Snare-Assisted Repositioning of a Migrated TAVR Valve and Repeat TAVR: 45-Month Follow-Up

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Background

Valve embolization or migration occurred in 0.92% of TAVR procedures in the TRAVEL registry.[1]

Long-term evidence for valves retained in the ascending aorta remains limited.[2]

Case presentation

An 87-year-old woman presented with progressive exertional dyspnea and severe aortic stenosis. Her history included atrial fibrillation on apixaban and chronic diastolic heart failure.

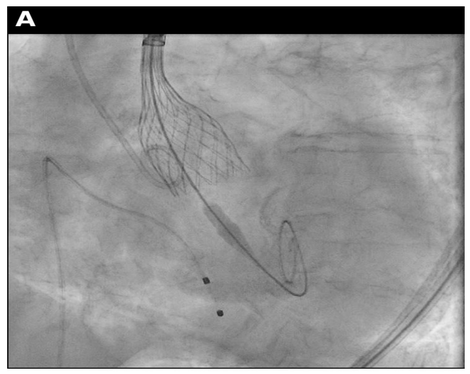
Vmax 5.0 m/s; mean gradient 58 mm Hg
Valve area 0.92 cm²; LVEF 65–70%
CT annular area 310.9 mm²
LVOT calcification; basal septum ≈2.3 cm

Complication and rescue

1. After complete valve release, the delivery nose cone engaged the inflow frame during withdrawal. Cranial displacement caused acute aortic regurgitation.
2. A 25-mm Goose Neck snare repositioned the valve in the ascending aorta below the brachiocephalic artery origin.
3. A second 26-mm Evolut PRO+ valve restored annular competence. Its frame overlapped the retained valve and compressed its leaflets.

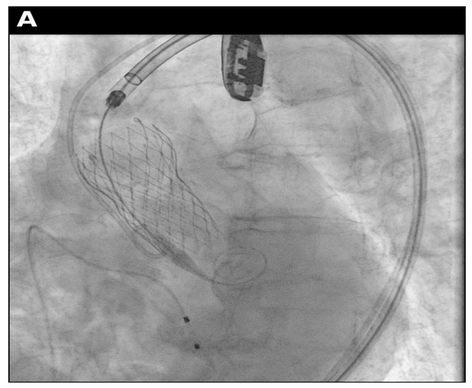
Procedural imaging

1 Initial deployment



First 26-mm valve at the native annulus.

2 Cranial migration



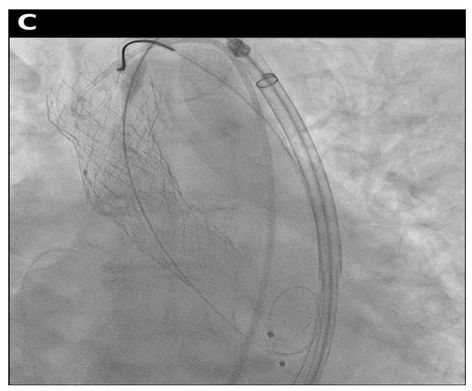
Displaced prosthesis during delivery-system withdrawal.

3 Snare repositioning



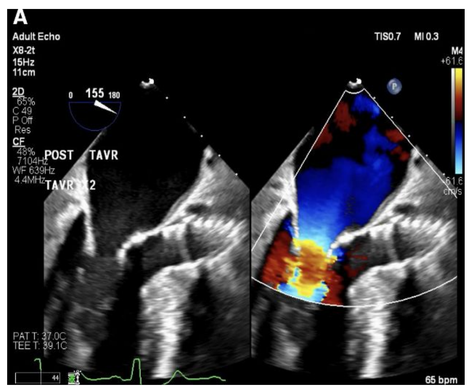
Snare control holds the first valve in the ascending aorta.

4 Second-valve overlap



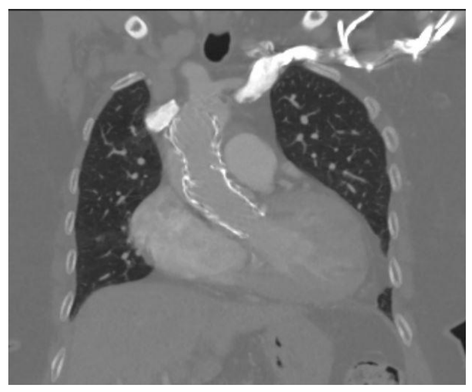
Annular valve deployment with overlapping frames.

5 Final TEE assessment



Final TEE showed no significant aortic regurgitation or paravalvular leak.

6 Next-day CT



Overlapping frames without dissection or great-vessel obstruction.

Outcome and follow-up

Table 1. Selected echocardiographic follow-up

Follow-up	Mean gradient (mm Hg)	LVEF (%)
1 day	10	70
6 months	10	65–70
12 months	9	>70
27 months	10	>70
45 months	Not reported	60–65

Adapted from manuscript Table 1. The 45-month study reported normal valve function without a numeric gradient.

At 45 months, the patient remained asymptomatic with normal annular-valve function.

No recurrent migration, stroke, thromboembolism, or aortic/arch-vessel complication was reported. Apixaban continued for atrial fibrillation.

Discussion

Delivery-system withdrawal remains a vulnerable step after complete valve release.

Frame overlap compressed the retained leaflets in this case. Whether this prevents late complications is unknown.

Surveillance should assess valve hemodynamics and retained-frame integrity, with selective CT imaging.[2]

Conclusion

Snare repositioning and repeat TAVR achieved stable valve function through 45 months without emergency surgery in this patient. Continued surveillance should assess both the annular prosthesis and the retained ascending-aortic frame.

References

1. Kim WK, et al. Incidence and outcome of peri-procedural transcatheter heart valve embolization and migration: the TRAVEL registry. Eur Heart J. 2019;40:3156–3165. doi:10.1093/eurheartj/ehz429

2. Frumkin D, et al. Valve embolization during transcatheter aortic valve implantation: Incidence, risk factors and follow-up by computed tomography. Front Cardiovasc Med. 2022;9:928740. doi:10.3389/fcvm.2022.928740

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