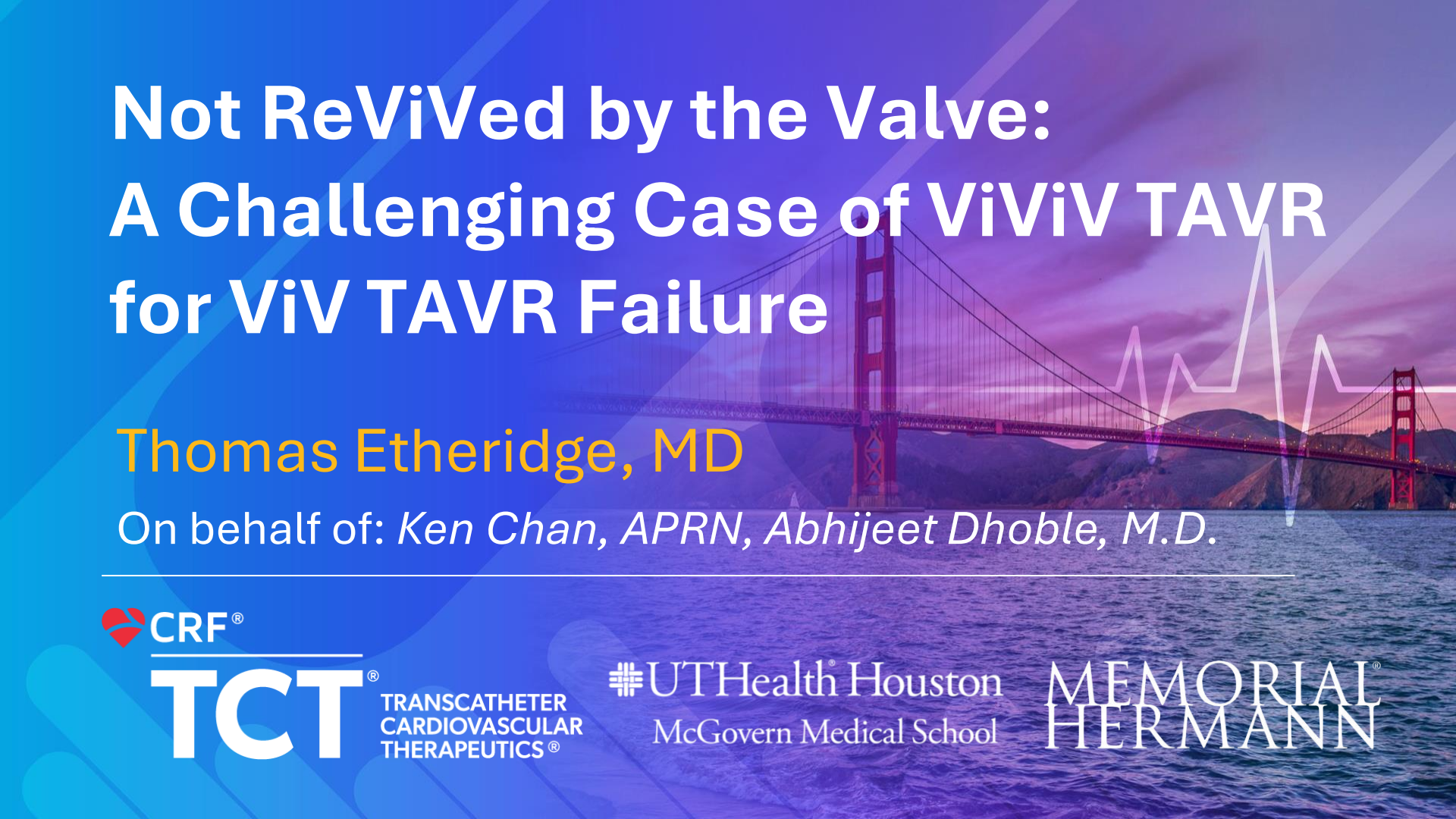
Not ReViVed by the Valve: A Challenging Case of ViViV TAVR for ViV TAVR Failure

Thomas Etheridge, MD

On behalf of: *Ken Chan, APRN, Abhijeet Dhoble, M.D.*



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Disclosure of Relevant Financial Relationships

I, Thomas Etheridge DO NOT have any financial relationships to disclose.

