



**AORTIC
LIVE**

2018

29–30 October 2018
Congress Center Essen, Germany

5th Aortic Live Symposium

SIMULTANEOUS TAVI AND TMVR

DAVID HOLZHEY, THILO NOACK

UNIVERSITY DEPARTMENT OF CARDIAC SURGERY

HEART CENTER, LEIPZIG, GERMANY

TAVI and TMVR Disclosure

I do not have any potential conflict of interest

TAVI and TMVR

Patient Characteristics

- RJ, 79 years-old female
- NYHA functional class III, peripheral edema, ascites, pleural effusion
- Severe AS, moderate AR (Pmax/mean 49/25 mmHg, AVOA 0.8 cm²)
- Moderate-severe MR (V.c. 5 mm, Pmax/mean 10/3 mmHg)
- Severe TR (Annular diameter 49 mm)
- s/p myocardial infarction, ICD-implantation 2000
- AFIB, renal insufficiency
- s/p mammary carcinoma
- s/p colon carcinoma

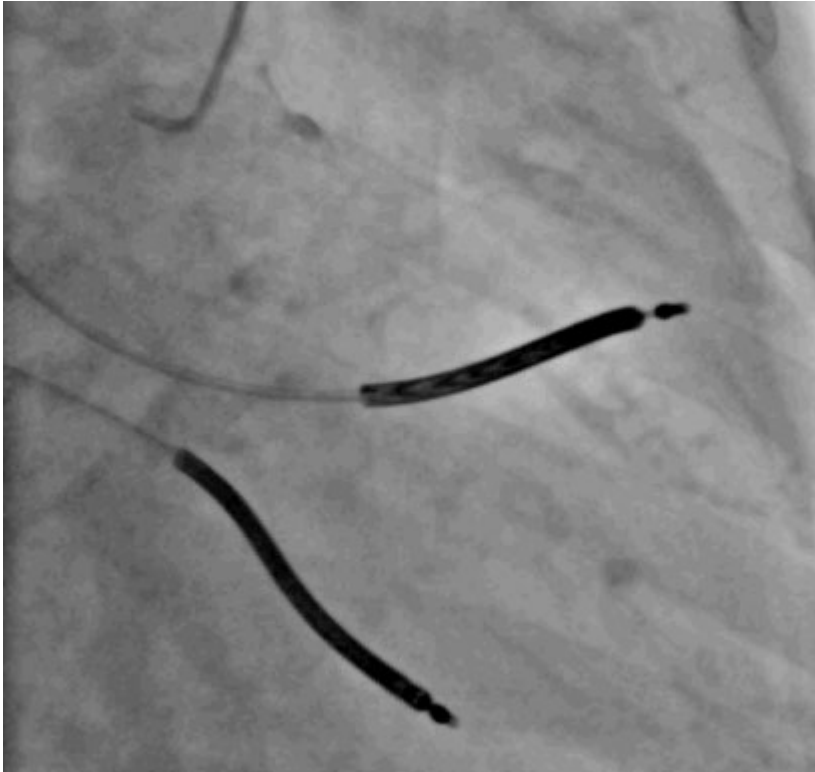
STS Score: 3.4%

EuroSCORE II: 5.6%

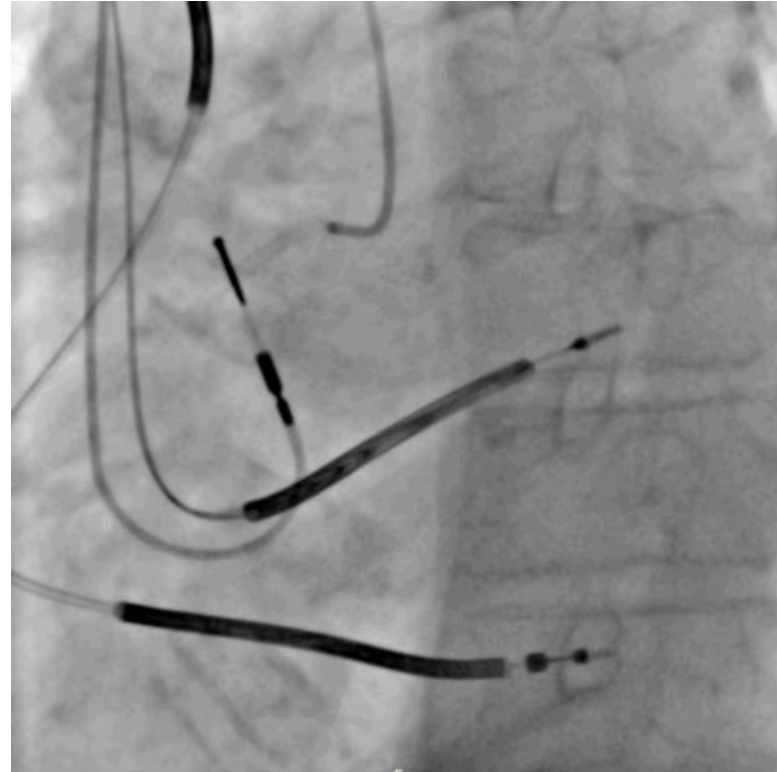
TAVI and TMVR

Coronary Angiography

Left Main



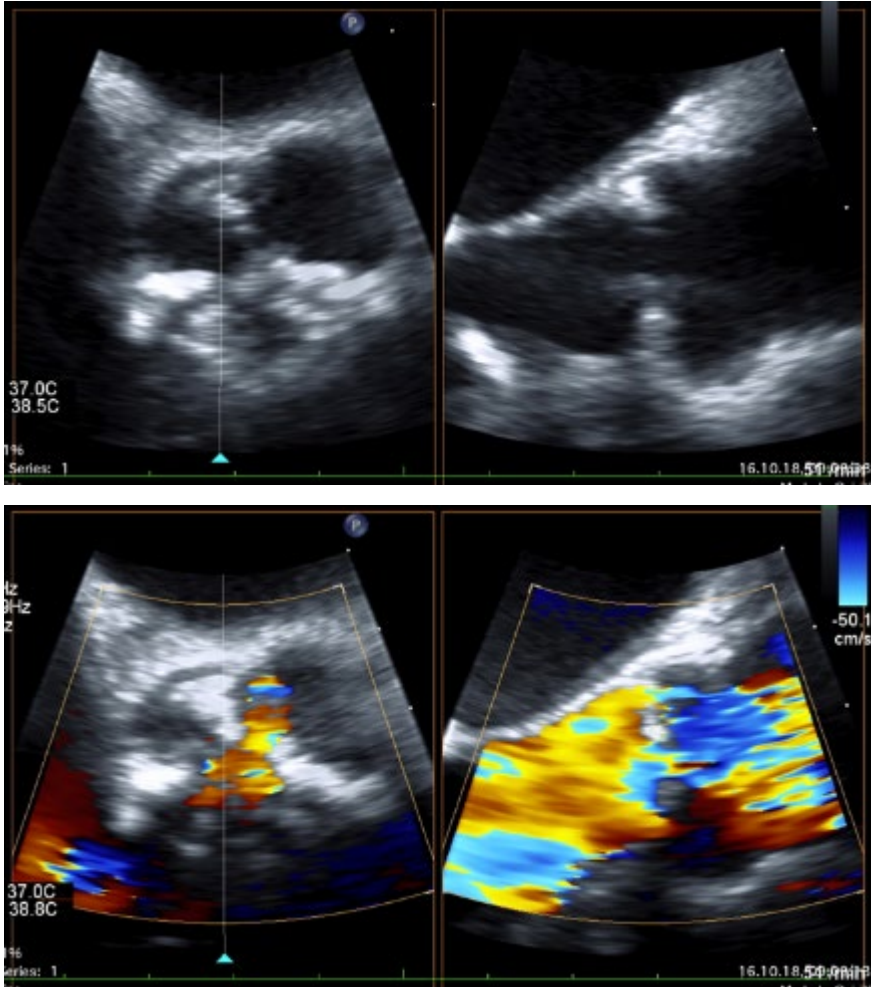
RCA



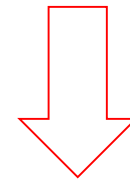
Exclusion of CAD

TAVI and TMVR

2D/3D-TEE – Aortic Valve



- Severe AS
- Moderate AR
- Pmax/mean 49/25 mmHg
- AVOA 0.8 cm²
- *Bicuspidalized*



