

Case report

Cardiac intraventricular mass from lung adenocarcinoma

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Summary

We present a sole intracardiac mass with no other cardiac involvement in a patient with metastatic lung cancer disease. This mass can be well characterized by advanced 3D echocardiography and echocardiographic contrast.

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A 70-year-old female presented with sudden low back pain. She was previously diagnosed with dyslipidaemia and type 2 diabetes mellitus. There was no history of previous cardiac illness. She did not suffer from dyspnea or chest pain. Cardiovascular examination was normal, without cardiac murmurs. Musculoskeletal magnetic resonance showed L2 metastatic epiduritis and multiple lumbosacral and iliac metastatic lesions, and thoracoabdominal computed tomography showed primitive neoplasm in the upper lobe of the left lung. Pathological study of needle aspiration sample of the lung was diagnostic for adenocarcinoma.

PET-study demostered lung and bone lesions and also mass in the left ventricle. A transthoracic 2D-echocardiogram was performed (Movie I in the Data supplement), showing a mass in the left ventricle.

No other intracardiac masses were found and there was not pericardial effusion. Left ventricular systolic function was normal, with ejection

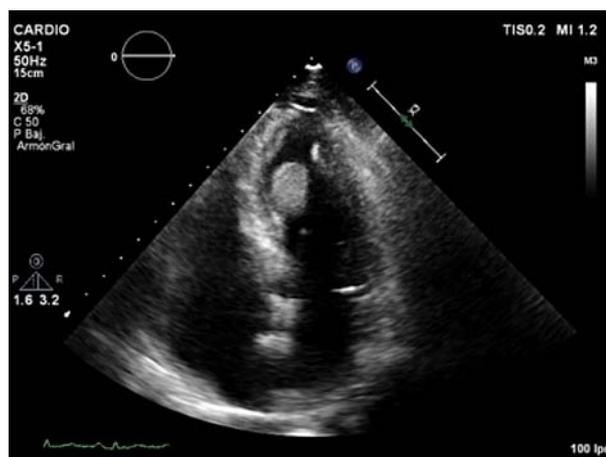


Figure 1. Apical four-chamber echocardiographic view. Left ventricular mass attached to inferior interventricular septum.

fraction of 63%. Tricuspid, aortic and pulmonary valve were normal and mitral valve had trace mitral regurgitation. There was no intraventricular pressure gradient caused by the mass, by color flow Doppler and continuous wave Doppler results.

Conventional transthoracic echocardiography was repeated a week later, without changes. 2D-echocardiographic study was completed with intravenous echocardiographic contrast to demonstrate perfusion of the mass, excluding the diagnosis of thrombus (Movie II in the Data supplement) and with 3D echocardiography for better visualization and establishing spatial relation-

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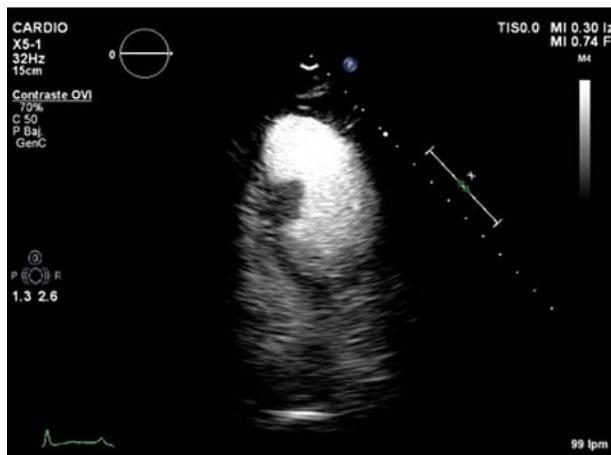


Figure 2. Echo-contrast was administered, showing perfusion of the mass, excluding the diagnosis of thrombus.



Figure 3. 3D-transthoracic echocardiogram. Apical two-chamber view. Mass attached to the left ventricular inferior wall.

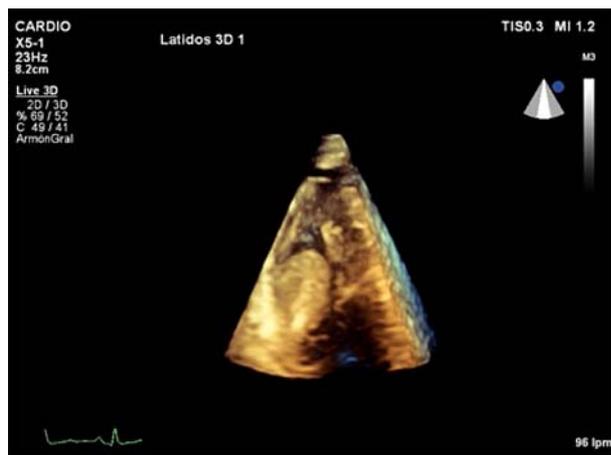


Figure 4. 3D-Zoom. Detailed view of the mass.

ships of the mass (Movie III and Movie IV in the data supplement).

The patient had poor outcome and died, autopsy was not performed and therefore histologic study of the mass was not available. Although the PET study showed perfusion of the mass and contrast echocardiographic study demonstrated perfusion. Based on the clinical scenario and the PET, 3D-transthoracic echocardiogram and contrast findings, the mass was suspected to be a cardiac metastasis. These images show sole intracardiac mass (probably metastasis) with no other cardiac involvement in a patient with metastatic lung cancer disease. This is an unusual case because of the atypic pattern of metastases in the heart [1], that more often is characterized by pericardial effusion and local extension [2] or involvement and atrial masses with invasion to the heart by the pulmonary veins [3]. Haematogenic dissemination is the most probable mechanism for this case. Three-dimensional echocardiography is useful in diagnosis and monitoring of myocardial masses [4,5].

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