

IMAGES IN INTERVENTION

Transcatheter Left Atrial Appendage Closure After Incomplete Surgical Ligation

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An 82-year-old woman with chronic atrial fibrillation on full anticoagulation with warfarin was referred for a repeat attempt to close the left atrial appendage (LAA) with a transcatheter, transseptal approach. In April 2011, she underwent surgical mitral and tricuspid repair, ligation of the LAA, and unsuccessful MAZE procedure. A subsequent transesophageal echocardiogram

(TEE) demonstrated residual communication (asterisk and white arrow) between the left atrium and LAA by pulsed and color flow Doppler (Figs. 1A, 1B).

Following successful transseptal puncture under general anesthesia and TEE guidance, the baseline LAA angiogram was performed (Fig. 2A). Given its nonthrombogenic property and the sufficient

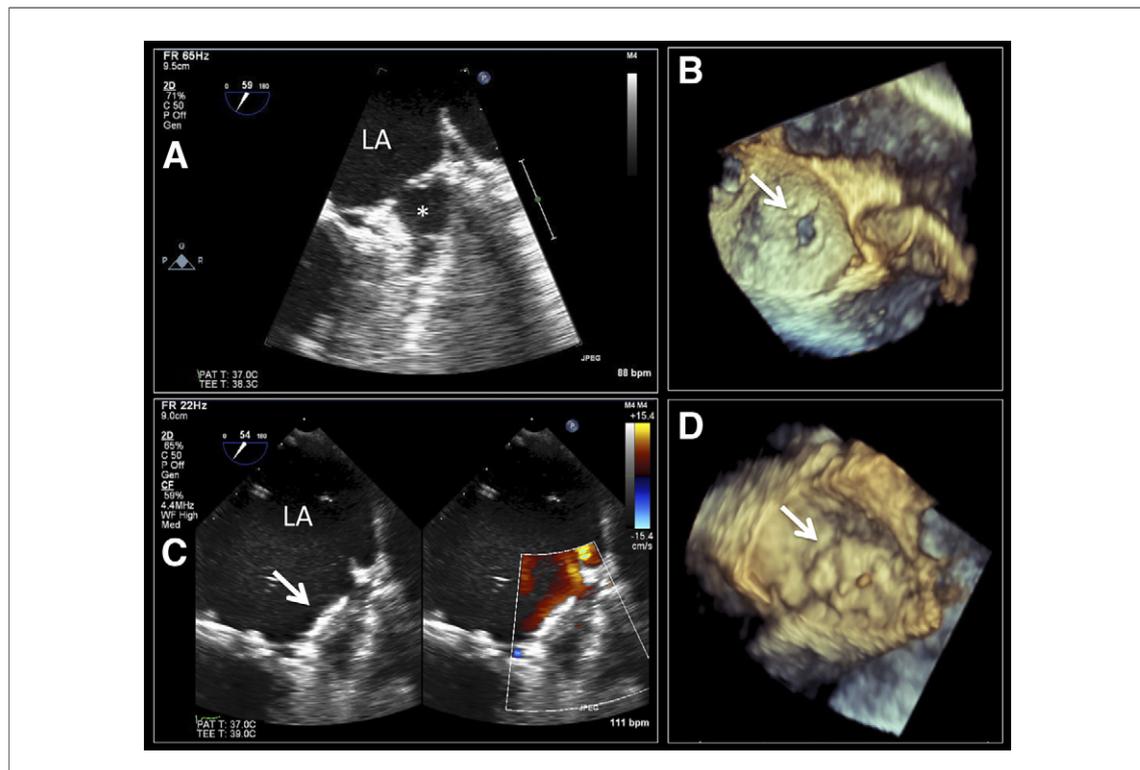


Figure 1. 2D and 3D TEE Images of LAA and Gore Helex Septal Occluder

Baseline study (a and b) showed the residual communication between the left atrial appendage (LAA) and left atrium (*, white arrow). Post device deployment, (c and d) no residual flow was seen across the device (arrow) and the device was well-seated (arrow).

From the Heart Institute, Cedars-Sinai Medical Center, Los Angeles, California. Dr. Kar has reported that he has received research grants from Boston Scientific, Gore Medical, and St. Jude Medical, as well as honoraria from Boston Scientific Gore Medical. All other authors have reported that they have no relationships relevant to the contents of this paper to disclose.

Manuscript received September 14, 2012, accepted September 28, 2012.

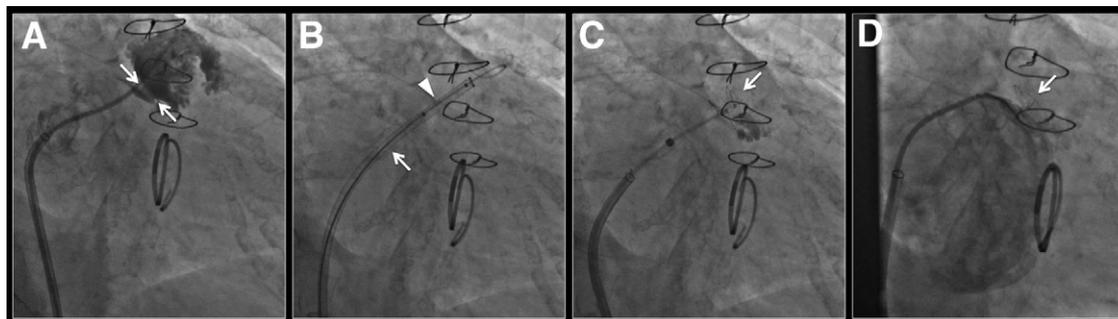


Figure 2. Cine-angiogram of LAA Closure

(A) The left atrial appendage (LAA) with rim (arrow). (B) The 10-French long sheath (arrow) advanced into the LAA with support of the balloon (arrowhead). (C) The 15-mm Gore Helex Septal Occluder deployed across the LAA ostium (arrow). (D) Final angiogram showing no residual flow across the device (arrow).

LAA ostium rim, the Gore Helex Septal Occluder (W. L. Gore and Associates, Newark, Delaware) was used. The 15-mm occluder device was selected as the diameter of residual LAA ostium communication was 7 mm.

Following dilation of the septal puncture site using an 8.0- \times 20-mm balloon catheter, the 10-F long Arrow sheath (Arrow International, Reading, Pennsylvania) was introduced into the left atrium. To place the 8-F occluder deployment system, the 10-F sheath was further advanced into the LAA over the deflating balloon catheter that was positioned in the LAA (Fig. 2B). The deployment system was then advanced into the LAA through the 10-F sheath. The occluder device was deployed successfully (Fig. 2C). The final angiogram and TEE showed a well-seated occluder device, with no residual flow, that completely closed the LAA ostium (Figs. 1C and 1D).

This is the first report of LAA closure using the Gore Helex Septal Occluder. Unfortunately, surgical LAA ligation is frequently incomplete (77%). Moreover, 41% of patients with unsuccessful surgical closure have LAA

thrombus, which puts patients at an increased risk for systemic embolism and stroke (1). Our case demonstrates that the residual communication secondary to incomplete surgical ligation can be closed percutaneously to reduce the risk of thromboembolism and stroke.

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Key Words: left atrium appendage ■ surgical ligation ■ transcatheter closure.