

## Why do we need to be vigilant over myocardial thickening in oncology patients? Lessons from a case

Onkoloji hastalarında saptanan miyokardiyal kalınlaşmayı neden dikkate almalıyız? Bir vakadan dersler

Çağdaş Topel, M.D.<sup>1</sup>

Samet Sevinç, M.D.<sup>2</sup>

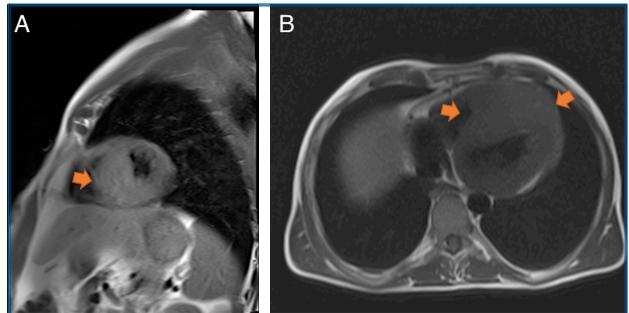
Kadriye Memiş Sancar, M.D.<sup>2</sup>

<sup>1</sup>Department of Radiology, Health Sciences University, İstanbul Mehmet Akif Ersoy Thoracic and Cardiovascular Surgery Training and Research, İstanbul, Turkey

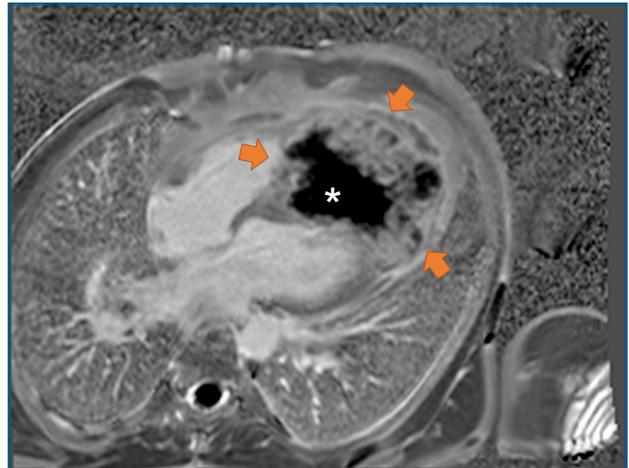
<sup>2</sup>Department of Cardiology, Health Sciences University, İstanbul Mehmet Akif Ersoy Thoracic and Cardiovascular Surgery Training and Research, İstanbul, Turkey

A 42-year-old male with known lung adenocarcinoma was referred to our center for the evaluation of septal wall thickening detected on echocardiography (Figure 1, Video 1\*). T1- and T2-weighted images of cardiac magnetic resonance (CMR) showed significant wall thickening

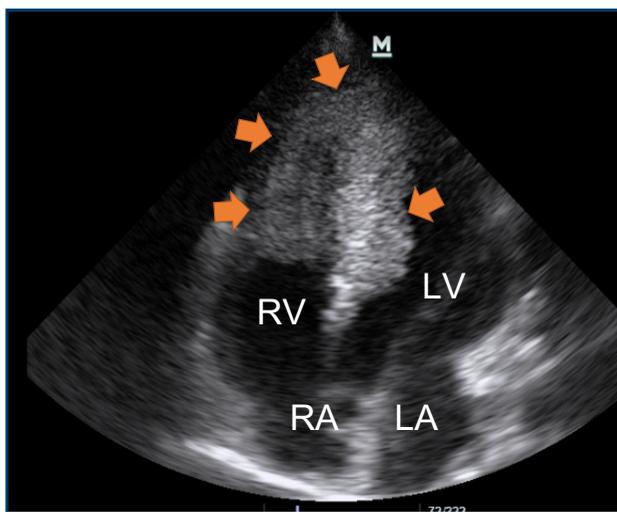
isointense to the myocardium (Figure 2, Video 2\*). Biventricular cavities were markedly obliterated due to its mass effect. The first-pass perfusion study with gadolinium showed a large, vividly enhancing, heterogeneous mass with a necrotic center (Video 3\*). Late gadolinium-enhanced images confirmed the large, heterogeneous mass with its nonenhancing necrotic core (Figure 3). The findings were compatible with myocardial metastasis. The primary tumor



**Figure 2.** The short-axis (A) T2-weighted and transversal (B) T1-weighted cardiac magnetic resonance images showed significant myocardial thickening isointense to the normal myocardium.



**Figure 3.** Late gadolinium image of the 4-chamber image showed heterogeneously enhancing mass with its necrotic/hemorrhagic center (asterisk).



**Figure 1.** The apical 4-chamber echocardiography image showed mass-like thickening of the septal myocardium (arrows).

of the heart is rare with the reported prevalence of 0.1%-0.01%, whereas the metastatic cardiac tumor is more frequent than primary tumors with the range of 0.7%-3.5% in autopsy series. The prevalence of cardiac metastasis is reported up to 9.1% in oncology patients. The leading malignancies that metastasize to the heart are lung, breast, and hematologic malignancies with the rates of 36%-39%, 10%-12%, and 10%-21%, respectively. Computed tomography and CMR are useful tools to detect, localize, and characterize the mass. CMR has the unique feature to reveal

tissue characteristics that are of utmost importance in the presence of any myocardial mass as hypertrophic cardiomyopathy rarely presents as a mass-like subtype. Gadolinium administration may aid in characterizing the mass exhibiting isointense signal characteristics on the conventional images as we faced in our case.

Informed consent was obtained from the patient for the publication of the case image and the accompanying images.

\*Supplementary video files associated with this article can be found in the online version of the journal

