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Pulmonary Sarcoidosis with Pulmonary Hypertension, Fossa Ovalis Aneurysm, and Interatrial Shunt

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Figure 1: A transthoracic 2D-echocardiogram showing severe right ventricular enlargement, and atrial septum bulging toward the left side. LA = left atrium; LV = left ventricle; RA = right atrium; RV = right ventricle.

A 47-year-old man with stage II sarcoidosis, presented in moderate respiratory distress. A transthoracic echocardiogram revealed normal left ventricular size and systolic function, with an ejection fraction of 55% and severe right ventricular enlargement (Figure 1). The atrial septum bulged toward the left side, with a fossa ovalis aneurysm (FOA). There was severe tricuspid regurgitation and estimated pulmonary artery peak systolic pressure was 100–115 mm Hg. A bubble study revealed crossing of some bubbles from right to left, demonstrating a shunt (Figure 2).

Echo-Doppler has proven valuable in pulmonary sarcoidosis, and in diagnosing the presence and extent of right heart enlargement and pulmonary hypertension.¹ Visualizing an FOA and concomitant right to left shunt can shed further light on the pathophysiology of the disease.

Reference

1. Skold CM, Larsen FF, Rasmussen E, Pehrsson SK, Eklund AG. Determination of cardiac involvement in sarcoidosis by magnetic resonance imaging and Doppler echocardiography. *J Intern Med* 2002;252:465–471

Figure 2: Top panel, left: A transthoracic 2D-echocardiogram showing the atrial septum bulging toward the left side, with a fossa ovalis aneurysm (FOA). Top panel, right: Bubble study performed with agitated saline injected through an antecubital vein revealing crossing of some bubbles from right to left, demonstrating a shunt, and unduly prolonged swirling of flow in the right heart chambers. Bottom panel: Continuous wave Doppler showing severe tricuspid regurgitation. FOA = fossa ovalis aneurysm; LA = left atrium; LV = left ventricle; RA = right atrium; RV = right ventricle, TR C.W. Doppler = tricuspid regurge continuous wave Doppler.