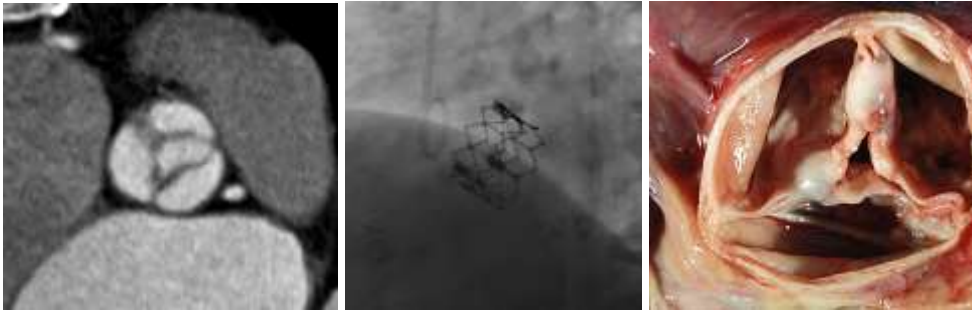


TAVI in Rheumatic Aortic Stenosis

Ahmed M. ElGuindy, MD, MRCP, FACC



Magnitude of the problem

Jan 2015 – Jan 2018

Patients reviewed in AHC TAVI clinic: 127

Patients with definite rheumatic AS: 9

Patients with possible rheumatic AS: 4

Peculiar features of rheumatic AS patients

Clinical/demographic

- Usually younger (68 vs 78)
- Concomitant mitral valve disease more common (3/5 had previous MVR, one had moderate MS)
- Atrial fibrillation common (70%)
- Previous stroke more common (30%)

Anatomical

- Less calcification – anchorage
- Interaction with mitral prosthesis
- Commissural fusion/calcification (possible advantage)



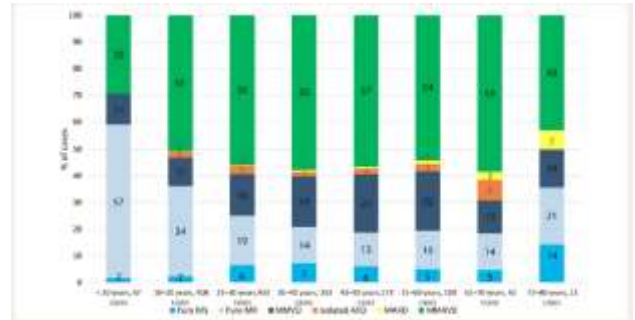
Planning: key considerations

- Concomitant mitral valve disease
- Presence of mitral valve prosthesis
- Degree of leaflet calcification
- Anticoagulation



Planning: key considerations

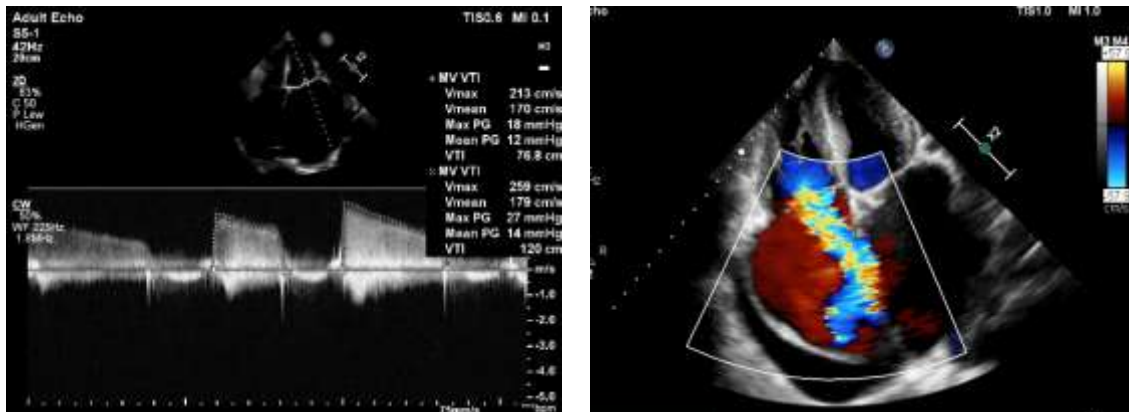
- Concomitant mitral valve disease
 - Severity and hemodynamic burden?
 - Dominant valve lesion?
 - Amenable to percutaneous intervention?
 - Same procedure/staged
 - Sequence
 - Approach



