A 58 yo Firefighter with Recent Orthopnea

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Conflicts of interest: GE, Abbott, Edwards (honoraria)
Anything Wrong Here???
History
58 yo Man with Orthopnea

- History:
  VSD repair in childhood w/ “limited” follow-up
  No problems with work as fireman until 1 month before
  3-pillow orthopnea + edema but little DOE
- Meds: Multivitamin
- PE: Afeb, BP 130/60, HR 80 reg, 98% (RA), CVP~8, clear lungs, S1/S2 w/ 3/6 SEM, 2/4 decrescendo dias murmur, 2+ edema, bounding carotids, pulsating uvula, Quincke’s pulses

BNP: 1455
Troponin I: 0.04 → 0.05 → 0.05
EKG

58 yo Man with Orthopnea
Transthoracic Echo

58 yo Man with Orthopnea

Whoa!!!
9.3 cm ascending aorta with severe AR
- Dilated and dysfunctional LV
- Indeterminate AV morphology
- Severe AR
Marked flow reversal w/ ?coarct
Let’s Get a Better Look at the Aorta

Massive ascending and descending aneurysms + coarctation
Type B dissection

Severe coarctation
Magnetic Resonance Imaging

Coronal cuts (front to back)   Sagittal cuts (right to left)
LV EDV/ESV/SV/EF: 451 mL, 323 mL, 128 mL, 28%
AV RV/RF/ROA: 103 mL, 80%, 0.89 cm²
No Significant Coronary Disease

Dominant LCA  Small RCA
- LVEDP: 32 mmHg
- DBP: 48 mmHg
- AV gradient: 13 mmHg
What’s the likelihood of BAV??

A. 10%
B. 50%
C. 90%
D. Who knows???
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A. 10%
B. 50%
C. 90%
D. Who knows???
What to do??

A. TAVR
B. EVAR
C. Comprehensive surgery
D. Two-stage surgery
What to do??

A. TAVR
B. EVAR
C. Comprehensive surgery
D. Two-stage surgery
Intraoperative Echo

- Trileaflet AV
- Severe AR
- Aneurysms, coarctation and dissection as we knew
Post-pump Echo

- Modified Bentall operation
  - #29mm C-E pericardial valve
  - #36mm Dacron graft
Post-op course:

Overall smooth, with one episode of A-flutter
Meds: Metoprolol, lisinopril, atorvastatin, ASA, lasix
Discharged on POD#7
Coronal cuts (front to back)

Sagittal cuts (right to left)
POD#4 MRI 4D Flow

LV EDV/ESV/SV/EF: 301 mL, 216 mL, 85 mL, 28%
AV RV/RF/ROA: 0 mL, 0%, 0.0 cm²
6 Weeks Later

Back to Deal with the Descending Aorta
Repair of Coarctation/Aneurysm/Dissection with 28mm Dacron Graft from LCA to Diaphragm
# Dramatic LV Remodeling

*Results from Serial MRI*

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Pre-op</th>
<th>POD#4</th>
<th>POD#49</th>
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<tbody>
<tr>
<td>LVEDV</td>
<td>451 mL</td>
<td>301 mL</td>
<td>216 mL</td>
</tr>
<tr>
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<tr>
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<tr>
<td>LV forward EF</td>
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<tr>
<td>LV mass</td>
<td>320 g</td>
<td>310 g</td>
<td>217 g</td>
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