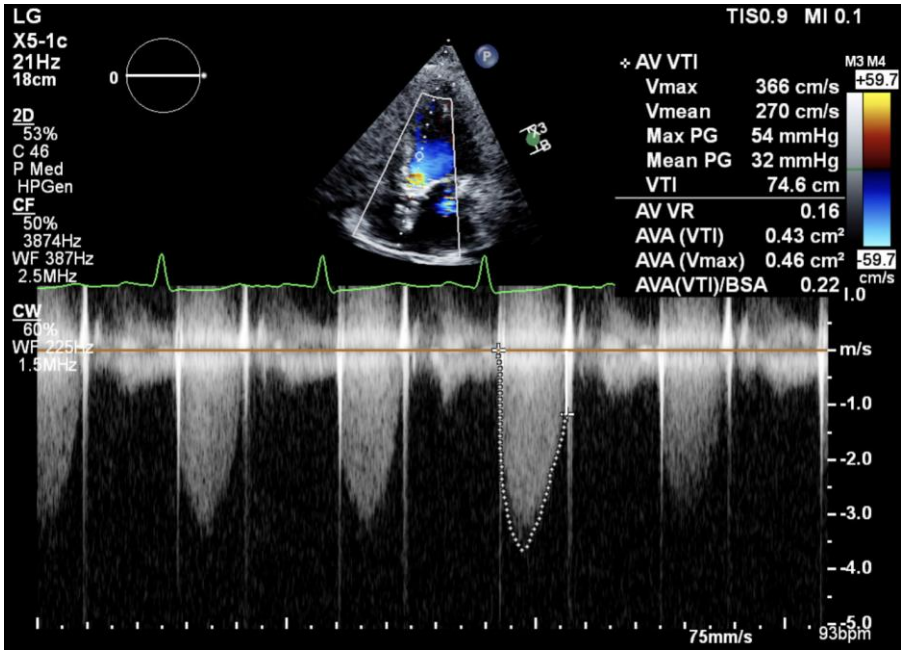
Patient History

- 68F pmh non-hodgkin lymphoma treated in-part with total body radiation (1999) presents with progressive shortness of breath.
- OSH SAVR (2017): Epic 21mm bioprosthetic valve for severe AS suspected secondary to radiation therapy. Severe PPM on intra-op TEE. Post-op TTE EOAi 0.45 cm^2/m^2.
- Evaluated at our institution (2020) for stenosis of surgical valve. Deemed high output state due to anemia, mn grad 32 mmHg, AVA 1.66, no intervention.
- OSH TAVR (2020): Edwards SAPIEN 3 ultra 23mm

