

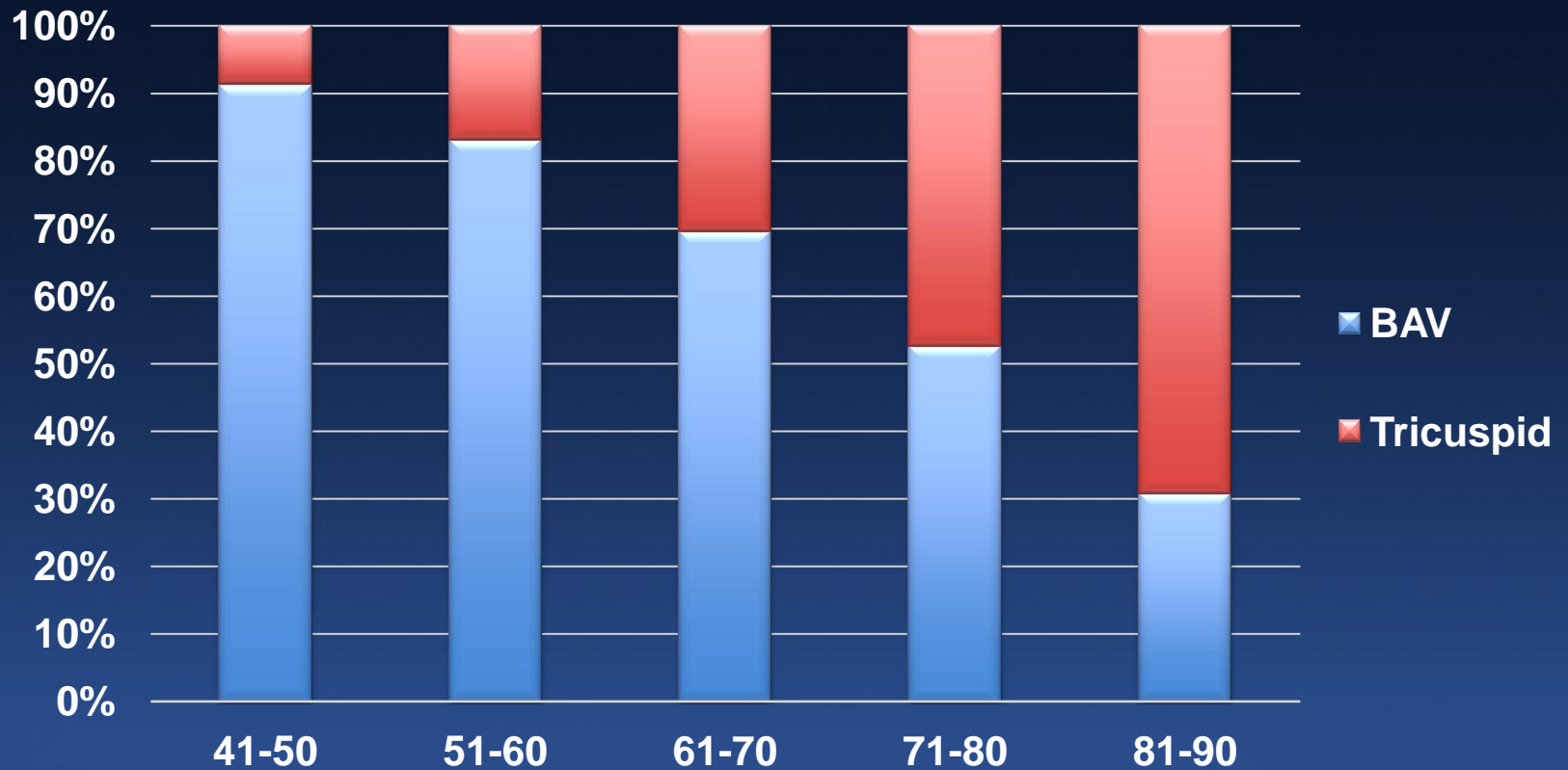
Transcatheter Aortic Valve Implantation in a Bicuspid Valve Using the Self-Expandable Venus A-Valve

