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Long-term outcome of small residual shunts in pts with multiperforated interatrial aneurysms following device implantation.

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Introduction: Multiperforated interatrial aneurysms are associated with residual shunts following device closure. We sought to find the outcome of these small residual shunts over time.

Methods: We studied 29 pts who underwent device closure of atrial septal defects associated with multiperforated aneurysms. All pts had multiple left to right shunts by transesophageal echocardiography (TEE). An Amplatzer septal occluder device was placed under general anesthesia and TEE guidance. Transthoracic echocardiograms (TTE) were done at 1, 3, 6 and 12 months following the procedure to assess for device positioning, residual shunts or possible thrombi. Saline contrast echocardiography was performed with and without the Valsalva maneuver after one, two or more years to assess for right to left shunts.

Results:All pts had good quality TEE images, depicting 1-4 small residual atrial communications in the periphery of their interatrial aneurysm that were not included within the discs of the device. TTE images did not depict definite left to right shunts at 1,3,6,12 months in all 29 pts, but in 7 pts shunting by TTE was equivocal.

Saline contrast echocardiography with the Valsalva maneuver revealed right to left shunting in 14 out of 29 pts, one year following device placement (48%). Two years following device placement the repeat saline contrast echocardiography with the Valsalva maneuver showed no residual right to left shunting in 10 out of the 14 pts with positive contrast echo at one-year follow-up (76%).

Conclusion: Spontaneous closure of small residual atrial communications may occur even after the usual one-year follow-up, after device closure. Endothelization of the device results in elimination of shunting across the atrial septum and may expand beyond the actual borders of the device, causing spontaneous closure of small residual communications in the adjacent aneurysmal tissues at various periods of time after the initial procedure. Placement of an additional device should probably be postponed for at least another year, until repeat saline contrast echocardiography is performed.