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Seven Coils in 1 Heart

Therapeutic Option for Multiple VSD

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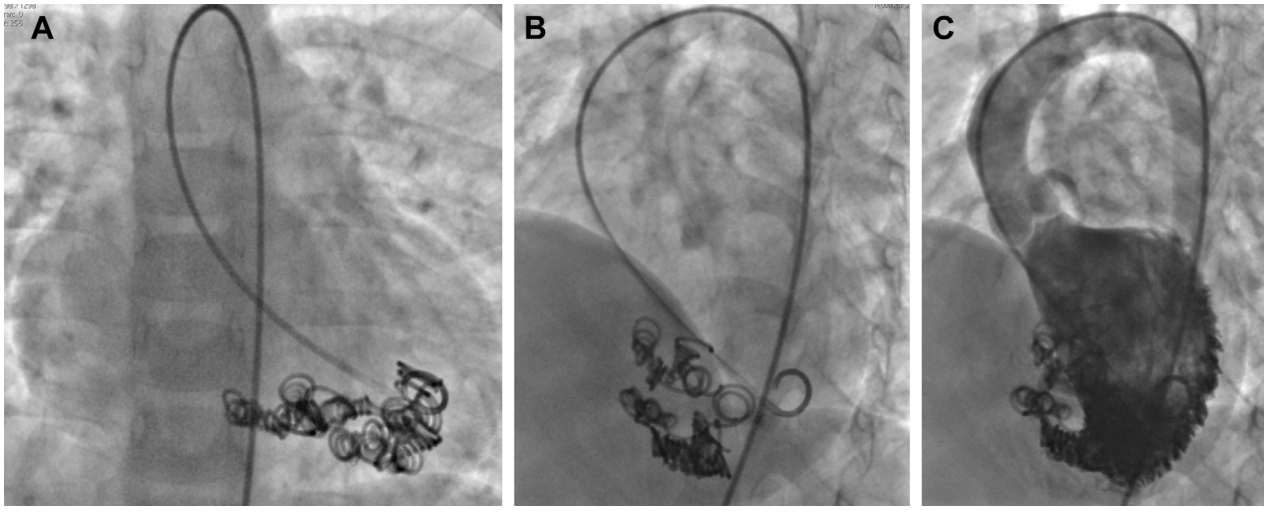
Multiple muscular ventricular septal defect (VSD) is a serious and difficult-to-treat congenital heart defect. In the event of multiple VSDs with difficult anatomy, surgical closure may be challenging or even impossible. A temporary palliative option is pulmonary artery banding that may incidentally reduce effective shunting, thus improving the chance for spontaneous VSD closure.

With continuing improvements in both techniques and available devices, percutaneous closure may be a useful therapeutic option in some patients with VSD. A routinely used device is the Amplatzer muscular VSD Occluder (St. Jude Medical, St. Paul, Minnesota). However, this nitinol double-disc device has significant limitations in patients with multiple VSDs. The presence of several implanted devices often renders the septum stiff and akinetic, occasionally leading to atrioventricular block. The Nit-Occlud Lê VSD device (PFM Medical, Cologne, Germany) is a nitinol coil device that is very flexible and incorporates polyester fibers to improve occlusion. The device is fully adaptable to varying VSD anatomies and preserves mobility of the ventricular septum. No permanent atrioventricular block has been associated with implantation of this device (1).

We present a patient with challenging multiple VSDs, who initially received pulmonary artery banding at the age of 4 months. At 3 years of age, a debanding was performed; however, significant shunting was still present. During 3 cardiac catheterizations, 7 Nit-Occlud Lê VSD devices were

FIGURE 1 Status Post-Multiple VSD Closure With Nit-Occlud Lê VSD



Posterior-anterior view **(A)**, lateral view **(B)**, left ventricle angiography **(C)**. VSD = ventricular septal defect.

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implanted using standard technique. Finally, only a small residual shunt was observed, and left ventricular contraction was good (**Figure 1**).

The Nit-Occlud Lê VSD device appears to be a valuable tool for percutaneous closure of demanding multiple VSDs.

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