Three at once: challenging simultaneous aortic valve-in-valve with Chimney Stenting and transcatheter mitral valve-in-valve.

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Acknowledgment

- Co-Investigators
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  - Erion Xhepa, MD, PhD
  - Hendrik Ruge, MD

Disclosure of Relevant Financial Relationships

Within the prior 24 months, I have had a financial relationship with a company producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients:

Nature of Financial Relationship	Ineligible Company
Grant/Research Support	Edwards Lifescience, Abbott
Consultant Fees/Honoraria	LifeTech, Translumina, SIS Medical

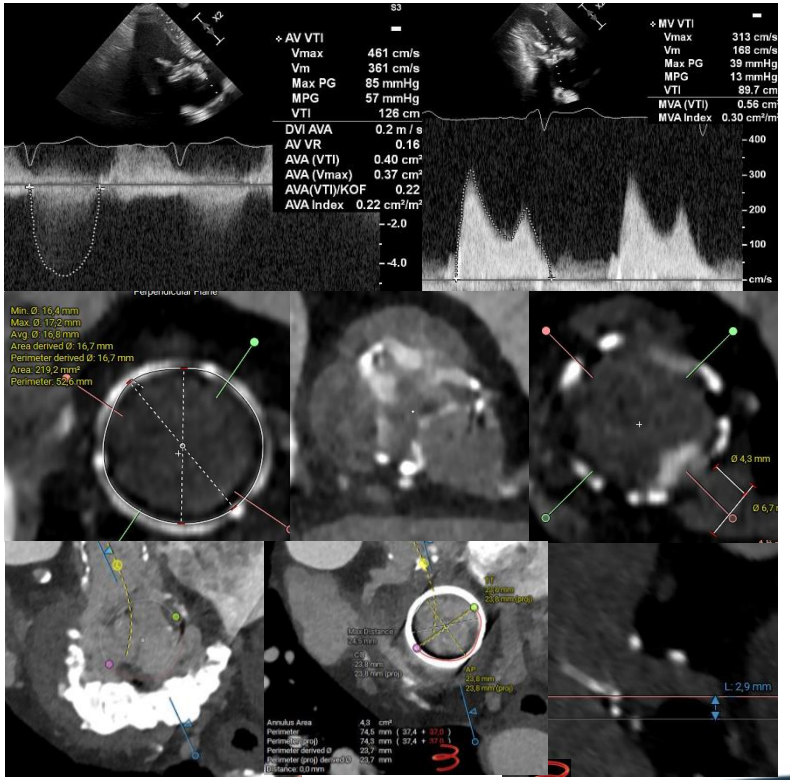
All relevant financial relationships have been mitigated.
Faculty disclosure information can be found on the app

Patient´s information

- 76-years old female.
- Cardiovascular risk factors: hypertension.
- Previous history
  - Aortic valve replacement 2010 (*Xenograft Sorin 19mm*)
  - Re-Aortic valve replacement (*Trifecta 19mm*) and Mitral valve replacement (*Hancock II 25mm*) in 2014
  - Right lower lobectomy due to Tuberculosis (2013)
  - Hepatitis C under treatment (2013)

Admission

- Patient was admitted due to progressive exertional dyspnea (NYHA III).
- Echocardiography showed *aortic dPmean 57mmHg*, aortic valve area 0.40cm^2, *mitral dPmean 13mmHg*, sPAP 59mmHg, LVEF 55%.
- No coronary artery disease.
- Computed tomography revelaed calcified aortic bioprosthesis leaflets, internal *mean diameter 16.8mm*, *left main height 2.9mm*, *valve to coronary distance 4.3mm*, mitral bioprosthesis with pannus, severely annulus calcification.



