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Cardiac involvement in Invasive Squamous Cell Carcinoma of the Lung

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Article Info

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Case Report

A 54-year-old gentleman with recently diagnosed Stage IIIB squamous cell carcinoma of the lung with metastases to the lymph nodes had a transthoracic echocardiograph (TTE) performed for evaluation of progressive dyspnea on exertion. A large pericardial effusion causing tamponade physiology was noted on TTE and the Computerized Tomography (CT) image of the thorax (Figures 1 and 2). Following a pericardi ocentesis, a repeat TTE was performed which showed the presence of a left atrial mass (Figure 3). The mass was initially reported as a 1.3x0.5 cm pedunculated mobile left atrial mass arising from the left atrial appendage prolapsing in the mitral orifice in diastole before further assessment with a transesophageal echocardiogram (TEE) was performed. The TEE demonstrateddirect invasion of the mass from the left upper pulmonary vein into the left atrial appendage with minimal residual flow of that pulmonary vein and complete opacification of the left atrial appendage as well as invasion of the superior vena cava (Figure 4). The mobile mass in the left atrium was a strand of tumor that extended from the edge of the left atrial appendage (Figures 5 and 6).

Comment

Metastases to heart are significantly more common than primary cardiac tumors with an approximate 20-40x the prevalence of that of primary tumors [1,2]. While historically a post-mortem finding, cardiac metastases are becoming increasingly diagnosed in living individuals with advances in imaging modalities including echocardiography (TTE and TEE), CT, MRI, and Positron Emission Tomography [3,4]. Here, we describe a rare example of direct invasion from squamous cell carcinoma of the lung of a mobile mass in the left atrium on TTE that was better visualized with TEE.

The patient underwent palliative radiation therapy before transitioning to hospice care.

Conflicts of Interest: The author reports no conflict of interest.

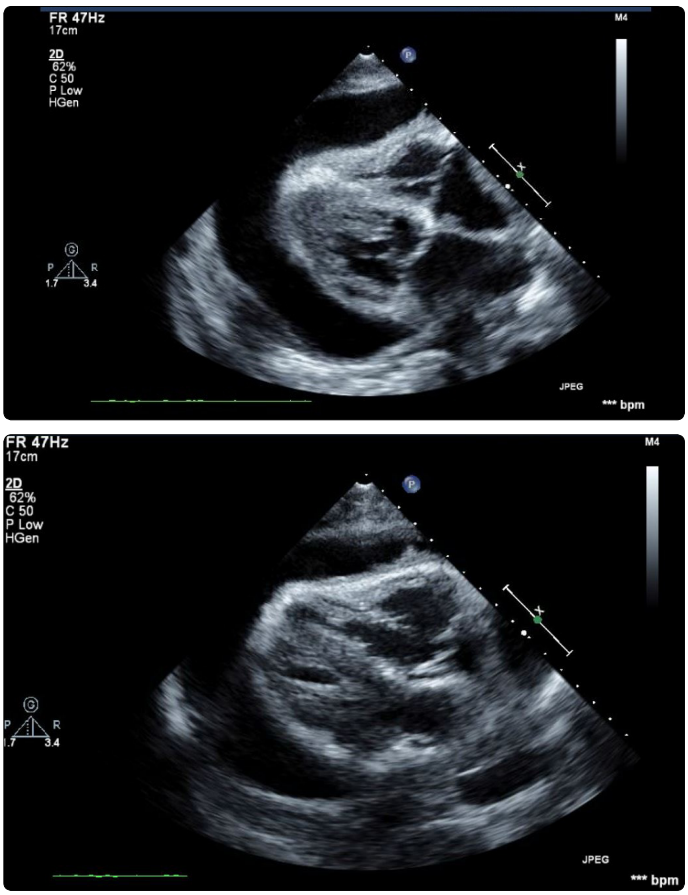

Figure 1: Parasternal long axis view of TTE with significant pericardial effusion present with tamponade physiology demonstrating compression and late diastolic collapse of the right ventricle. Top: end-systole. Bottom: end-diastole

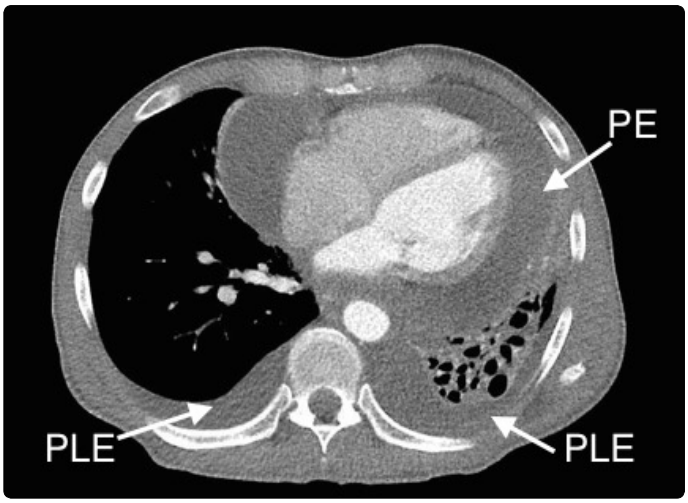

Figure 2: CT chest demonstrating large pericardial effusion, left pleural effusion, and small right pleural effusion. PE: Pericardial Effusion, PLE: Pleural Effusion