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Bicuspid Aortic Valve (BAV)

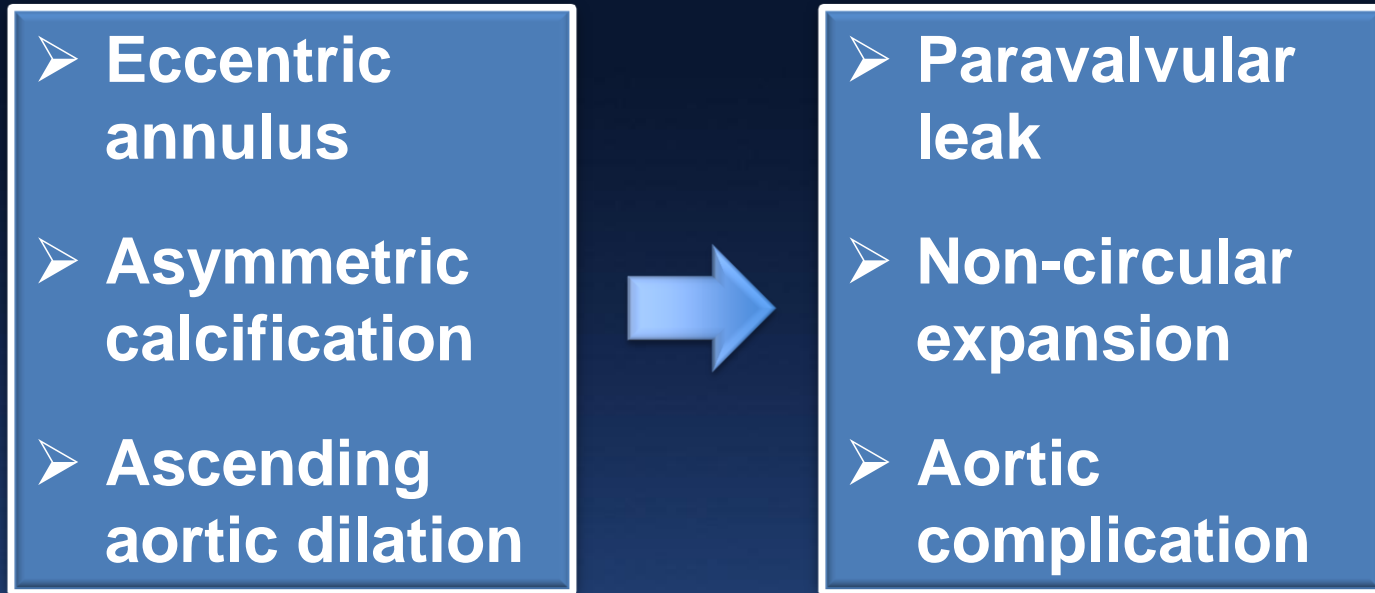
- 20%~30% of octogenarians undergoing SAVR for isolated aortic stenosis had a BAV



Roberts, et al. *Circulation* 2005; 111:920-5.

Bicuspid Aortic Valve (BAV)

- Regarded as a relative contraindication for TAVI



- Recent experiences: TAVI in BAV is feasible, safe and associated with satisfactory outcomes

Venus A-Valve (Venus MedTech Inc.)

