Noninvasive Evaluation of a New Left Atrial Mass in a Patient with Prior Metastatic Germ Cell Tumor

Emily Gosche MD[1], Jessica Parr MD[2], Elizabeth R. Kessler MD[3], Lavanya Kondapalli MD FACC[2], Daniel W. Groves MD[2]
Department of Medicine[1], Division of Cardiology[2], Division of Medical Oncology[3], University of Colorado Anschutz Medical Campus, Aurora, CO, USA

Background

Primary cardiac tumors are uncommon with a prevalence of 0.001 to 0.3% in autopsy series.[1] Secondary metastases to the heart are more common and have been noted in 8.4% of patients with a primary cancer of any site at autopsy, though cardiac metastases from germ cell tumors are rare.[2]

Case

A 38-year-old man with history of treated metastatic non-seminomatous germ cell tumor, untreated hepatitis C, and alcohol dependence presented with chest discomfort and alcohol withdrawal. His oncologic history was significant for a diagnosis of metastatic non-seminomatous germ cell tumor (NSGCT) 18 years prior with pathology indicative of embryonal carcinoma with focal teratoma and teratocarcinoma. Cancer treatment included orchiectomy, chemotherapy (bleomycin, etoposide, and cisplatin), and multiple abdominal and thoracic debulking procedures of teratomas. He had stable cancer imaging for over 5 years and negative tumor markers. On hospital admission, he had hypoxia, positive D-dimer and chest CT noted new left atrial mass which was also visualized on TTE (Figure 1). Cardiac MRI demonstrated a mobile, left atrial mass attached to the interatrial septum near the fossa ovalis without invasion of adjacent cardiac structures. The mass was hyperintense compared to the myocardium on T2-weighted imaging and had heterogeneous late gadolinium enhancement.

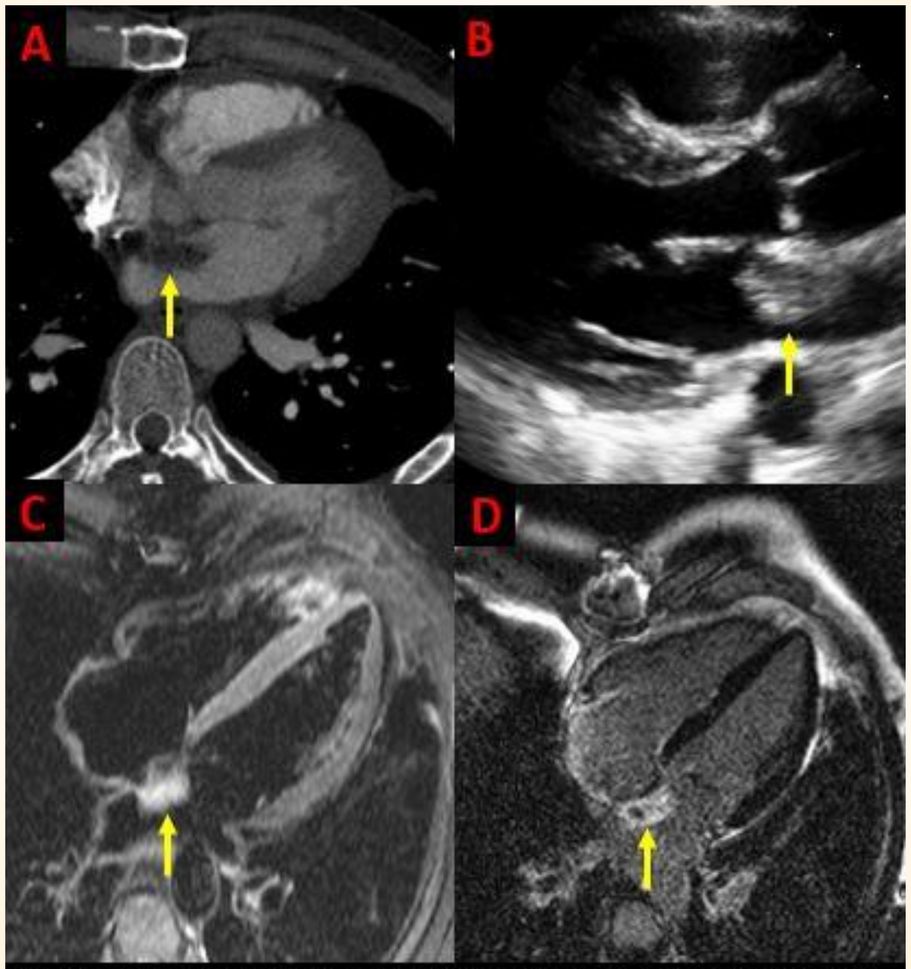

Figure 1. A CT PE scan (Panel A) demonstrated a hypoattenuating mass (yellow arrow) in the left atrium which was also visualized on transthoracic echocardiogram (Panel B). On cardiac MRI, the left atrial mass was attached to the interatrial septum near the fossa ovalis. The mass was hyperintense compared to myocardium on T2-weighted imaging (Panel C) and had heterogeneous late gadolinium enhancement (Panel D). Given the location of the left atrial mass and tissue characteristics, the left atrial mass is favored to represent a myxoma.

Decision-Making

Given the left atrial mass location near the fossa ovalis and tissue characteristics on cardiac MRI, the mass is most consistent with a myxoma. Cardiac metastases from germ cell tumors are rare and can occur by hematogeneous spread usually to the right heart via the inferior vena cava or direct invasion by chest tumors. The patient has undergone evaluation by cardiothoracic surgery with surgical treatment pending.

Conclusion

Current five-year survival rate for NSGCT of all stages is 95.2%.[4] Management of non-seminomatous metastatic testicular cancer includes cisplantin-based chemotherapy and debulking of all remaining tumors. Timing of the identification of the atrial mass favors myxoma as does multimodality cardiac imaging. When evaluating a cardiac mass in a patient with a history of metastatic cancer, cardiac MRI can help differentiate between primary cardiac tumors and metastases.

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Disclosures: All authors, none