Transcatheter Management of Failed Bioprosthetic Mitral Valve

Gagan D. Singh M.D.

Division of Cardiovascular Medicine
UC Davis Medical Center
Sacramento CA
Case Presentation

- 67 year old female with a history of rheumatic fever / heart disease referred for Valve-in-Valve Transcatheter MV Replacement

  - 8 yrs ago - symptomatic MV stenosis and pulmonary HTN, underwent MV Replacement with a 29mm Edwards Life Sciences Perimount Bovine Pericardial Valve
    - Post-op course complicated by CVA (Stroke)

  - 6 yrs ago—Atrial Fibrillation
    - Sick Sinus Syndrome s/p pacemaker, 2 additional CVAs

  - 4 yrs ago, first admission for CHF from degenerated bioprosthetic mitral valve
Case Presentation

- Other comorbidities:
  - CRI Stage III
  - NYHA III
  - Frail
  - BMI 18
  - FEV1 0.86
  - Chronic Anemia
  - Prior CVAs
  - Parox AFib
  - STS 12.2% Mortality

- Pertinent Meds:
  - Amiodarone 200 mg daily
  - Furosemide 40 mg twice daily
  - Losartan 25 mg daily
  - Metoprolol Succinate 50mg daily
  - Warfarin
Case Presentation

LA Volume – Indexed
Normal = 22 ± 6 ml/m²
Severe > 40 ml/m²

160 ml/m²
Pertinent TEE Findings:

- Severe bioprosthetic MR with leaflet degeneration and prolapse
- Moderate-severe paravalvular mitral regurgitation
- Preserved LV systolic Function
- RVSP 75-80 mmHg
Heart Team Assessment

- Extreme risk for redo open MVR
- Comorbidities do not preclude the expected benefit from MR reduction
- So can we place a new valve inside her old valve?
  - Yes = Valve in Valve TMVR
- How?
**Perimount Valve Size**

**Perimount, 29**

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
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<tbody>
<tr>
<td>Stent Internal Diameter</td>
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<tr>
<td>True ID</td>
<td>27</td>
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<tr>
<td>Height</td>
<td>19</td>
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**Suggested TAVI Valve Size**

<table>
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<tr>
<th>Sapien Size</th>
<th>29</th>
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Heart Team Assessment - Approach
TA Paravalvular Leak Closure

8mm AVP II x2

8 Fr
Post TA Paravalvular Leak Closure

Trace Residual PVL
Transseptal Valve-In-Valve MVR (1)

35mm Gooseneck Snare

12 x 40
Transseptal Valve-In-Valve MVR (2)

29mm Edwards Sapien XT deployed under rapid pacing
Two 8mm Amplatzer Vasc Plugs II
Features of this Case/Summary

- Use of hybrid TA-TS approach for complete transcatheter reduction of mitral regurgitation.
  - Paravalvular leak closure prior to Valve-In-Valve TMVR
- Significant residual iatrogenic ASD after valve delivery requiring closure
- Patient had significant improvement in MR severity and functional class with transcatheter therapies.
...on behalf of the UCD Heart Team

- Reginald Low MD
- Jason Rogers MD
- Jeffrey Southard MD
- Garrett Wong MD
- Femi Philip MD
- Doug Boyd MD
- Zane Atkins MD
- Thomas Smith MD
- Dali Fan MD
- Kori Harder RN
- Janine Neely RN
- Janine Carslon RN
- Allison Carrol RN
- Ben Claridad RN
- Cath lab and OR45 staff
- Cardiac ICU and Telemetry RNs