- Differences from CoreValve:

- **3 rounded pawns:**
facilitate release
- **Tapered end:**
AV node protection
- **Higher radial force at the Inflow 20mm:**
for severely calcified and bicuspid valves



Patient

History

- 75 year-old woman
- Progressive dyspnea for 2 years, orthopnea and edema of lower extremities for 3 months
- Diabetes mellitus, COPD, AF

Echo

- Severely stenosed BAV
- Mean gradient: 86 mmHg
- Peak jet velocity: 5.6 m/s
- LVEF: 39 %

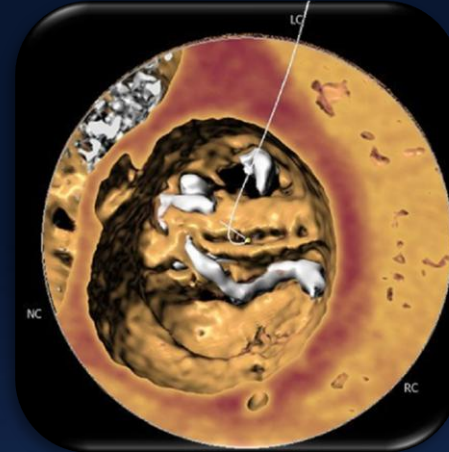
Risk

- Logistic EuroSCORE: 17.00%
- STS Score: 9.296 %

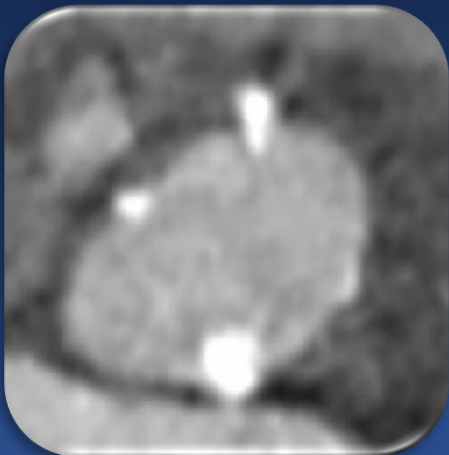
Preprocedural CTA



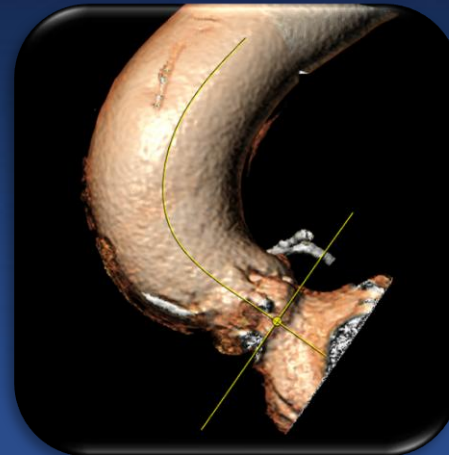
Type 0 BAV (no raphe)