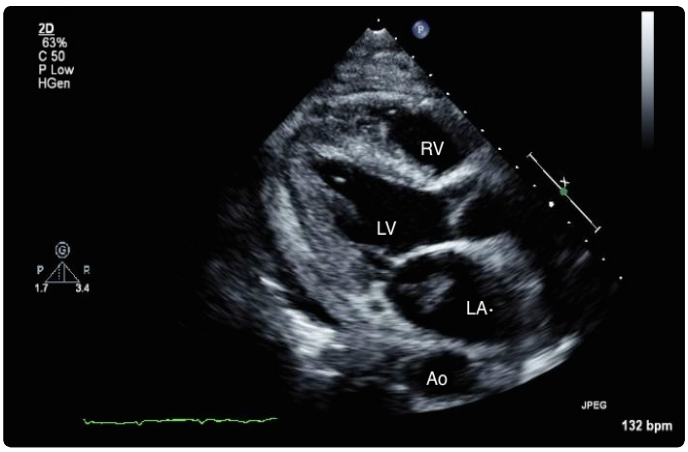

Figure 3: Parasternal long axis view of TTE with evidence of mobile left atrial mass. Abbreviations: LA: Left Atrium, LV: Left Ventricle, RV: Right Ventricle, AO: Aorta

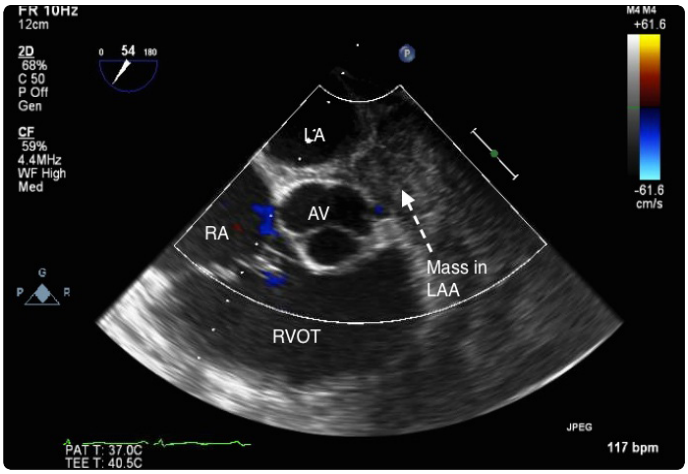

Figure 4: Mid-esophageal 60-degree view of TEE with complete opacification noted of the Left Atrial Appendage from invasion of tumor from the pulmonary vein. Abbreviations: LA: Left Atrium, LAA: Left Atrial Appendage, RA: Right Atrium, RVOT: Right Ventricular Outflow Tract, AV: Aortic Valve

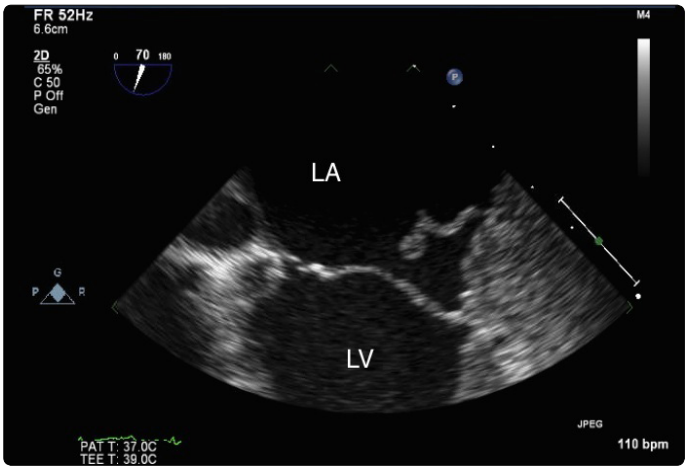

Figure 5: Mid-esophageal 70-degree view on TEE demonstrating the mobile atrial mass as a strand of tumor from arising from the Left Atrial Appendage.
Abbreviations: LA: Left Atrium, LV: Left Ventricle

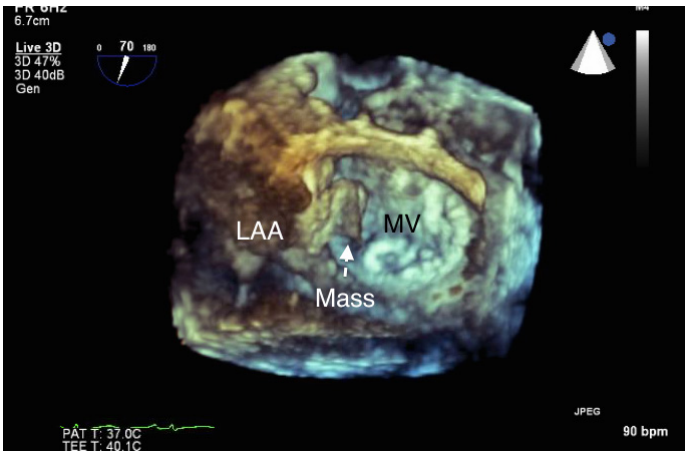

Figure 6: Real-time 3D TEE of mitral valve as seen from the left atrium. Mobile mass extending from left atrial appendage visualized extending near the mitral valve orifice. LAA-Left Atrial Appendage, MV-Mitral Valve

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