TAVI IN SPECIAL SITUATION
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Defining a Successful Procedure

- TF TAVR with percutaneous access and closure
- Successful intra-annular deployment
- None/Trace paravalvular AR
- No major vascular, major bleeding or neurologic complications
- Early mobilization
Keys to a Successful Procedure

Pre-Procedural Planning

Procedural Technique

Understanding the Device and Its Limitations

Current Generation Devices

Focus on procedure aspect

valve sizing

- Annulus rupture
- Coronary occlusion
- Pace-maker requirement
- Valve Embolization
- Para-valvular leak Grade ≥2
- Valve Dislodgment (bicuspid)
- Need for additional valve
- Procedure success

oversizing
undersizing
Current Generation Devices

Focus on procedure aspect

Inaccurate valve position / Device weakness

- Coronary occlusion
- Pace-maker requirement
- Valve Embolization
- Para-valvular leak Grade ≥2
- Valve Dislodgment

Need for additional valve: 3 - 5 %

Procedure success: < 95%

Why do we need to size correctly?

Sealing

Anchoring

Valve function

Sealing
Case 1

BIG AORTIC ANULUS

Clinical History

- 80 years old male
- Diabetic on insulin (20 years)
- Hypertensive on Bisoprolol and Amlodipine (15 years)
- AF on anticoagulation
- PVD, claudication at less than 50 meters
- COPD on chronic inhalers
- Renal impairment.
Clinical History

- He was poorly mobile due to his musculoskeletal problems
- Shortness of Breath on moderate exertion
- STS PROM: 10.87%
- Euro Score II: 14.9%

Echocardiography

AVA = 0.6 cm²
Peak/Mean = 86/41 mmHg
CT Aortic Valve

Perimeter of 99.0 mm
Area of 71.8 mm$^2$
Mean Annular Diameter
30.6 mm

CT Aortic Valve

34Evolute R valve

Annulus Range Treated (mm)
Follow up

- Smooth coarse in the hospital and discharged after 3 days.
- No conduction defects (no Pacemaker).
- TTE and TEE showed mild paravalvular leakage.
- 3 months later TTE showed mild paravalvular leakage.

Case 2
TAVR with Coronary artery disease
• Male patient aged 79 yrs old.
• He known as IHD and he did PCI to LAD 6 years ago.
• He has low flow low gradient aortic stenosis (EF 29% and with doputamine stress test the mean gradient was 46mmgh).
• He complained recurrent attacks of pulmonary edema.
• His creatinine level was 1.6mg/dl.

CT work up
Follow up

- The pt doing well for 2 years now.
- His EF is 50% now.
- His labs within normal.

CASE 2

- Male patient aged 71 ys old.
- He did CABG 10 ys ago.
- Discovered of severe aortic stenosis 2 years ago.
- He complained recurrent attacks of pulmonary edema.
- His lab is within normal.
After the procedure

- He complicated with complete heart block after 24 hours.
- TTE showed mild to moderate mitral regurgitation.
- DDD permanent pacemaker was inserted.
48 hours later

- The pt arrested and CPR was done for 10 min successfully.
- Urgent TTE and TEE was done and revealed severe mitral leaflets obstruction and severe aortic regurgitation.
- So the pt transferred to cath lab

WHAT TO DO?
Follow up

- The pt doing well for 3 years.
- Mild aortic regurgitation.
- Now he is regaining his sinus rhythm.

Take Home Message

- Decision making in elderly individuals with multiple comorbidities is both a science and an art.

- Procedural success critically depends on proper selection, meticulous preplanning, experienced teams (interventional and surgical) and well equipped units. A good TAVI operator is simply not enough.

- In fact we had a lot of lessons from such of those cases.