Moderate calcification



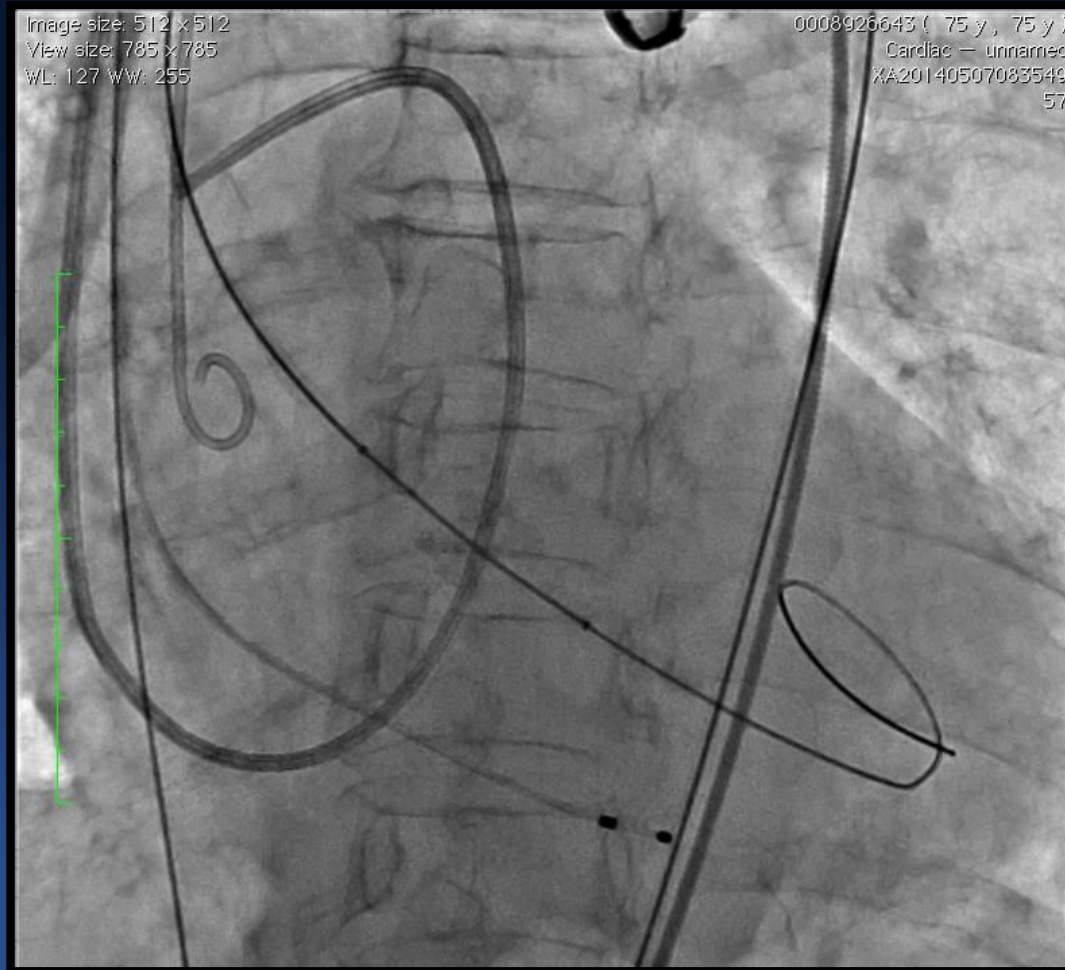
**Eccentric annulus
(17.7*26.7mm)**



Moderate dilatation (46.6mm)