Diagnosis and risk

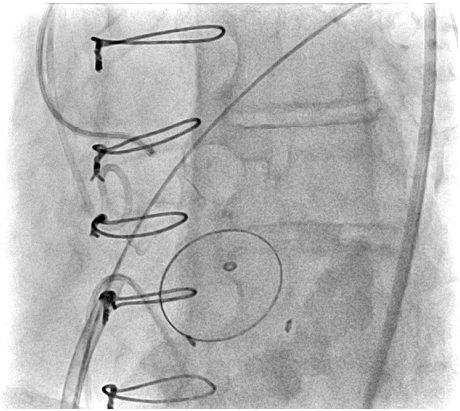
- Diagnosis:
  - Severe aortic valve re-stenosis
  - Severe mitral valve re-stenosis

- Surgical risk: Logistic EuroScore 26.6%, EuroScore II 8.5%

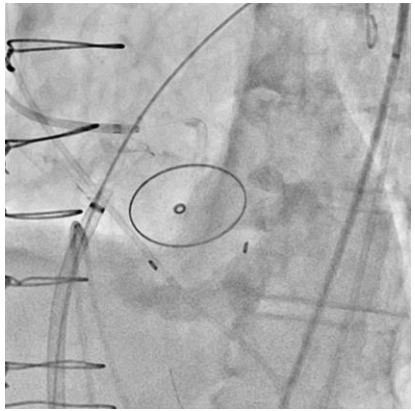
- Following complete diagnostic work-up and heart-team discussion, and based on previous open heart surgeries, the *consensus* was to perform *transcatheter aortic valve implantation* (valve-in-valve) using a *self-expanding valve* platform to reduce the risk of patient-prosthesis mismatch due to small size of the previous valve prosthesis and *Chimney Stenting the left main* to avoid coronary occlusion/sequestration and additionaly *transcatheter mitral valve implantation* (valve-in-valve) in the same procedure.

- TAVI-TMVI indication: Re-re-OP, severe MAC.

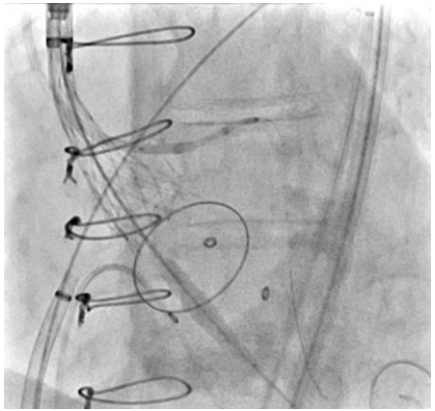
Procedure – Aortic Valve and Stent Deployment



