An Unusual Left Atrial Mass in a Woman with Active Breast Cancer and Recent Cardiothoracic Surgery

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Abstract

Atrial masses are rare and more often localized in the right atrium. They are usually detected incidentally, and the leading causes are tumors, thrombi, or infective vegetations. However, normal structures and artifacts (“pseudomasses”) should also be considered in differential diagnosis, especially after cardiac and/or aortic surgery. We present a case of an unusual left atrial image observed on transthoracic echocardiography in an 83-year-old woman after an intervention of open-chest ascending aorta replacement and myocardial revascularization.

Keywords: Aortic replacement, cardiac pseudomasses, computed tomography, echocardiography, left atrium

INTRODUCTION

Atrial masses are rare and more often localized in the right atrium.¹ They are often detected incidentally during imaging studies, and the leading etiologies are tumors, thrombi, and vegetations.²,³ Echocardiography is the procedure of choice for evaluating cardiac mass lesions, although it can be biased by some pitfalls.² However, normal structure and artifacts (the so-called “pseudomasses”) should also be considered in differential diagnosis.⁴ We present a case of an unusual left atrial (LA) image observed on transthoracic echocardiography (TTE).

CASE REPORT

An 83-year-old woman, during the diagnostic assessments for a breast cancer, was diagnosed by chest computed tomography (CT) scan as having an asymptomatic ascending aortic aneurysm (maximum diameter 6.5 cm), susceptible of surgical correction.

After 3 weeks, she underwent elective replacement of ascending aorta with 30 mm Hemashield platinum prosthesis and anastomosis of the left internal mammary artery to the descending anterior coronary artery that had a tight stenosis.

She underwent cardiac rehabilitation in our department, and no complications occurred during the hospital stay.

A routine after surgery, TTE showed good biventricular systolic function, normal appearance of the visible aortic prosthesis, and an unclear LA image, looking hyperechoic, especially in the four-chamber view [Figure 1a-d].

Therefore, a new chest CT scan was performed focusing to the heart and aorta, which showed no intracardiac masses.

Consequently, the mass visible during echocardiography was referred to a pseudomass due to the tortuous and “C-shaped” descending thoracic aorta, which had, at this level, an horizontal trait [Figures 2 and 3].

DISCUSSION

An unclear LA image was found by echography in a case with an active breast cancer and a recent open-surgery replacement of ascending aorta and coronary revascularization.

She underwent thoracic and abdomen CT scan 1 month before surgery for staging of breast tumor showing no further malignancy and an enlarged and tortuous thoracic aorta.

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Due to the history of active cancer and recent open-chest surgery, after collegial discussion with cardiac surgeons and oncologists, a new thoracic CT scan was performed ruling out LA masses and showing a slight further “horizontalization” of the descending thoracic aorta distally to the vascular prosthesis which impressed “ab extrinseco” the LA and referred for the echographic LA image. In clinical practice, artifacts are common on echocardiography,[2] especially after cardiac surgery, but to the best of our knowledge, this case is the first in the literature which reported an artifact simulating a mass into the left atrium. Our findings could be in keeping with a recent study by Mestres et al.[5] who demonstrate that the endograft implant into the aortic arch and proximal thoracic aorta can cause a softening of the proximal descending thoracic aorta curvature, significantly increasing its angle after the intervention.

In our case, an already tortuous thoracic aorta was the cause of a LA pseudomass image on echography, due to further deformation of the thoracic “C-shaped” tract of aorta after open-chest aortic surgery. “Ex-post” image along the LA-free wall in the two-chamber and three-chamber views could have been attributed to tortuous descending aorta and so the “pseudomass” in the LA in the four-chamber view to a distal portion of the same aortic vessel.
**Conclusion**

This case underlines the importance to clearly report the mechanism of pseudomasses to avoid further unnecessary examinations in the future.

**Declaration of patient consent**

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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**Conflicts of interest**

There are no conflicts of interest.

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