Control Number: 42

Abstract Category: Clinical Case Challenge in Cardio-Oncology

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

ABSTRACT BODY

Background and Purpose

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 Description and Outcomes

A 38-year-old man with history of treated metastatic non-seminomatous germ cell tumor, chronic pancreatitis, 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 18 years prior with pathology indicative of embryonal carcinoma with focal teratoma and teratocarcinoma. Cancer treatment included orchiectomy, chemotherapy (bleomycin, etoposide, and cisplatin), as well as multiple abdominal and thoracic debulking procedures. With stable cancer imaging for over 5 years and negative tumor markers, he had been discharged from Oncology in the prior year. On hospital admission, he had hypoxia and a positive D-dimer. Chest CT to evaluate for pulmonary embolus incidentally noted a left atrial mass which was also visualized on transthoracic echocardiogram (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.

Discussion

Given the left atrial mass attachment near the fossa ovalis in the interatrial septum 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 hematogenous spread usually to the right heart via the inferior vena cava, direct invasion by chest tumors, or lymphatic spread. The patient has undergone evaluation by cardiothoracic surgery with surgical treatment pending. When evaluating a cardiac mass in a patient with a history of metastatic cancer, multimodality imaging can help differentiate between primary cardiac tumors and metastases.

References

1. Burke A, Vimani R. Tumors of the heart and great vessels. Atlas of Tumor Pathology, 3rd Series, Fasicle 16. Washington DC, Armed Forces Institute of Pathology, 1996. 2. Silvestri F, Bussani R, Pavletic N, Mannone T. Metastases of the heart and pericardium. G Ital Cardiol, 1997; 27(12): 1252-1255.

Image 1

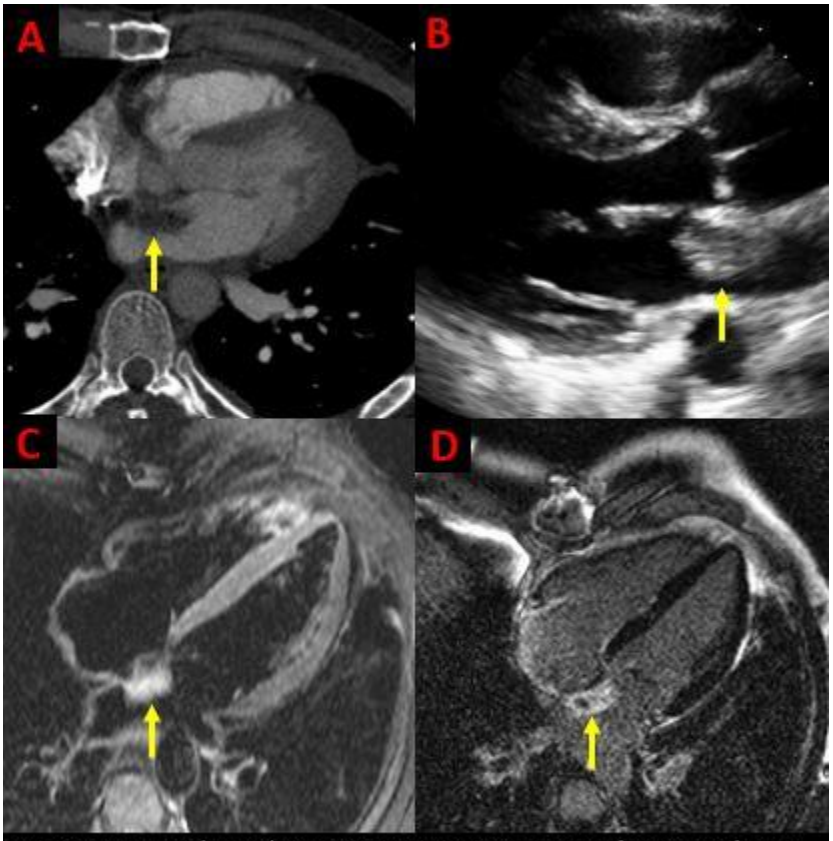

Figure 1. A CT PE scan (Panel A) demonstrated a hypoattenuating mass (yellow arrow) in the left atrium which was also visualized on transthoracic echocardiogram (Panel B). On cardiac MRI, the left atrial mass was attached to the interatrial septum near the fossa ovalis. The mass was hyperintense compared 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.