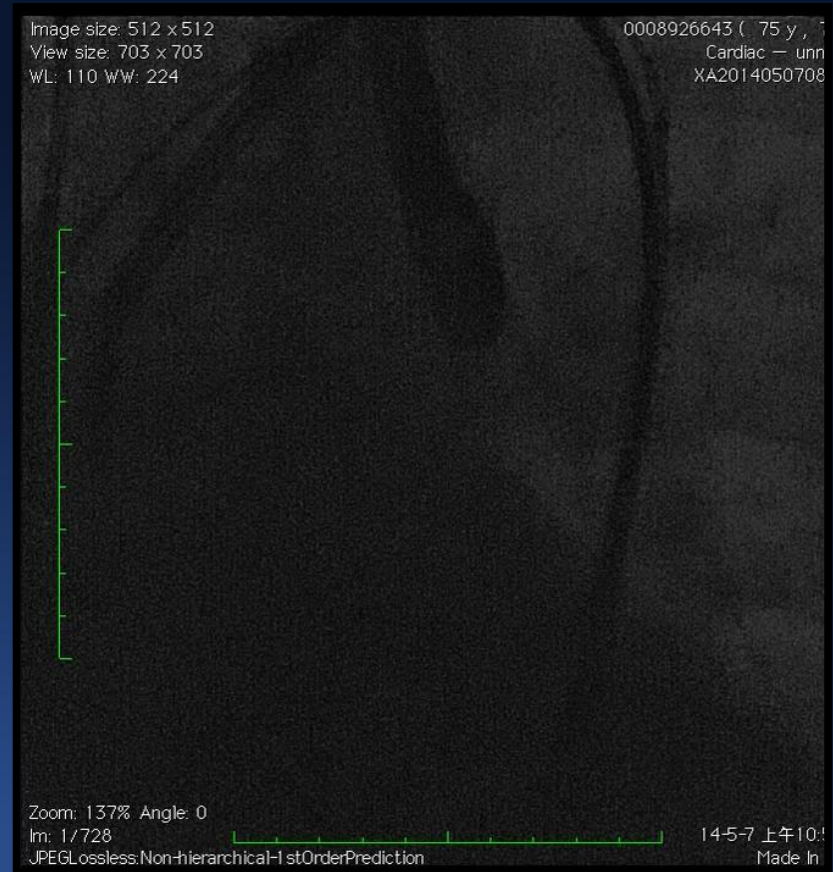
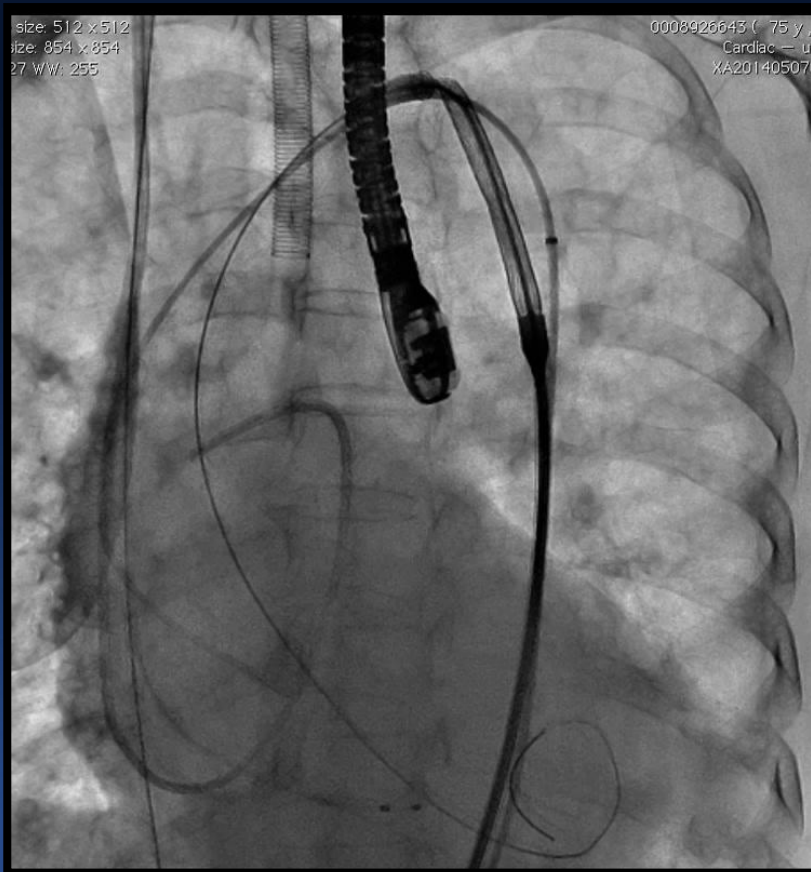
TAVI Procedure

