TRANSSEPTAL CLOSURE OF LEFT VENTRICULAR PSEUDOANEURYSM POST-TRANSAPICAL TRANSCATHETER AORTIC VALVE REPLACEMENT

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An 81-year-old woman presented for a scheduled 1-month follow-up after an uneventful valve-in-valve transapical transcatheter aortic valve replacement (TA-TAVR) using a 23-mm Sapien XT prosthesis (Edwards Lifesciences, Irvine, California). Although the patient remained asymptomatic after discharge, a transthoracic echocardiogram revealed a left ventricular (LV) pseudoaneurysm, with a 10-mm neck, at the location of the transapical access site (Figure 1A, Online Video 1). Subsequent heart team discussion led to the decision to proceed with percutaneous closure via an antegrade transseptal approach. The procedure was performed under general anesthesia and transesophageal echocardiographic guidance. Following transseptal puncture, an 8-F Mullins sheath was further advanced into the LV through the mitral valve with a support of a 6-F balloon floating catheter, and then an initial LV
angiogram was performed (Figure 2A). A 6-F multipurpose catheter was manipulated into the pseudoaneurysm; the catheter was then exchanged for an 80-cm 8-F Amplatzer TorqVue sheath (St. Jude Medical, Minneapolis, Minnesota). On the basis of echocardiographic and balloon-sizing measurement, a 12-mm Muscular ventricular septal defect occluder (St. Jude Medical) was prepared in standard fashion and deployed successfully (Figures 2B and 2C). The final angiogram showed a well-seated device without significant shunt (Figure 2D). At discharge (post-operative day 2), a transthoracic echocardiogram showed the occluder device completely sealing the pseudoaneurysm (Figure 1B, Online Video 2).

LV pseudoaneurysm is a rare but serious complication after TA-TAVR (1). Percutaneous pseudoaneurysm closure after TA-TAVR via a retrograde transfemoral approach was previously reported (2), but this technique has some concerns, including the long access route to the LV apex and potential risk of valve injury. By contrast, the antegrade transseptal approach provides an appropriate access route, allowing the usage of a standard delivery system for the occluder device, and eliminates the risk of damaging the implanted valve. Therefore, it is suggested that the present technique be considered as the first-line option for LV pseudoaneurysm closure after TA-TAVR.

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**REFERENCES**


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