

# Novel Transcatheter Mitral Valve Repair Technique in Specific Severe Mitral Regurgitation: Tips, Tricks, and Outcomes

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## ABSTRACT

### OBJECTIVE

This study aimed to review our experience in transcatheter closure of residual/iatrogenic VSDs and to report on the 12-month outcome.

### METHODS

All patients who underwent transcatheter closure of residual/iatrogenic VSDs after surgical or transcatheter congenital heart disease (CHD) interventions between January-2015 and January-2020 were included. Patients' medical records were reviewed, and analyzed.

### RESULTS

Fourteen patients with a mean age of  $14.31 \pm 8.81$  years were included. The original diagnosis was isolated VSD in 5 (35.71%) patients, VSD/DCRV in 3 (21.43%) patients, TOF in 3 (21.43%) patients, coarctation/VSD/PDA in 1 (7.14%) patient, SAM/PDA in 1 (7.14%) patient, and AVSD/TAPVD/VSDs/PDA in 1 (7.14%) patient. The age at first intervention was  $8.93 \pm 7.49$  years and the time since last intervention was  $6.09 \pm 5.16$

years. The VSD was residual in 11 (78.57%) patients and iatrogenic in 3 (21.43%) patients. The VSD site was peri-membranous in 6 (42.86%) patients, high-muscular in 4 (28.57%) patients, mid-muscular in 2 (14.29%) patients, and Gerbode shunt in 2 (14.29%) patients. The QP/QS ratio was  $2.45 \pm 0.73$ , and the VSD diameter was  $6.08 \pm 2.10$  mm. Most, 10 (71.43%) patients underwent antegrade device deployment, and 4 (28.57%) patients underwent retrograde deployment with 1 (7.14%) patient required two devices. Amplatzer™ muscular VSD devices were used in 9 (64.29%) patients and duct occluders were used in 5 (35.71%) patients with a mean device size of  $8.77 \pm 2.77$  mm. Procedural and fluoroscopy times were  $55.13 \pm 16.24$  and  $16.25 \pm 4.03$  minutes respectively. During follow-up ( $23.31 \pm 15.88$  months), no patient required re-intervention or exhibited mortality.

### CONCLUSION

Transcatheter closure of post-operative and post-intervention residual/iatrogenic VSDs represents a safe, and effective therapeutic approach.

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