- TF approach, Pre-dilatation with a 22-mm balloon



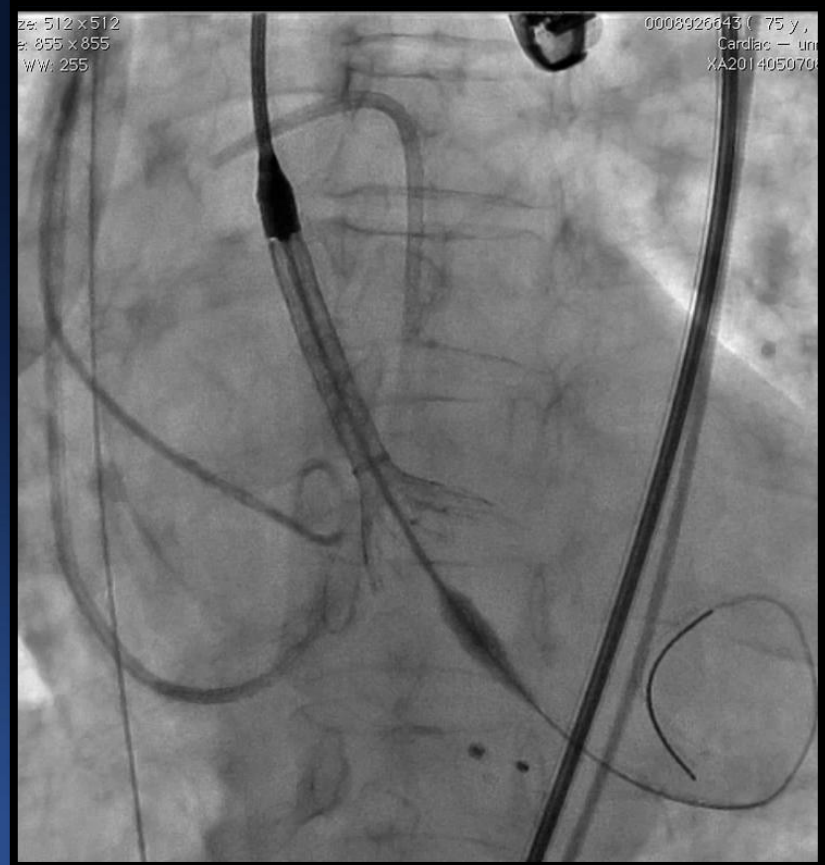
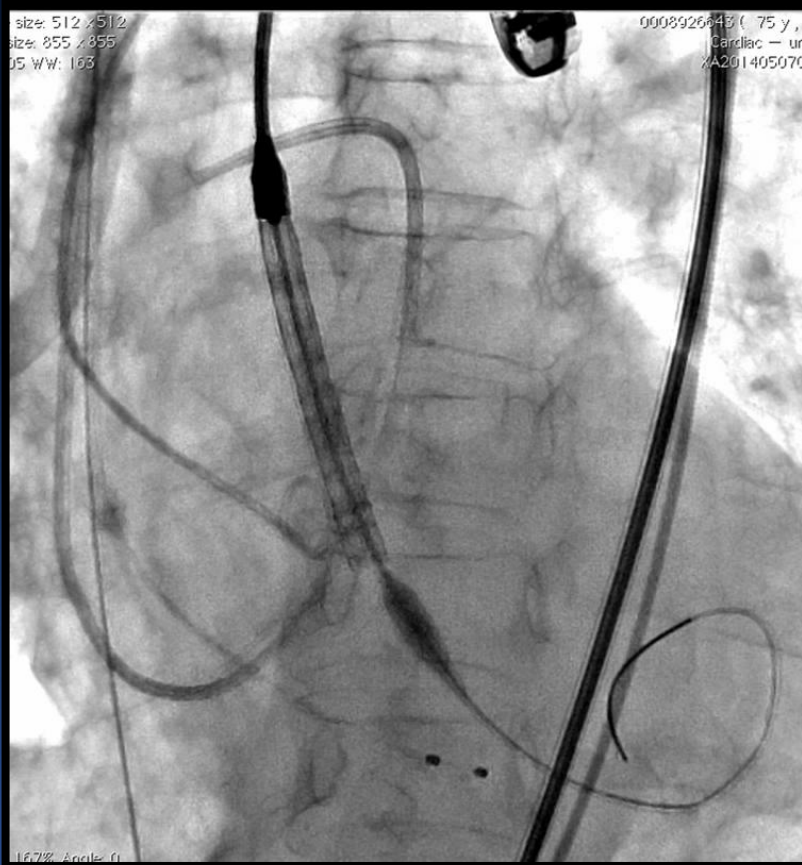
TAVI Procedure

- 26-mm Venus A-Valve (Venus MedTech Inc.)