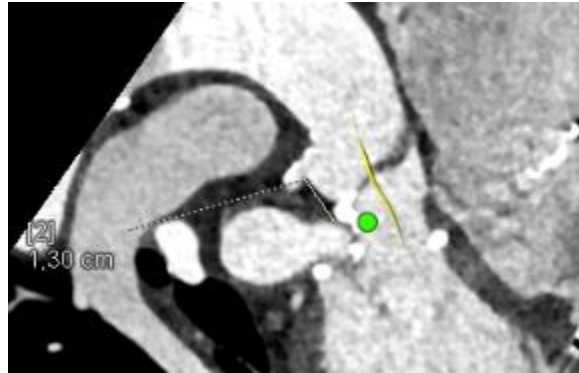
TAVI

TAVI and TMVR

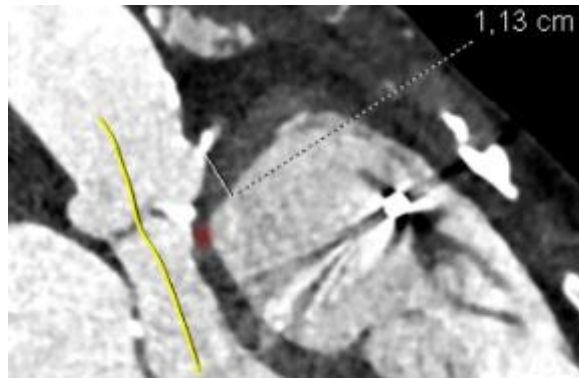
TAVI Planning



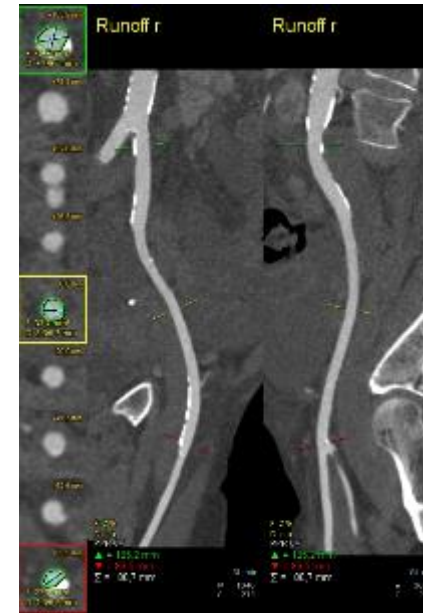
RCA
13 mm