Patient History - Recent Developments

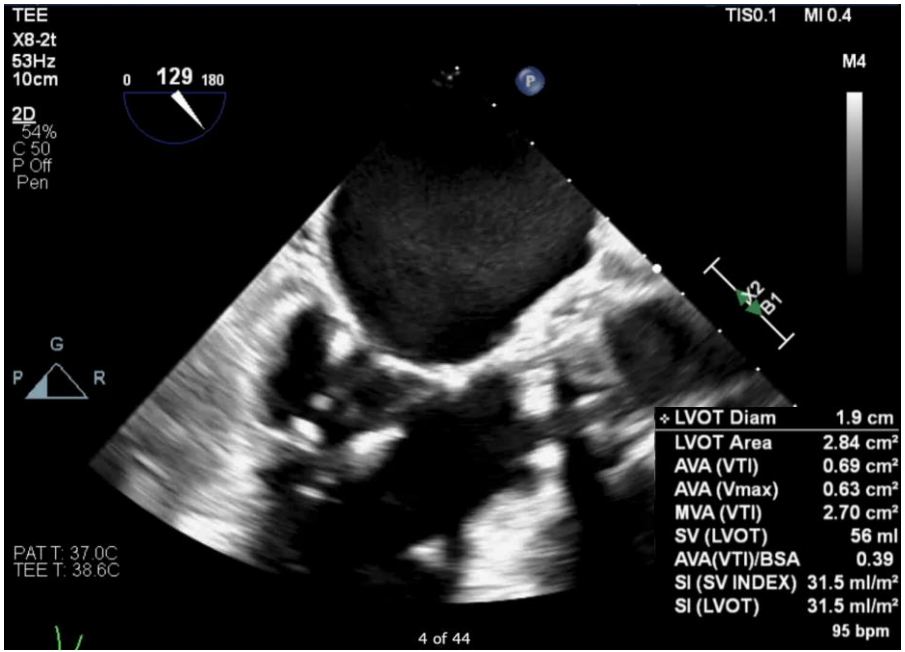
- Diagnosed with rectal adenocarcinoma 11/2024.
- Developed *Strep. viridans* MV and AV endocarditis 12/2024. Treated with 6 weeks of antibiotics.
- Found to have persistent vegetation on AV 3/2025 and new perivalvular abscess. Resumed broadened antibiotic regimen.
- Presented to us on week 3 of this new regimen.

