

IMAGES IN INTERVENTION

Snare Removal of an Embolized Amplatzer Ventricular Septal Defect Occluder From the Left Atrium During Attempted Transcatheter Paravalvular Leak Closure

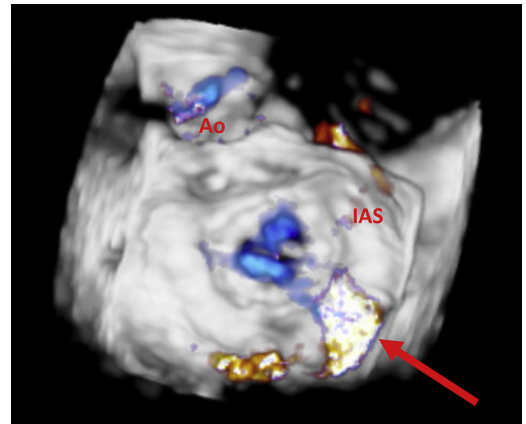


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A 75-year-old man with a history of bio-prosthetic mitral valve replacement to treat mitral regurgitation caused by *Coxiella brunetii* endocarditis developed symptomatic, severe mitral paravalvular leak (PVL) 6 months after surgery (Figure 1, Online Video 1). There was no evidence of recurrent infection. He was referred for transcatheter PVL closure.

An antegrade transseptal approach was utilized, as previously described (1). Two 4-mm ventricular septal defect occluders (St. Jude Medical, Minneapolis, Minnesota) were deployed successfully within the defect. One device embolized into the left atrium while still attached to the delivery cable and was removed (Figure 2, Online Video 2). The remaining device initially seemed to be stable, but readvancement of a delivery sheath in an effort to deploy subsequent devices resulted in loss of guidewire position across the defect. Further imaging revealed progressive instability of the remaining device, and subsequent embolization into the left atrium (Figure 3, Online Videos 3 and 4).

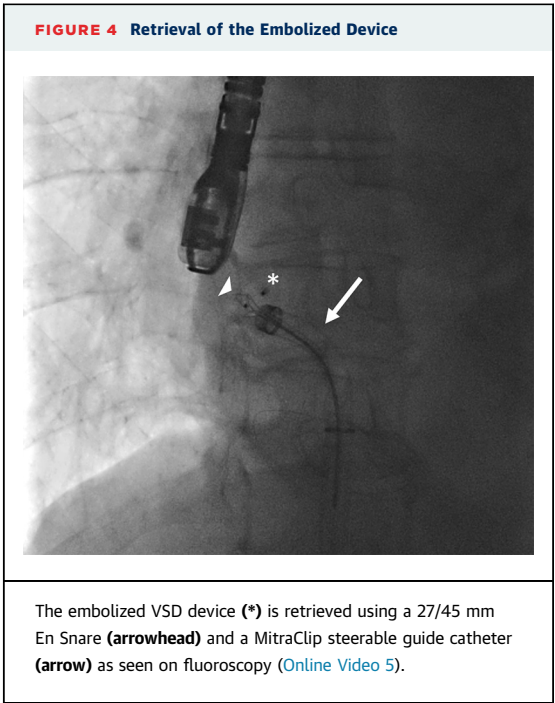
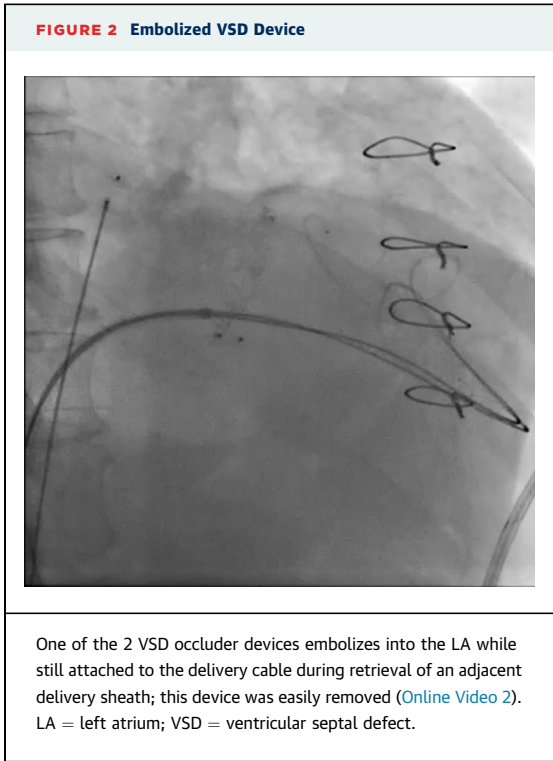
FIGURE 1 Mitral Paravalvular Leak