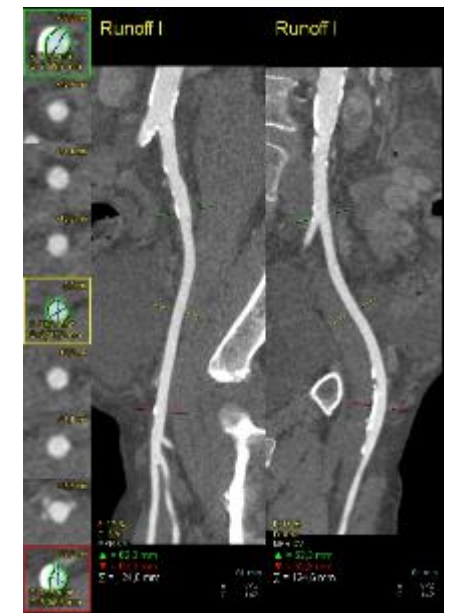
Left Main
11 mm



Right femoral artery
6.3 – 9.5 mm

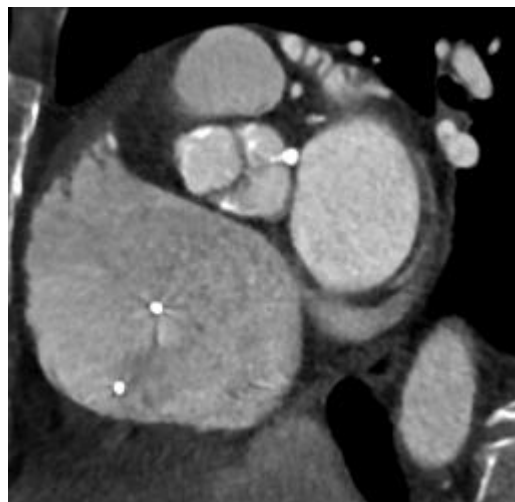
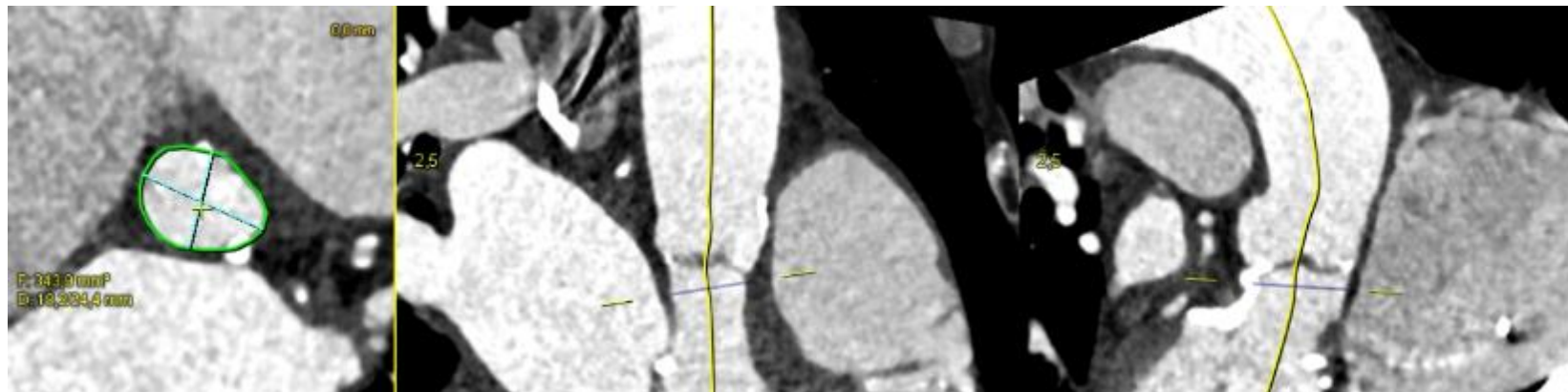


