Severe Aortic Valve Disease – TAVR in 4 Ages and Etiologies

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No disclosures
Case 1

- 22 y/o woman presents with aortic stenosis. She was born with a heart murmur and had a valvotomy at 12 y/o. She has retrospectively had mild Class II symptoms of shortness of breath. She was recently been married and now wants to have a child.
Case 1

Carotid – no parvus 3+ tardus
Thrill suprasternal notch

EC 4/6 RUSB

S1 S2
Bicuspid valve
LVO diameter 2.0 cm
Mean gradient 58 mmHg
AVA 0.5 cm²
Case 1

• Would you let her get pregnant
• Any further testing?
• Any intervention?
Case 1

- TMET
  - Went 4.5 minutes (45% FAC)
  - Developed fatigue and SOB
  - HR 88 to 166
  - BP 104/88 to 120/82
  - 1 mm ST depression
AV gradient
Pre
130 mmHg

AV gradient
Pre
40 mmHg
Case 2

• 55 y/o man – active paramedic – presents with DOE x 6 months
• No prior cardiac hx – brother has heart murmur
• Comes for evaluation of new heart murmur
Case 2

Carotid – 2+ parvus 4+ tardus
LV sustained

S1 S2
S4 3/6 RUSB
Mean 43 mmHg
AVA 0.8 cm²
Case 2

• Any further testing?
• Any intervention?
Case 2
Case 3

- 73 y/o PhD attorney – still active teaching
  - Jogs 2 miles per day
  - Followed for heart murmur x 10 years
- Mild HTN on calcium blocker – no other problem
- Remote history RF as teenager
- STS risk score 2.8
Case 3

Carotid – 3+ parvus 3+ tardus
LV sustained

S4
3/6
RUSB

S1 S2
Mean gradient 50 mmHg
AVA 0.8 cm²
Calcified AV
LVO diam 2.0 cm
EF 66%
Case 3

• Any further testing?
• Any intervention?
VO2 22.2 ml.kg.m
98% FAC

BP Response: Rest: 114/80 Peak: 120/60 3-minutes Post: 128/62 Peak DP: 19200

Reason for Termination: 1) Symptom limited
Symptoms: 1) Dyspnea 2) Fatigue 3) CNS changes 4) Typical angina
Abnormal Signs: 1) PAC LT 5/min 2) ST depression GT or equal to 2mm

Exercise ECG: Positive
- Ischemic HR: 160
- Ischemic Phase: Exercise
- Ischemic Time: 8.5 Minutes
- Number Leads Positive: 6
- Maximum ST Deviation: -0.0 mm
- Time of Resolution: 2.0 Minutes Post
- Chest Pain Index: 1

- Peak VO2: 22.2 mL/kg/min
- Peak VO2 Predicted: 98%
- Actual METS: 6.3
- Peak RER: 1.36
- VO2 Rise: Abnormal
- O2 pulse rise: Abnormal
- Peak Ventilation: 59.4 L/min
- Breathing Reserve: 35%
- Breathing Efficiency: Normal
- VE/VO2 Nadir: 29
- O2 Saturation: Normal
- Anaerobic Threshold: 981 mL/min = 70% peak VO2
Case 4

• 96 y/o man – severe heart failure and AS
  – Healthy farmer until 6 years ago
    • Chest pain – severe CAD – 3V CABG
    • Long complicated postop course
      – ARF, respiratory support, CVA
  – Now in nursing home
    • Never recovered
Case 4

• 96 y/o man – severe heart failure and AS
  – Progressive DOE 6 months – now in Class IV CHF
  – Sent to hospital from nursing home
  – Multiple daughters and sons gathered around
  – Wheel chair bound
    • Needs help with bathing and ambulating
  – STS score 13.8
Case 4

BP 90/60
Carotid – 4+ parvus 4+ tardus
Rales both lung fields

S4 1-2/6 S3
S1 S2
Dilated LV
Multiple RWMA
EF 30%
Calcified AV
LVO TVI 16
AV Mean gradient 48 mmHg
LVO diameter 2.1 cm
AVA 0.7 cm²
Case 4

• Any further testing?
• Any intervention?