

An Uncommon Complication During Trans-Aortic Valve Replacement

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Published In/Presented At

Nair, S., Nawaz, Y., Patel, N., Cox, D., Combs, W., Singer, R., & Kleaveland, P. (2014, June 23-27). *An uncommon complication during trans-aortic valve replacement*. Poster presented at: The 10th annual Complex Cardiovascular Catheter Therapeutics: Advanced Endovascular and Coronary Intervention Global Summit, Orlando, FL.

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BACKGROUND

- Trans-aortic valve replacement (TAVR) is an alternative method of therapy for severe aortic stenosis in patients who are deemed at high risk for conventional aortic valve replacement.
- However, although minimally invasive, TAVR procedure is not free of complications.

OBJECTIVE

- We report a case of aortic embolization of the TAVR valve successfully managed by capture and deployment of the embolized valve in the descending aorta.

CASE REPORT

- 85 year old male with history of coronary artery disease status post-PCI and severe aortic stenosis underwent TAVR via the femoral arterial approach with rapid cardiac pacing performed at the time of implantation.
- Initial balloon aortic valvuloplasty with a 23 mm balloon was performed. Thereafter a 26 mm Edwards-Sapien bio- prosthetic aortic valve was brought into place at the aortic annulus for placement (Figures 1 & 2).
- During the placement procedure, the valve embolized into the ascending aorta (Figure 3) when a fusion beat occurred (increase in pulse pressure) (Figure 4) in the midst of rapid cardiac pacing.