Left femoral artery
6.5 – 9.9 mm



TAVI and TMVR

TAVI Planning



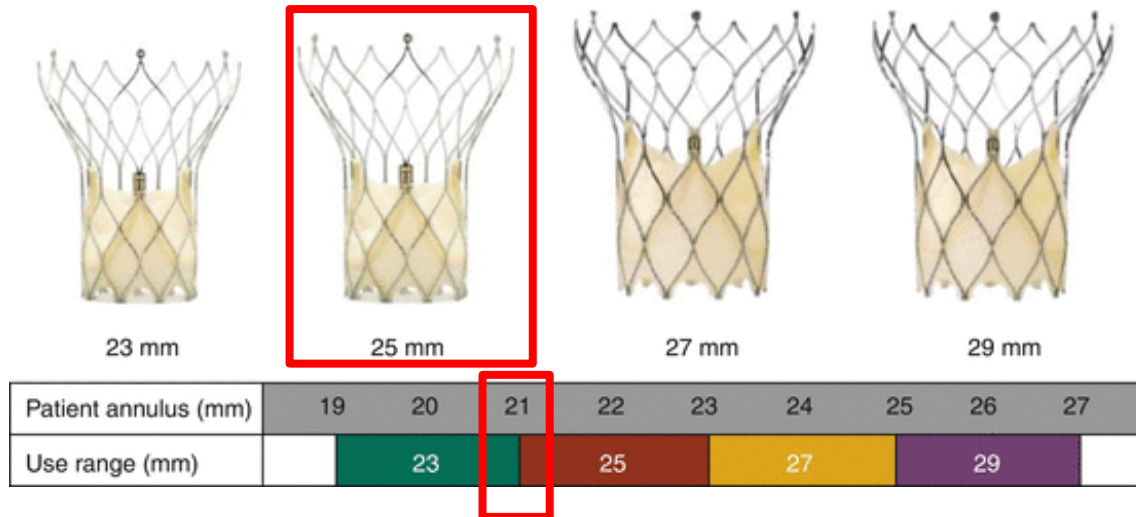
$$ED_{\text{Area}} = 20.9 \text{ mm}$$

$$ED_{\text{Peri}} = 21.5 \text{ mm}$$

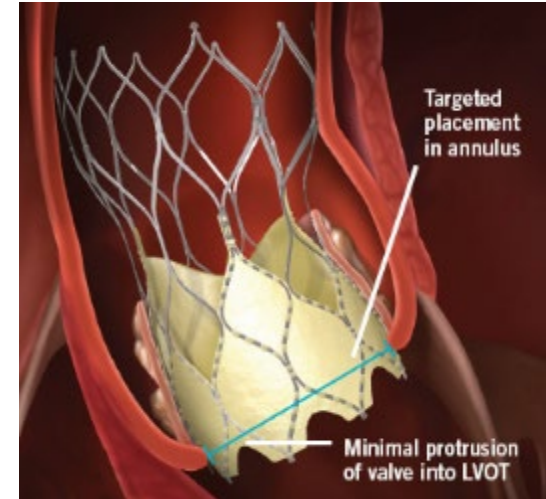
$$\text{Area} = 344 \text{ mm}^2$$

TAVI and TMVR