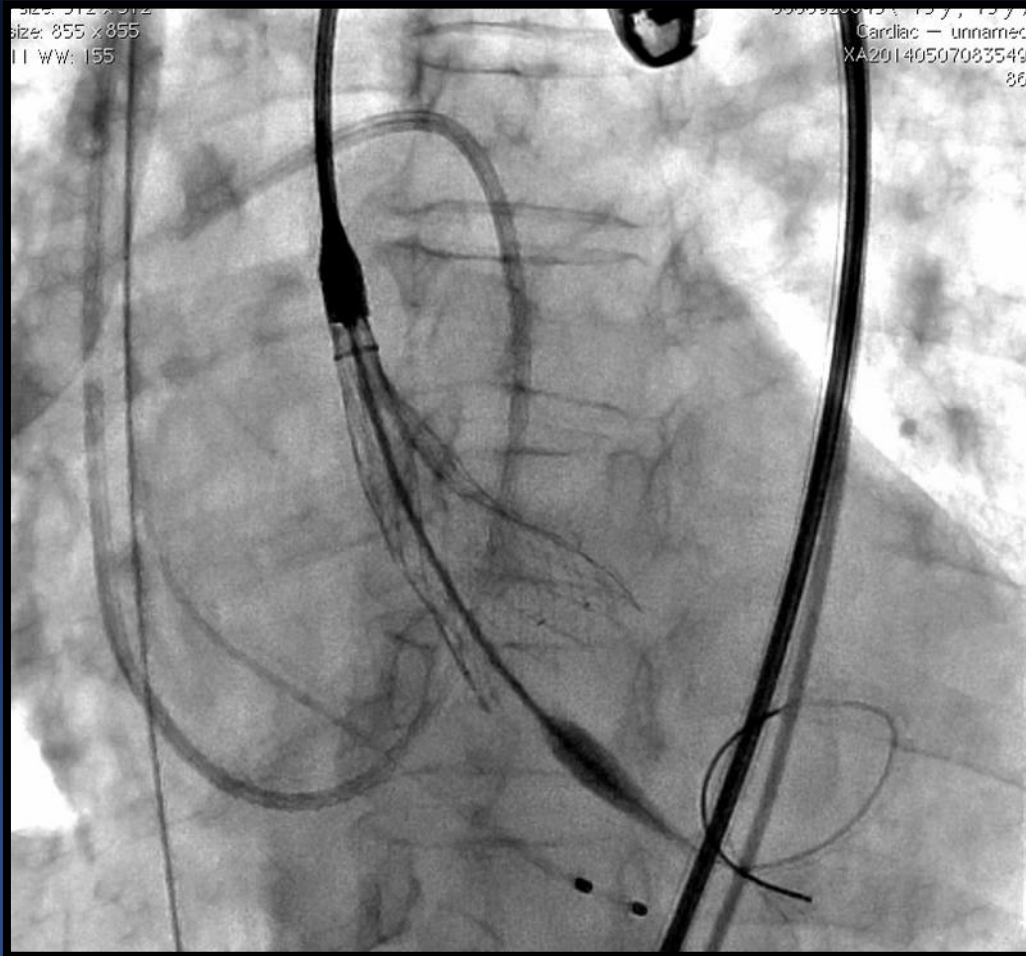
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TAVI Procedure

