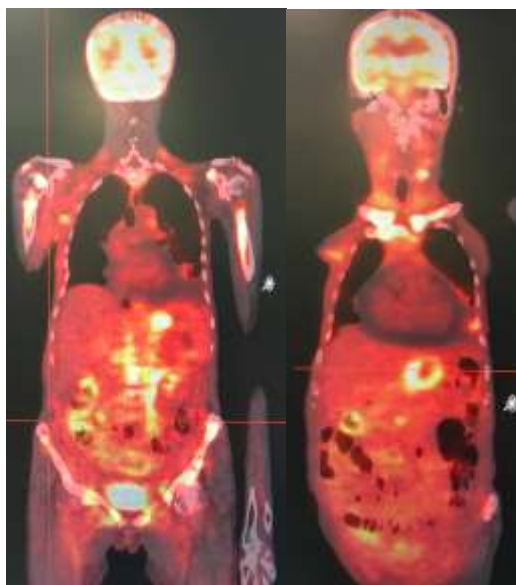


Figure2: PET scan

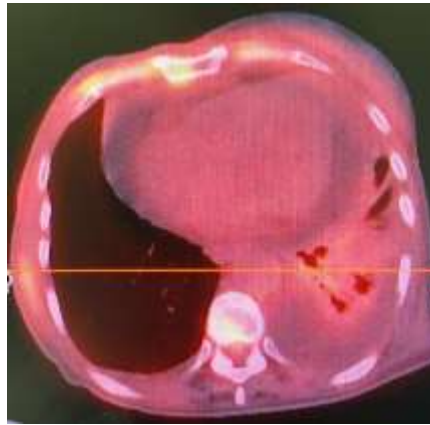


Figure 3: PET scan : no hypermetabolism in the cardiac air



Figure 4: trans thoracic echocardiography (4 cavity view) after 4 session of chemotherapy

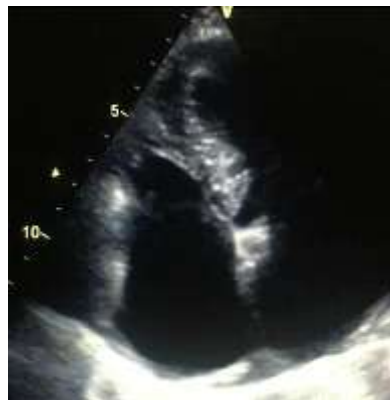


Figure 5: trans thoracic echocardiography (4 cavity view) after 6 session of chemotherapy



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