Portico™ Transcatheter Aortic Heart Valve



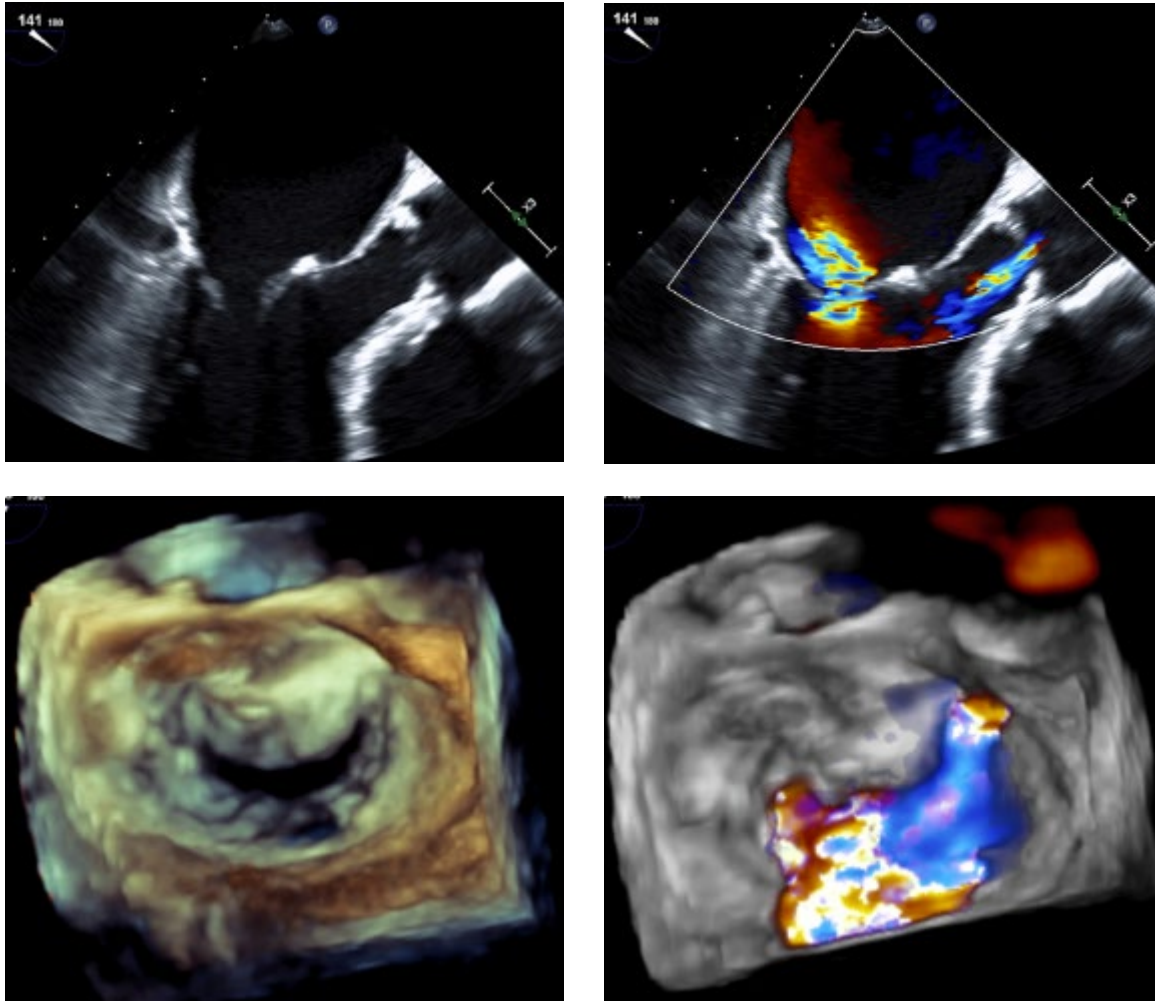
$ED_{Area} = 20.9 \text{ mm}$
 $ED_{Peri} = 21.5 \text{ mm}$
 $Area = 344 \text{ mm}^2$



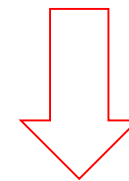
- TF TAVI
- Fully repositionable and retrievable