IMAGING

Figure 1



Figure 2

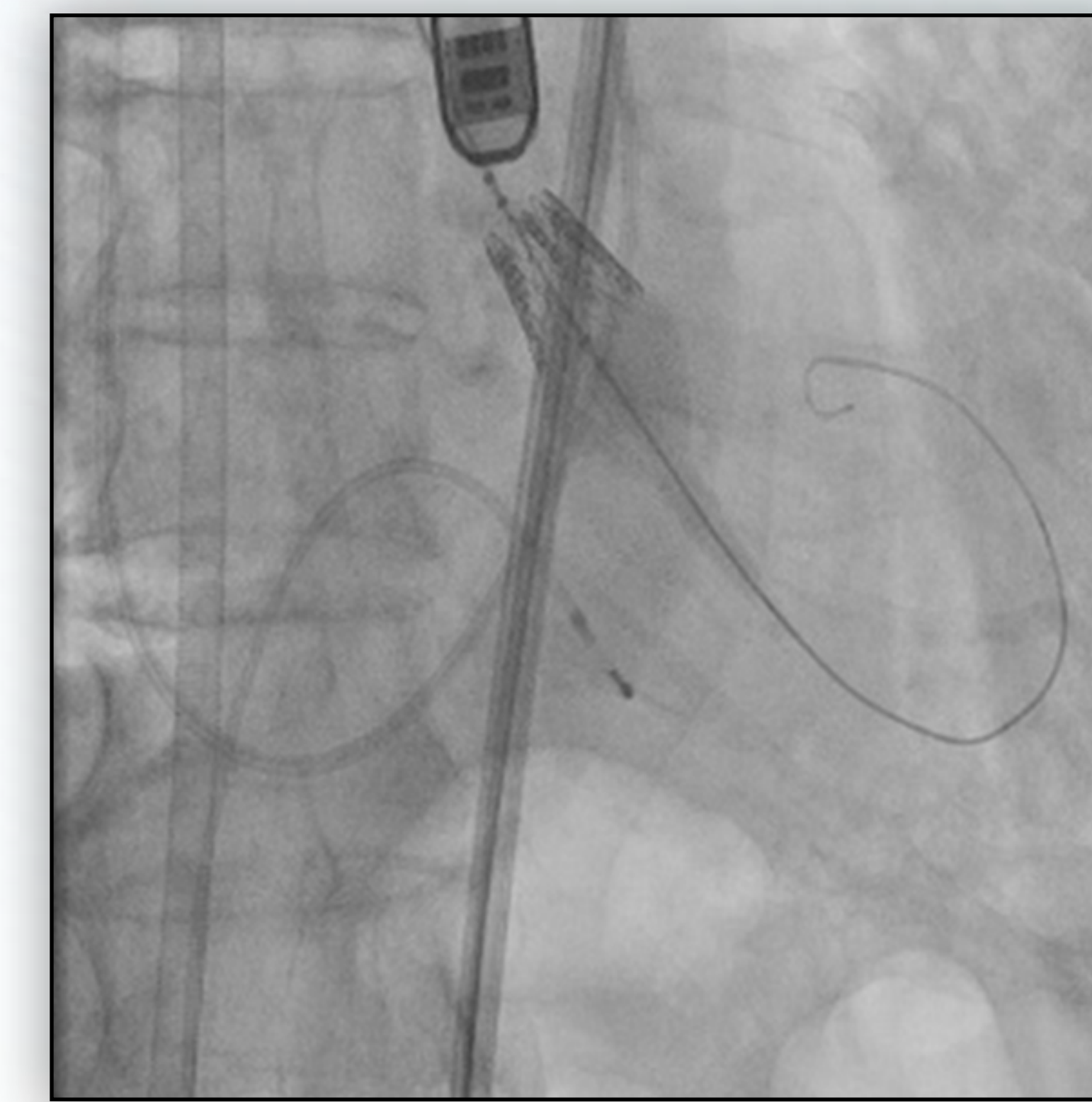


Figure 3

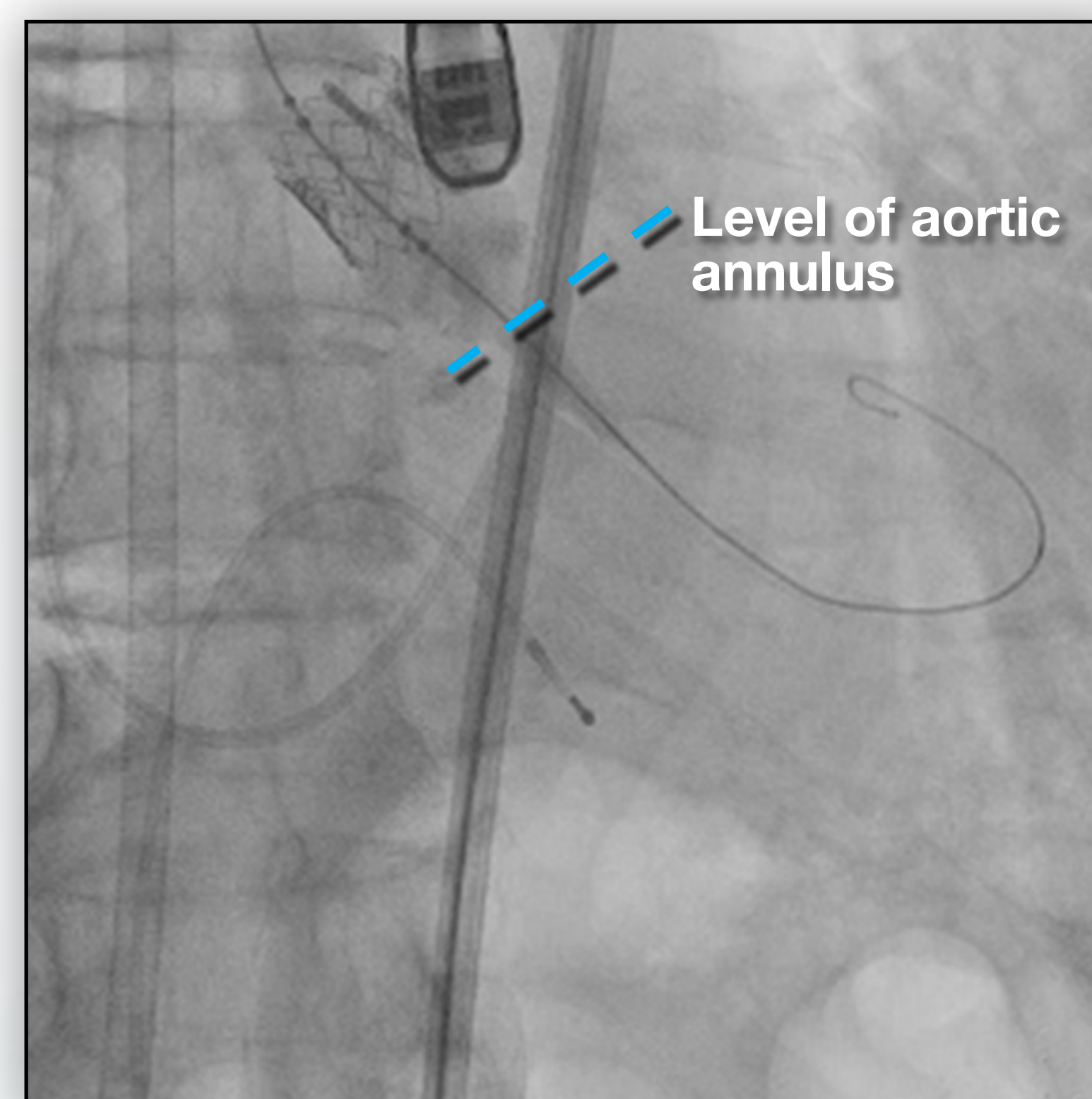


Figure 4

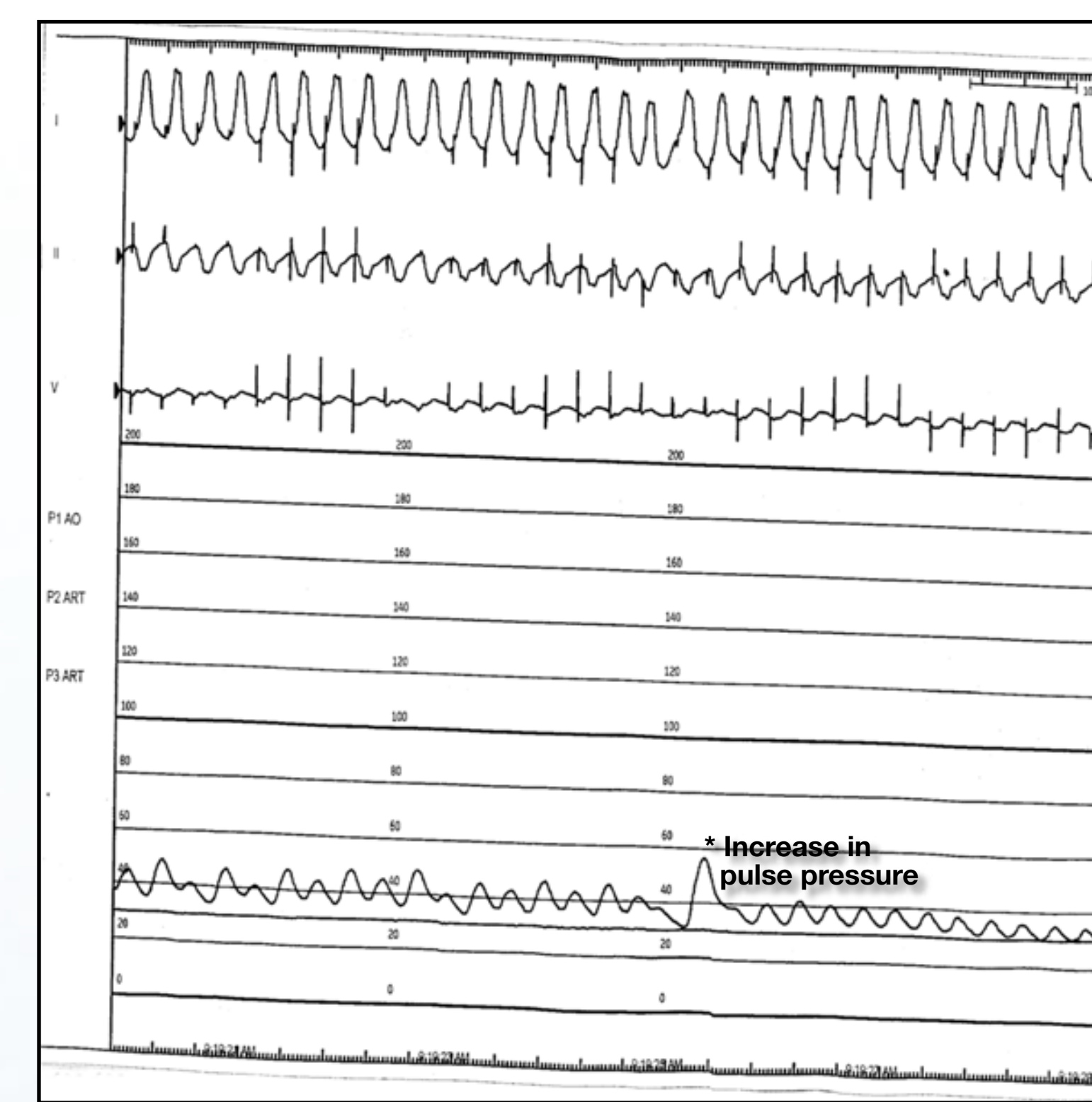


Figure 5



Figure 6



CASE REPORT (Continued)

- The embolized valve was captured, pulled back and deployed in the descending aorta using balloon inflation (Figure 5).
- Thereafter a second 26 mm Edwards-Sapien bio-prosthetic aortic valve was inserted via the initial fully deployed TAVR valve and successfully placed at the aortic annulus (Figure 6).

DISCUSSION

- Published incidence of TAVR valve embolization ranges from 0.5% to 8%.
- Common causes for TAVR valve embolization during implantation are:
 - Placing the valve too aortic.
 - Replacement valve not co-axial to valve plane.
 - Loss of capture during pacing.
 - Inadequate reduction in pulse pressure during pacing.
 - Premature termination of pacing.

CONCLUSIONS

- Although minimally invasive, the TAVR procedure can have complications, some of which are devastating.
- However, with diligent management many of these can be avoided or mitigated.

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