83 years old
Pneumonia + Acute pulmonary edema
Morbid obesity



83 years old
Pneumonia + Acute pulmonary edema
Morbid obesity



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70 years old, morbid obesity, COPD



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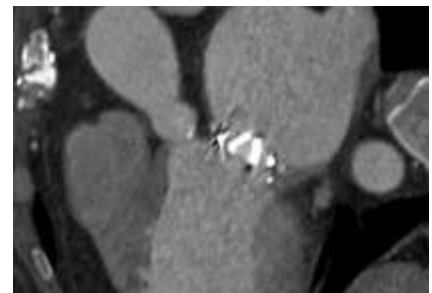
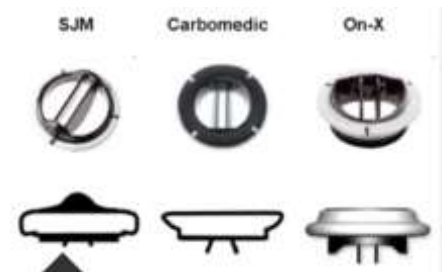
Planning: key considerations

- Concomitant mitral valve disease
- Presence of mitral valve prosthesis
 - Type of prosthesis: leaflet protrusion in the LV (by design and diastolic frames)
 - LVOT/mitral angle
 - Distance from annulus



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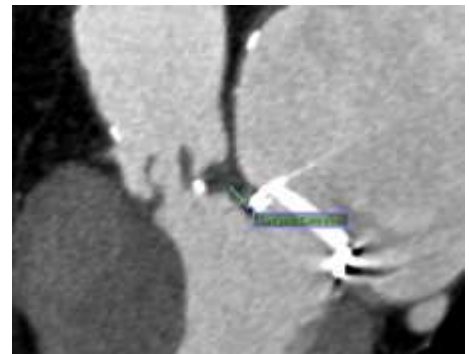
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Planning: key considerations

- Concomitant mitral valve disease
- Presence of mitral valve prosthesis
- Degree of leaflet calcification
 - No/limited calcification → consider balloon-expandable valve (lower implantation depth if self-expandable valve us used)
 - Sizing



Technical considerations

Balloon-expandable valves

Disadvantages

- Balloon-mitral prosthesis interaction → cranial migration of the valve near the end of deployment (caution with bioprosthesis)
- Non-repositionable

Advantages

- Better anchorage
- Lower risk of CHB

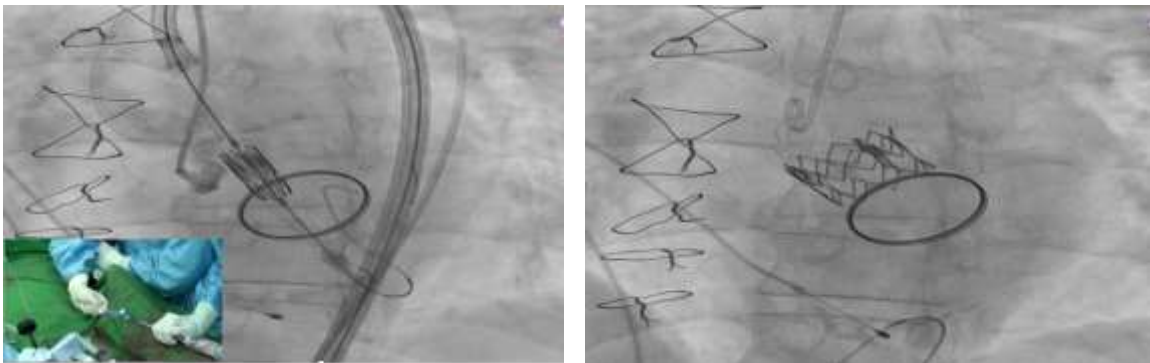
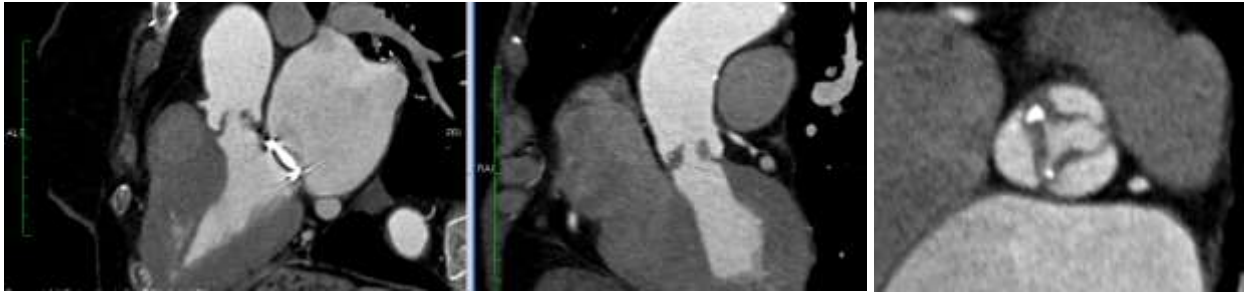
When to use:

- No mitral prosthesis
- Concerns about stability
- No concerns about interaction with prosthetic MV leaflets

Sizing: 15-20% area oversizing



68 years old, MVR X2, prolonged postop coma



Technical considerations

Self-expandable valves

Disadvantages

- Balloon-mitral prosthesis interaction → cranial migration of the valve near the end of deployment
- Non-repositionable

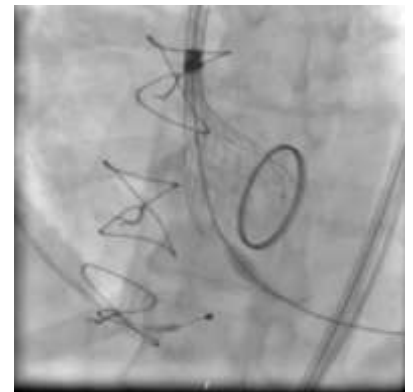
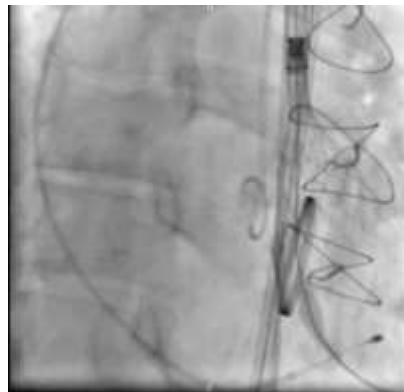
Advantages

- Repositionable
- No deployment-related

When to use:

- Mitral prosthesis present
- Concerns about interaction with prosthetic MV leaflets

Sizing: >30% area oversizing



	Balloon-expandable	Self-expandable
BAV		✓
LVOT calcification		✓
Horizontal aorta	✓	
Mitral prosthesis (or rigid ring)		✓
Rheumatic/non calcific	✓	
High risk of coronary obstruction (low coronaries)		✓
High risk of coronary obstruction (low sinus height, and/or small root)	✓	
Very small (<20 mm) or very large annulus (>28mm)		✓
Hostile vascular access and porcelain aorta	✓	
High risk of AVB	✓	
ViV aortic		✓
EF<30%		✓

**Assuming similar experience with both platforms*



jaa

EuroIntervention

Imperial College
London

Title: Transcatheter aortic valve replacement in patients with non-calcific aortic stenosis.

Authors: Tian-Yuan Liang, M.D.; Yuan Feng, M.D.; Yan-Dun Lian, M.D.; Yi-Han Li, M.D.; Zhen-Gang Zhao, M.D.; Xia Wu, M.D.; Yuan-Rong Xu, M.D.; Hui-Fu Wei, M.D.; Yong Peng, M.D.; Nicolo Piazza, M.D., PhD; Dariusz Mylotte, M.B., M.D.; Mao Chen, M.D., PhD

identified (non-calcific group). The patients were significantly younger in the non-calcific group (70.0[64.0-75.5] vs. 75.0[69.0-78.0] years) with comparable Society of Thoracic Surgeons predicted risk of mortality scores (6.7[4.8-8.9] vs. 8.2[4.8-10.9]). Pre-dilation was performed less frequently (42.9% vs. 93.9%) and post-dilation more often (71.4% vs. 42.6%) in the non-calcific group. Both 30-day and one-year mortality were similar between groups (0% vs. 7.8% and 0% vs. 17.6%). Rates of post-implantation paravalvular leak \geq mild at 6 months (17.6% vs. 25.7%) were comparable despite lower implantation depth among non-calcific AS patients (10.9 \pm 5.7 vs. 7.2 \pm 4.3mm) on post-implantation MDCT.

Conclusions: Self-expanding TAVR appears to be safe and effective in patients with non-calcific AS.





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