TAVI and TMVR

2D/3D-TEE – Mitral Valve



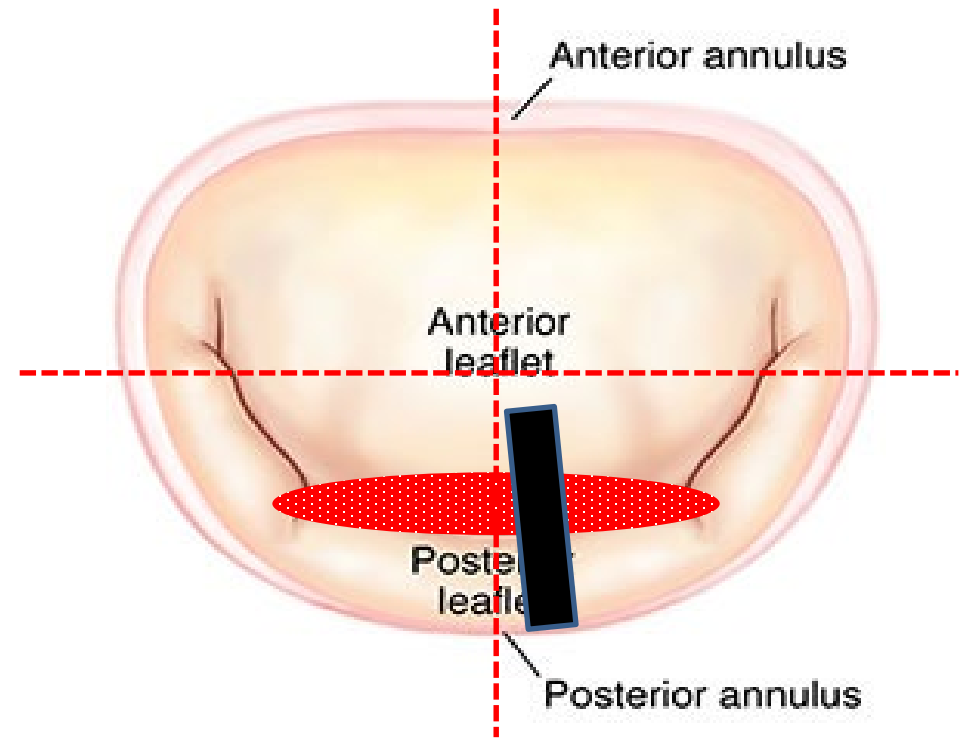
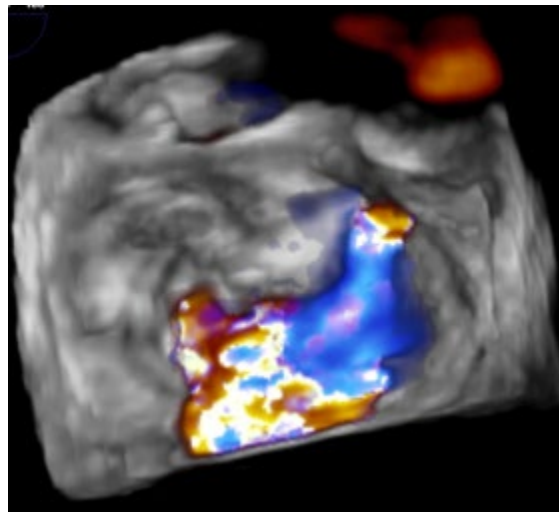
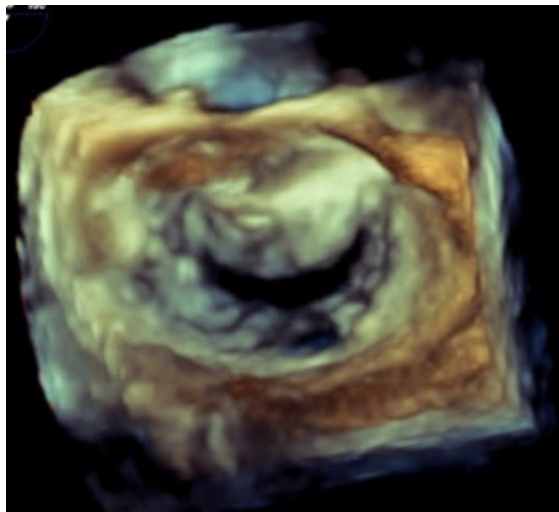
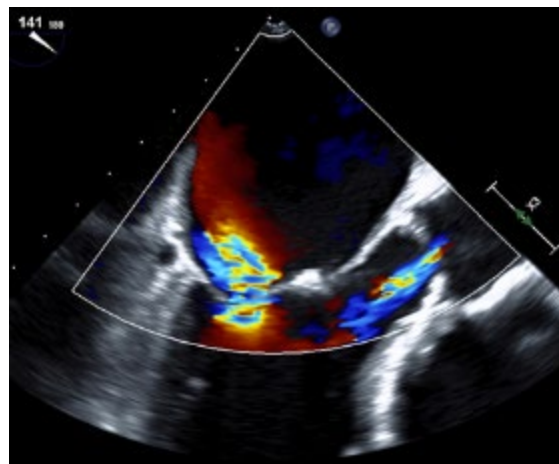
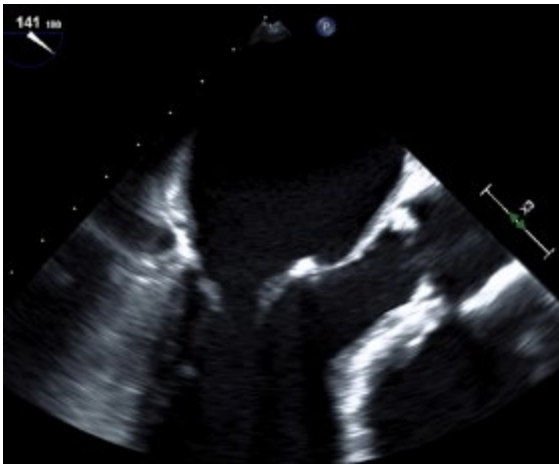
- Moderate-to-severe MR
- Severe excentric jet
- Pseudoprolapse of AML
- Calcified anterior annulus
- V.c. 5 mm
- Pmax/mean 10/3 mmHg
- Annular diameter 26 mm



