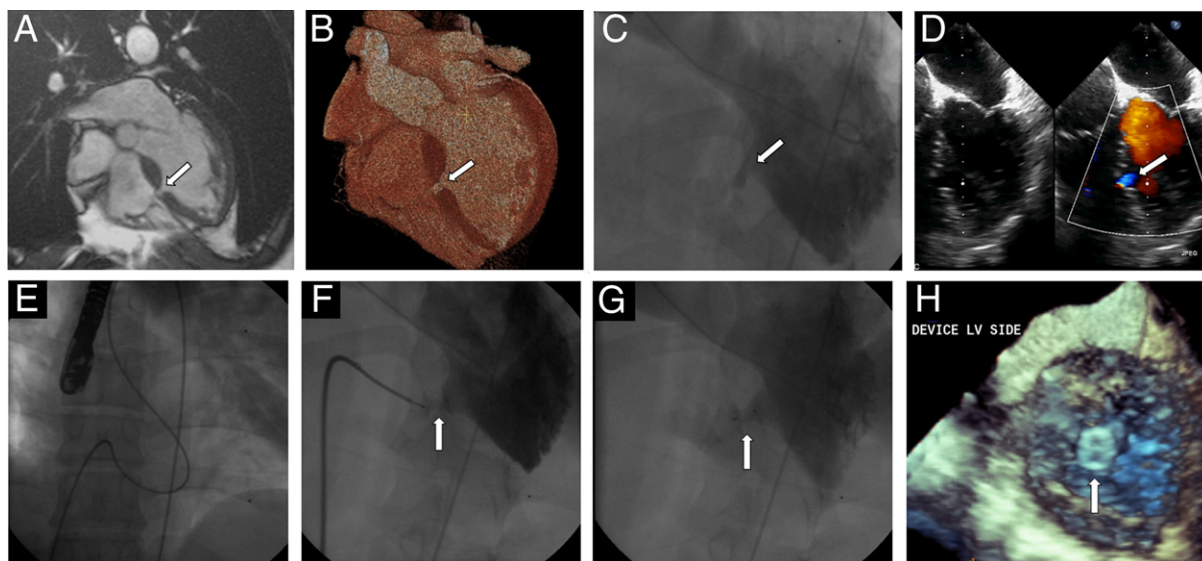


IMAGES IN CARDIOLOGY

Multimodality Evaluation and Transcatheter Closure of a Muscular Ventricular Septal Defect

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A 34-year-old man with a history of aortic coarctation repair presented with shortness of breath on exertion and was found to have a muscular ventricular septal defect (VSD) on echocardiography and mild pulmonary hypertension (estimated pulmonary artery pressure 41 mm Hg). A cardiac MRI study revealed a Qp:Qs of 1.6:1 by phase contrast. Given his worsening symptoms, increased shunt, and pulmonary hypertension, closure of the VSD was indicated.

A coronary computed tomography angiogram showed normal coronaries without anomalies and demonstrated the defect to be mid-muscular and funnel-shaped. The anatomic features of the VSD appeared amenable for device closure (A to D, [Online Video 1](#)).

The VSD was successfully closed with an 8-mm Amplatzer muscular VSD occluder (E to H). Three-dimensional transesophageal echocardiography was used during the procedure, which demonstrated excellent seating of the device and no residual shunting by color Doppler.

This case highlights the utility of multimodality cardiac imaging in the noninvasive evaluation of patients with a VSD and in guiding treatment.