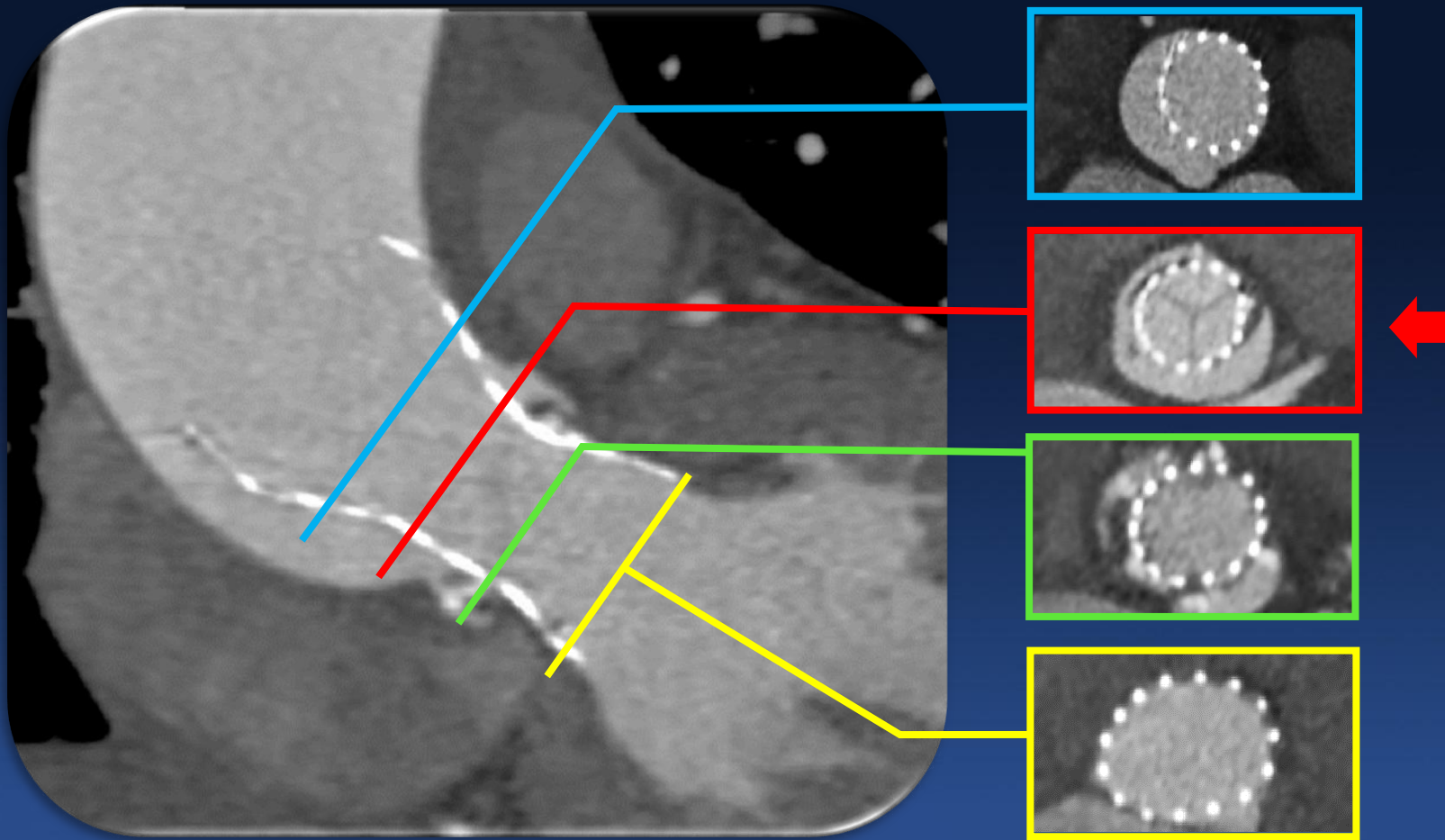
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Post-TAVI Evaluation

- Symptoms relieved
- NYHA Class II
- BNP: (19301→1661) pg/ml
- Recovery was uneventful, discharged 7 days later
- Follow-up at 6 months: asymptomatic, no adverse events
- Echo: PGmean: (89→16) mmHg; LVEF: (39→61) %, trivial paravalvular leak

Post-TAVI CTA



Comments

- **TAVI using the Venus A-valve is feasible in bicuspid anatomy**
- **TAVI in BAV:**
 - Difficulty (valve sizing, accurate positioning)
 - Risk (procedural failure, paravalvular leaks, root injury, aortic complication)
- **Follow-up:**
 - Fate of the ascending aorta
 - Valve durability

Thanks!