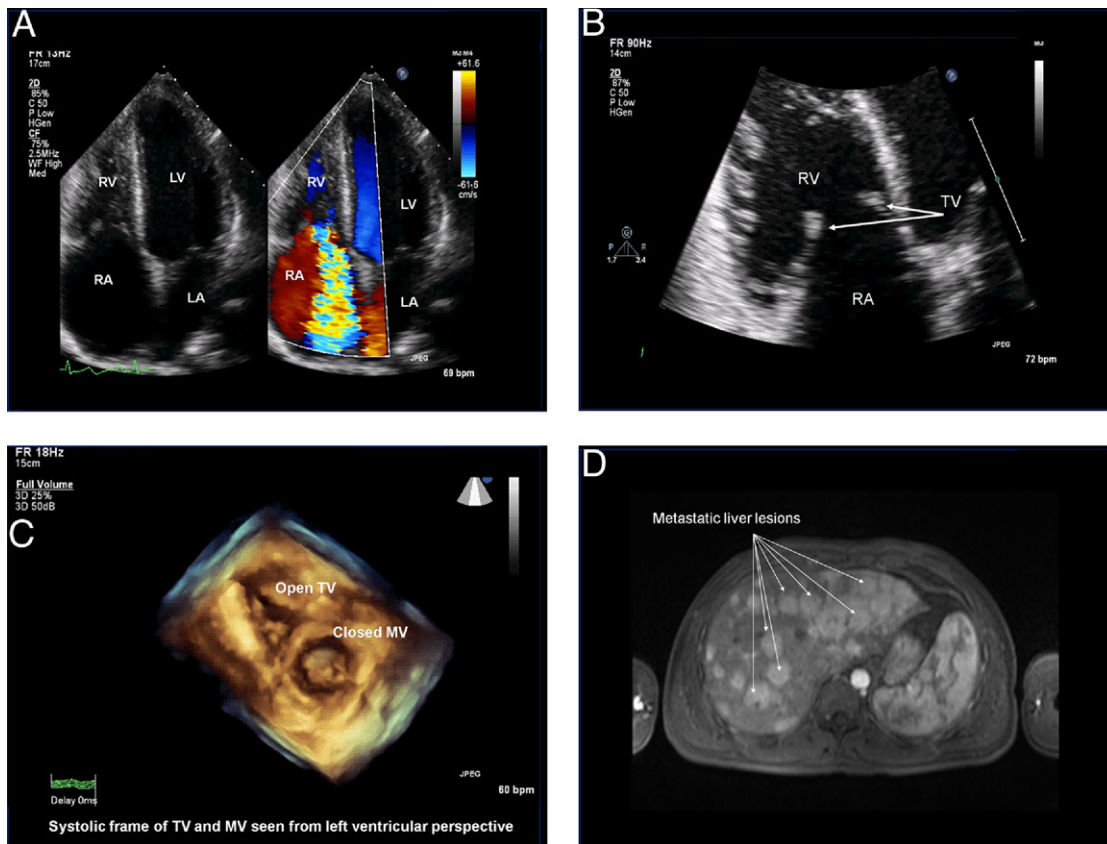


## IMAGES IN CARDIOLOGY

# Carcinoid Heart Disease

Susie N. Hong, MD, Muhamed Saric, MD, PHD, Itzhak Kronzon, MD

New York, New York



From the New York University Medical Center, New York, New York. Manuscript received July 17, 2009; accepted July 27, 2009.

**A** 26-year-old man with a history of carcinoid and small-bowel resection presented with shortness of breath. Physical examination revealed a pulsatile liver, leg edema, and a holosystolic murmur at the lower sternal border. Transthoracic echocardiography showed thickened and restricted tricuspid leaflets that failed to coapt and severe tricuspid regurgitation (**A and B**, [Online Videos 1 and 2](#)). On 3-dimensional echocardiography, tricuspid leaflets remained open and failed to close throughout the cardiac cycle while the mitral valve (MV) moved normally (**C**, [Online Video 3](#)). Abdominal magnetic resonance imaging demonstrated hepatomegaly and innumerable liver metastases (**D**). These findings, combined with elevated urinary and serum 5-hydroxyindoleacetic acid, are consistent with metastatic carcinoid and carcinoid heart disease. LA = left atrium; LV = left ventricle; RA = right atrium; RV = right ventricle; TV = tricuspid valve.