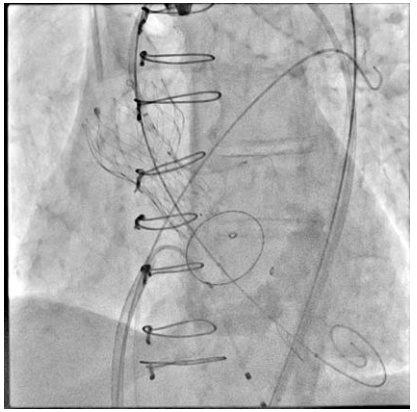
Aortogram and Angiography



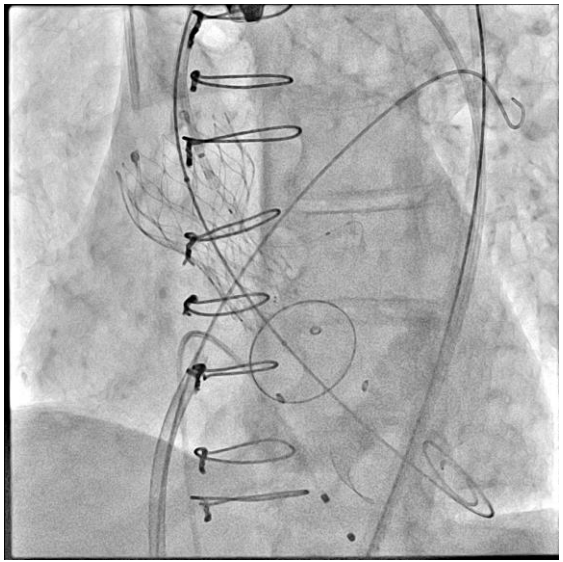
23mm Evolut Fx

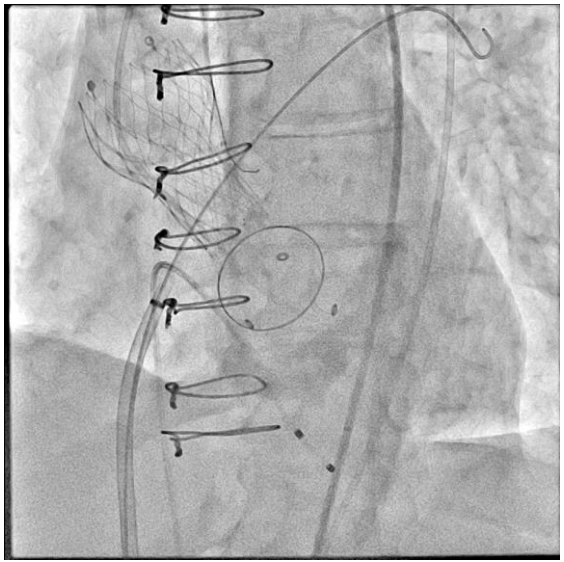


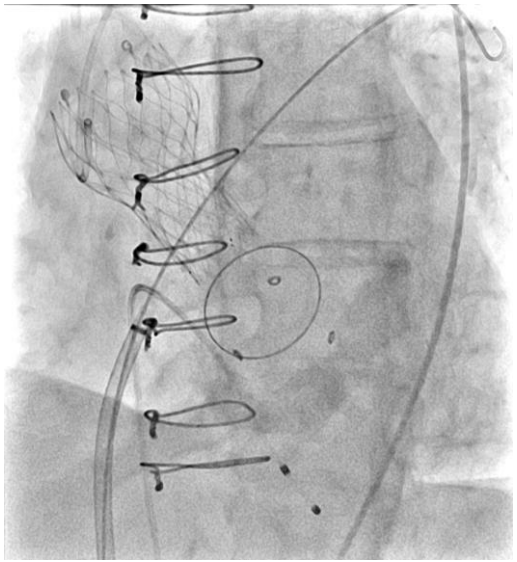
Stent 4x33mm



Angiographic result

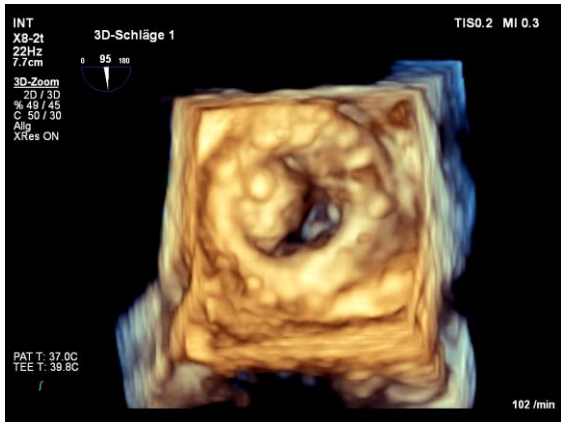


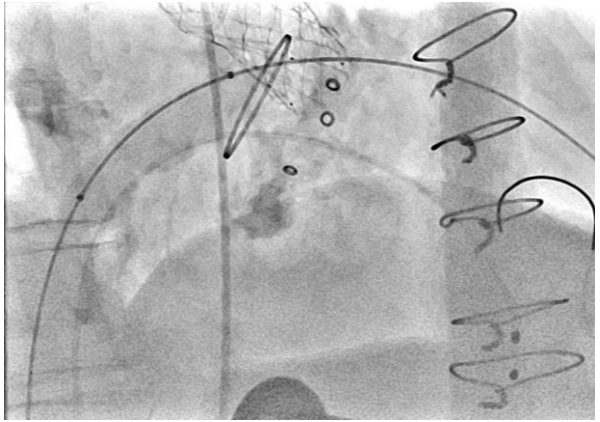




Kissing
NC Balloon 18mm
and 4mm

Procedure – Mitral Valve Implantation



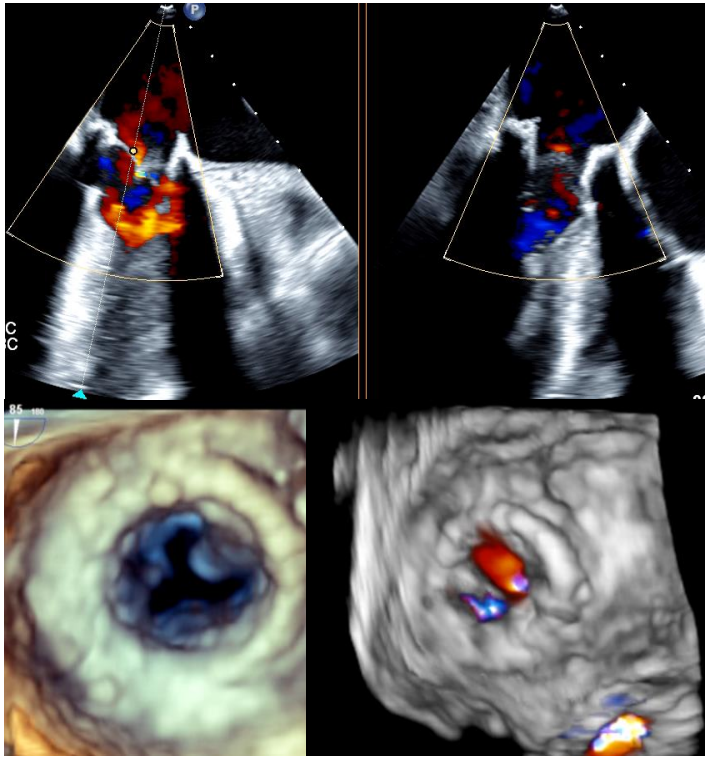


Septostomy balloon 14x40mm

Sapien 3 Ultra 23mm

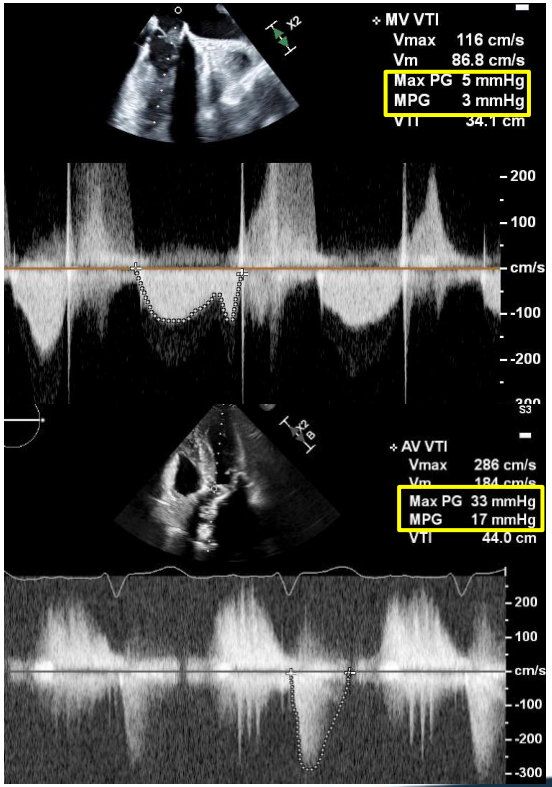
Mitral Valve Result

Post-dilatation 22mm NC Balloon



Discharge Information

- Marcumar for 6 months, ASA for 1 month, clopidogrel for at least 12 months (24 months if well tolerated).
- After discontinuation of OAC restart DAPT with ASA and clopidogrel after chimney stenting.



Conclusion/Summary/Take-home Message

- The current trend is toward treating younger patients.
- Double valve replacement poses a procedural challenge that requires adequate preparation.
- Coronary access is important in patients receiving a supravalvular prosthesis.
- The need for Chimney-stenting depends on the coronary height and the risk of occlusion.
- Anticoagulation-antiplatelet therapy has not yet been well studied in double valve replacement with coronary stenting.

Thank you for your attention!

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