TTE on Arrival



- EF 20-25%
- DVI 0.21
- AV mn grad 32 mmHg
- AV pk vel 3.66 m/s
- AVA 0.43 cm^2

TEE Valve Evaluation

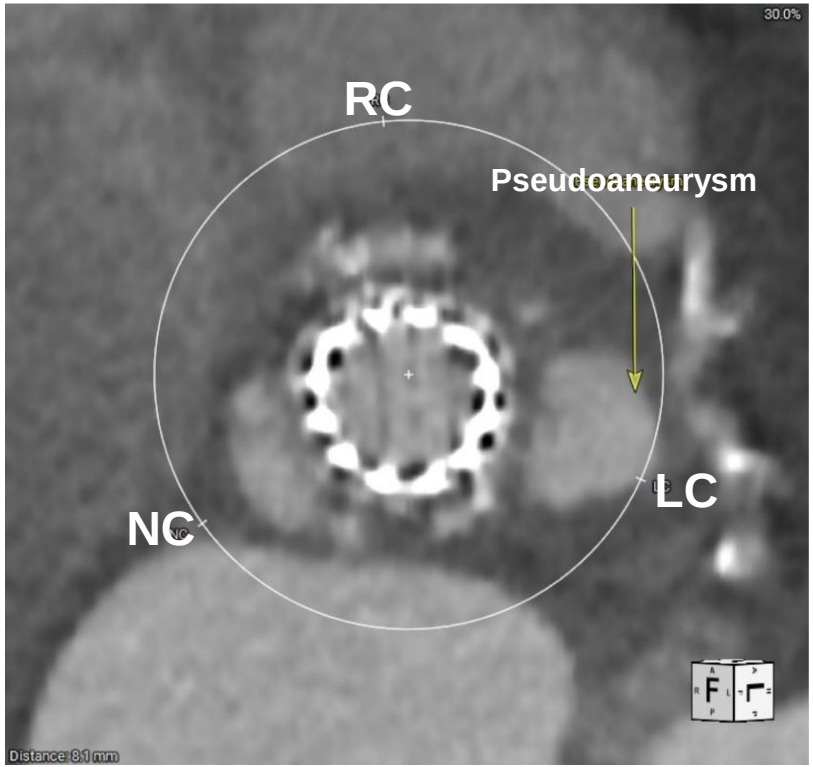


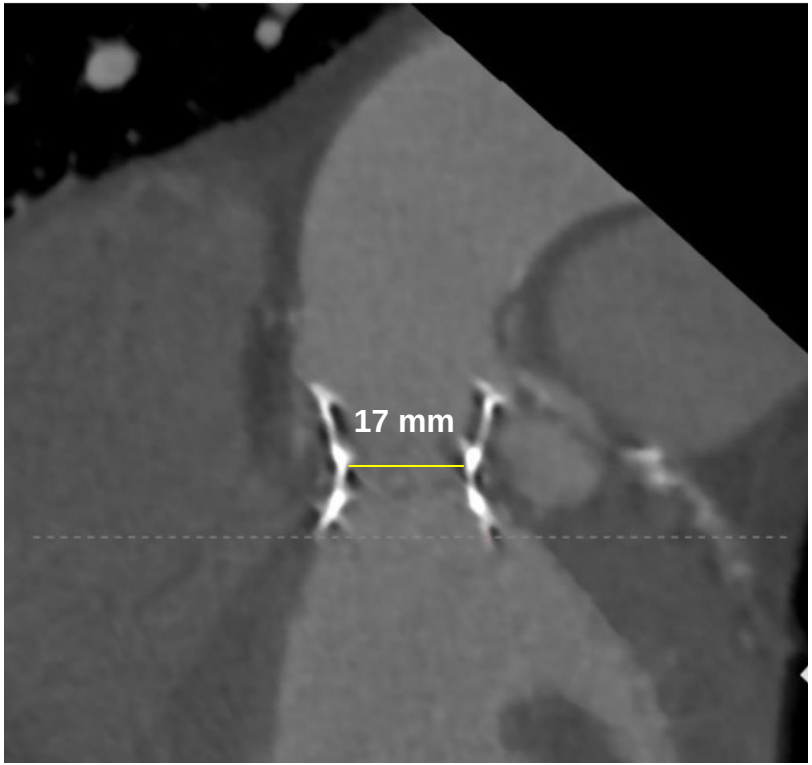
- No paravalvular regurgitation
- AV mn grad 32 mm Hg
- AV pk vel 3.71 m/s
- AVA 0.69 cm^2

Pre-Procedural Considerations

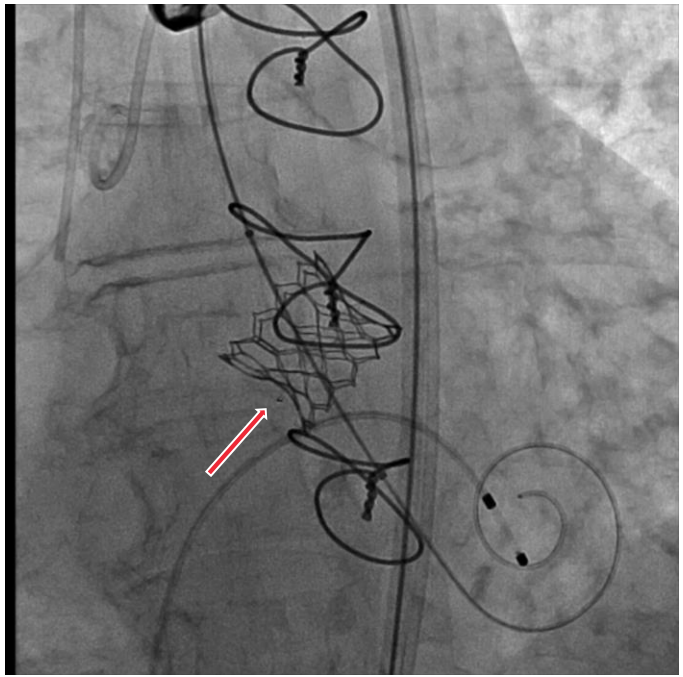
- Rectal adenocarcinoma:
- CT surgery:
- Endocarditis?:

