Not a Coincidental Concurrence of Breast Carcinoma and Cardiac Myxoma: Case Report

Ling-Yun Kong

Tsinghua University Affiliated Beijing Tsinghua Changgung Hospital: Beijing Tsinghua Changgung Hospital

Wei Xiang

Tsinghua University Affiliated Beijing Tsinghua Changgung Hospital: Beijing Tsinghua Changgung Hospital

Ling-Ling Chen

Tsinghua University Affiliated Beijing Tsinghua Changgung Hospital: Beijing Tsinghua Changgung Hospital

Dong-Yan Shen

Tsinghua University Affiliated Beijing Tsinghua Changgung Hospital: Beijing Tsinghua Changgung Hospital

Fang Liu (✉ fliu2084@126.com)

Beijing Tsinghua Changgung Hospital

Case report

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Abstract

Background: Myxoma has been considered to undergo a simple and benign process but not always so.

Case presentation: A female patient was admitted for evaluation of left breast nodule. Physical examination showed facial pigmentation, left breast nodule and 3/6 diastolic murmur at the mitral valve area. Preoperative echocardiography revealed a massive mobile left atrial mass attaching to the interatrial septum causing obstruction to mitral orifice. Histopathologic investigation confirmed the left atrial mass to be myxoma and left breast nodule to be cancer. Carney complex was considered and lifelong follow-up was advised.

Conclusion: Cardiac myxoma may present as a part of a systematic disease entity. In patients with a combination of breast nodule and facial pigmentation, transthoracic echocardiography examination is advised to guide decision-making.

Background

Cardiac myxoma has been recognized as the most common primary cardiac neoplasm (1), while 3%~10% of cases may present as a component of Carney complex (CNC) (2, 3). The latter is associated with defects of a tumor suppressor gene and consequently neoplasia at multiple sites.

Case Presentation

A 53-year-old woman was admitted for left breast nodule on regular health checkup. She reported shortness of breath and history of syncope after running. Physical examination revealed facial pigmentation, a left breast nodule at 12 o'clock with unclear border, poor mobility without tenderness. Auscultation revealed a 3/6 diastolic mitral murmur. Breast sonography and mammography confirmed the irregular left breast mass (Fig. 1, A and B). Transthoracic echocardiography revealed a massive solid homogeneous echogenicity in left atrium, attaching to the left side of the interatrial septum, and causing obstruction to flow across the mitral orifice (Fig. 1, C and D). Percutaneous ultrasound-guided core needle biopsy suggested malignancy of left breast mass. She underwent successful staging operation beginning with left atrial mass resection and then left breast cancer modified radical surgery. Histopathological study confirmed left breast lesion to be invasive carcinoma (Fig. 1E), while cardiac mass to be myxoma (Fig. 1F). She was on regular follow-up and no evidence of recurrence was identified for 4 years.

Discussion

Cardiac myxoma has long been recognized as the most common primary cardiac neoplasm (1). It is biologically benign, and surgical resection has been considered the best way to treat it. Most myxomas are isolated, while 3%~10% of cases may occur in the context of CNC (2, 3), which is a systematic disease involving skin, heart, breast, endocrine glands, reproductive system and more. Cardiac myxoma is

the most common non-cutaneous lesions in CNC (20%~40%) (4). This case provides evidence for a frustrating prognosis and invasive trend of cardiac myxoma in patients with CNC. It typically occurs in younger patients with atypical and multiple foci, has higher risk of distal embolism and post-operative recurrence. On the other hand, breast cancer has caused great burden on a global scale (5). Therefore, concurrence of breast cancer and myxoma may be not uncommon positive findings may change the clinical decision making. It is important for clinicians to be cognizant of a link between cardiac myxoma and systematic disease before decision-making. Transthoracic echocardiography is the key to identify cardiac myxoma, and it is also useful to assess its structural traits and hemodynamic effect. The established treatment remains surgical excision and high rate of cardiac myxoma recurrence should alert the clinicians to make a close follow-up regimen.

Conclusions

Cardiac myxoma may present as a part of a systematic disease entity instead of an isolated condition. In the era of cardio-oncology, this case puts emphasis on the potential need of preoperative echocardiography in patients with breast cancer, especially in those with cutaneous pigmentation. The results may lead to change of decision-making.

Abbreviations

CNC, Carney complex.

Declarations

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Authors' contributions

FL, WX and LLC collected the clinical, imaging and histopathological data relative to the Case Report; LYK composed the draft of the manuscript; FL is head of the Echo Lab and conceived the Case report; DYS is the head of cardiovascular surgery department and participated in the drafting of the manuscript. All authors read and approved the final manuscript.

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Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Ethics approval and consent to participate

This study was approved by the institutional review board of Beijing Tsinghua Changgung Hospital. The requirement for informed consent was obtained from the patient. There is no conflict of interest exists in the submission of this manuscript, and manuscript is approved by all authors for publication.

Consent for publication

Written informed consent for publication of this manuscript was obtained from the person.

Competing interests

The authors declare that they have no competing interests.

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Figures

Figure 1

Imaging and pathological data of the patient. A, Breast sonography shows an abnormal echodensity of irregular shape and flow filling of left breast (red arrow). B, Mammography X-ray photography confirms the upper quadrant nodule. C, Echocardiography reveals a massive left atrial solid mass, attaching to the atrial septum and almost filling the chamber. D, Color Doppler shows the mass caused obstacle to left

ventricular inflow. E, Histological evaluation confirms left breast to be invasive carcinoma and F. left atrial mass to be myxoma.