A wide-based posteriomedial paravalvular leak (arrow) at the 5 o'clock position is demonstrated on a 3-dimensional color Doppler echocardiogram (Online Video 1). Ao = aorta; IAS = interatrial septum.

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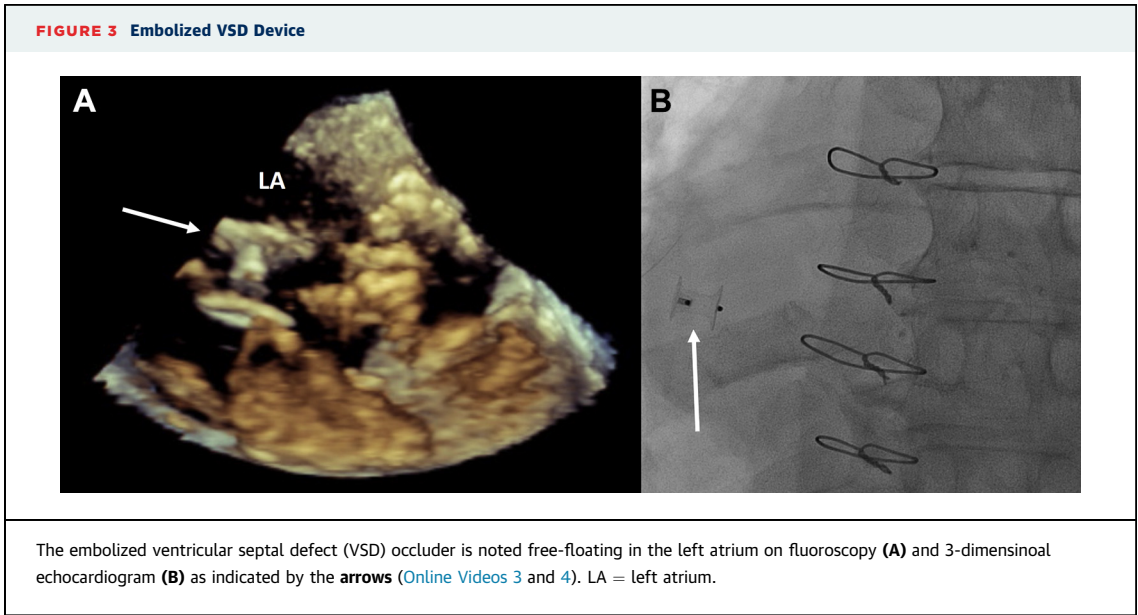
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A 24-F MitraClip steerable guide catheter (Abbott Vascular, Santa Clara, California) was advanced across the inter-atrial septum into the left atrium and steered to the embolized device using a combination of clockwise rotation and flexion. The ventricular septal defect occluder was then successfully retrieved using a 27/45 mm **En Snare** (Merit Medical

Systems, South Jordan, Utah) through a 7-F JR4 diagnostic catheter ([Figure 4](#), [Online Video 5](#)). Repeat imaging revealed unchanged PVL. The patient and treatment team opted for medical management.

Device embolization complicates transcatheter PVL closure in 0.7% to 2% of cases ([1](#)). There are few case reports of embolized Amplatzer devices used in this setting ([2-4](#)), and 2 of these reports




(3,4) describe surgical removal of devices from the left atrium. To our knowledge this is the first report demonstrating feasibility of device removal from the left atrium using transcatheter snare technique.

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KEY WORDS endocarditis, mitral paravalvular leak, mitral valve regurgitation, mitral valve replacement, ventricular septal defect

 **APPENDIX** For supplemental videos, please see the online version of this article.