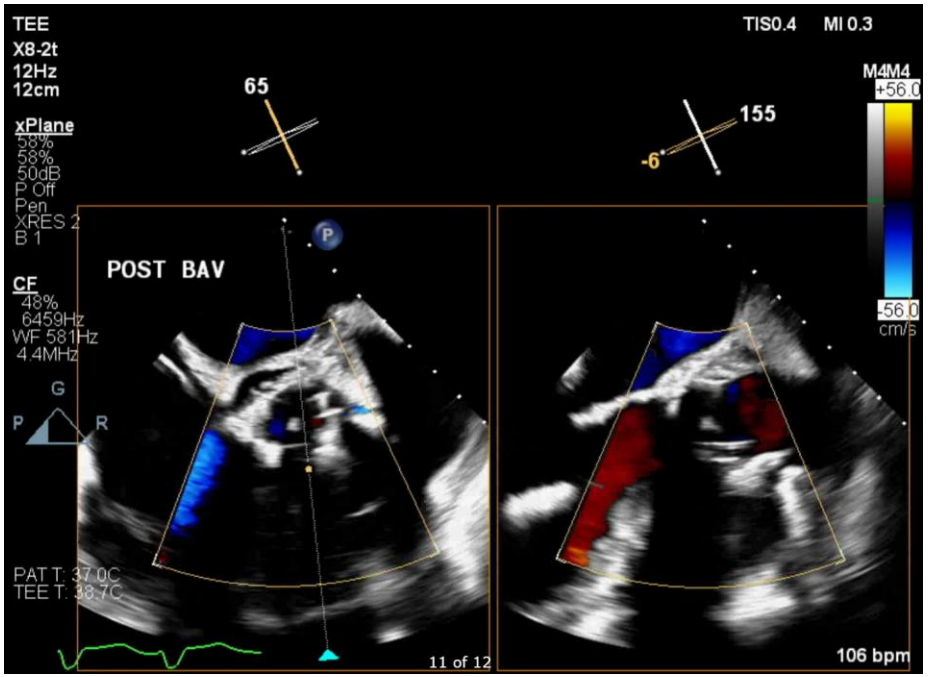
CT TAVR





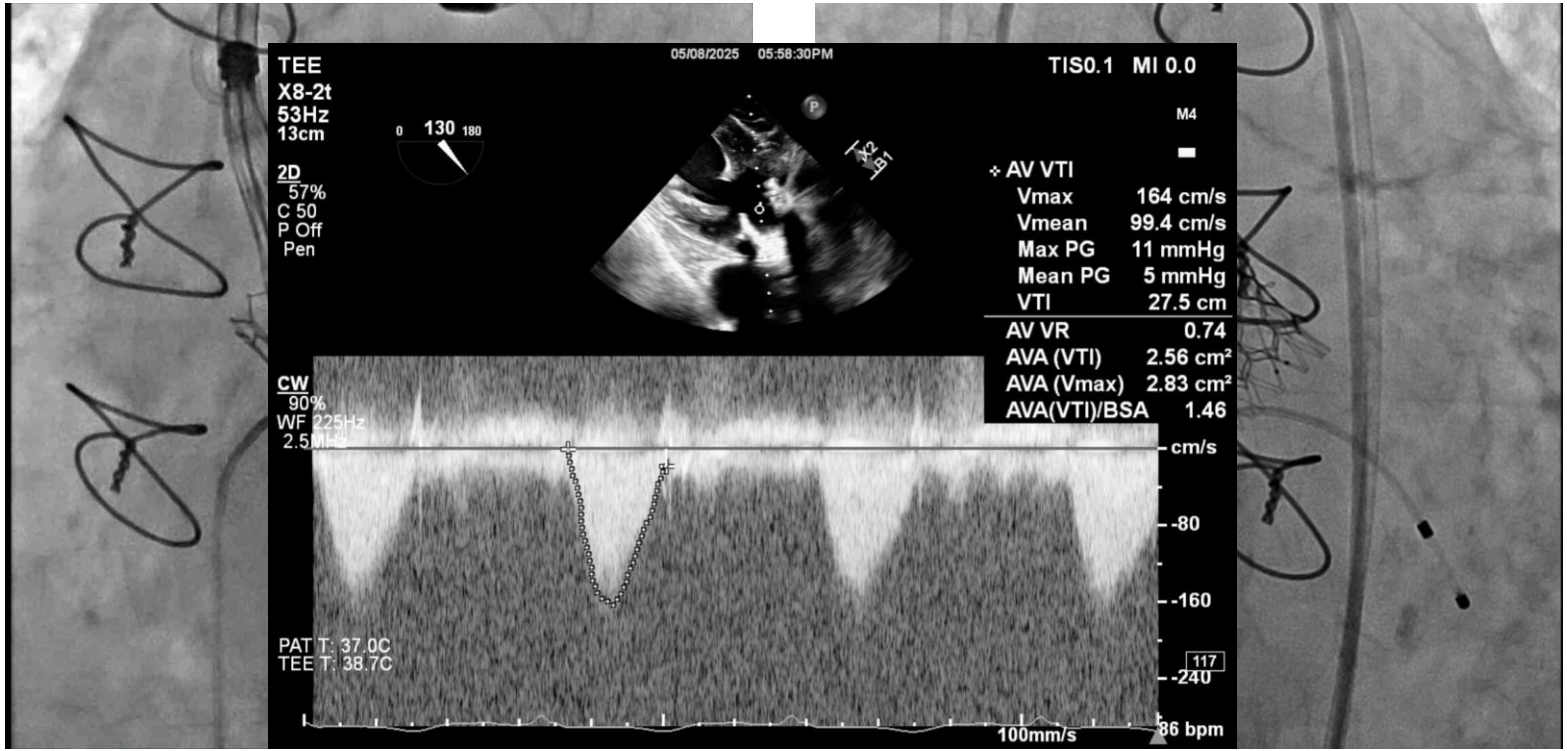
Balloon Valvuloplasty





22 mm True balloon at 12 atm

ViViV TAVR


TEE
X8-2t
53Hz
13cm
2D
57%
C 50
P Off
Pen
05/08/2025 05:58:30PM
TIS0.1 MI 0.0
M4
AV VTI
Vmax 164 cm/s
Vmean 99.4 cm/s
Max PG 11 mmHg
Mean PG 5 mmHg
VTI 27.5 cm
AV VR 0.74
AVA (VTI) 2.56 cm²
AVA (Vmax) 2.83 cm²
AVA(VTI)/BSA 1.46
CW
90%
WF 225Hz
2.5MHz
cm/s
-80
-160
117
-240
PAT T: 37.0C
TEE T: 38.7C
100mm/s
86 bpm

Challenges and Complications

Pre-Op Considerations

- Multiple aortic valvular interventions with past SAVR showing severe PPM and now severely under-expanded ViV TAVR.
- Recent infectious endocarditis without completion of therapy.
- Procedural time sensitivity as prerequisite for chemotherapy initiation and surgical excision.
- Left SOV cusp pseudoaneurysm secondary to perivalvular abscess.

Intra-Op Course

- Balloon valvuloplasty with prolonged inflation time due to multiple past valves and difficult anatomy.
- Severe aortic regurgitation following valvuloplasty requiring ViViV TAVR.
- Brief intraoperative hypotension and hemodynamic instability – managed with pacing at 120 bpm and brief CPR.

Outcome & What We've Learned

- Patient underwent successful ViViV TAVR with 26mm EVOLUTE FX+ and was discharged on POD 8. Actively undergoing cancer treatment and has had no rehospitalizations 5 months later.
- ViV has been shown to have significant benefit to patients with failed bioprosthetic surgical valves.
- ViV TAVR should be used judiciously as patient being considered are generally of high risk and reintervention options are limited.
- ViViV TAVR is a viable option for intervention upon ViV TAVR failure.

Acknowledgements

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