TMVR: MitraClip

TAVI and TMVR

TMVR Planning



Left orifice > right orifice

Two Clips Sizes Expanding Treatment Options



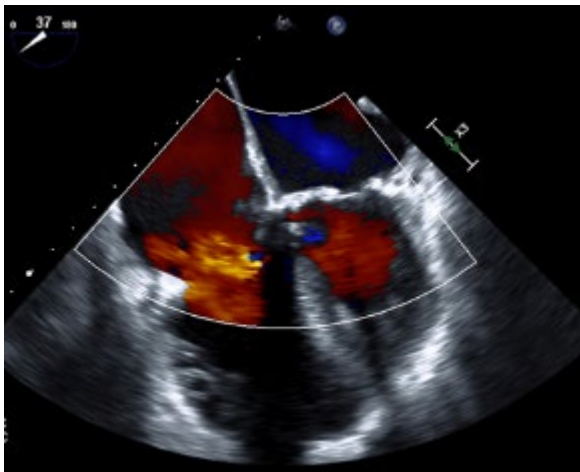
- Original MitraClip NT size,
- Improved Clip Delivery System



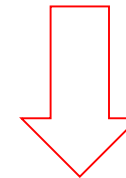
- +3 mm additional Clip-arm length
- +5 mm wider grasping width
- +44% more coaptation surface area

TAVI and TMVR

2D/3D-TEE – Tricuspid Valve



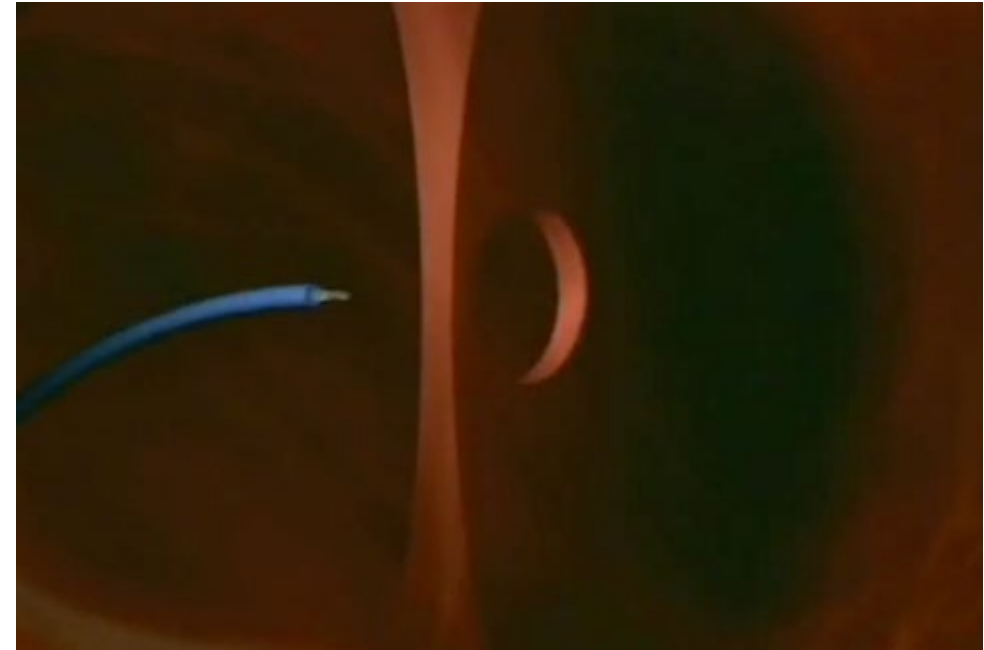
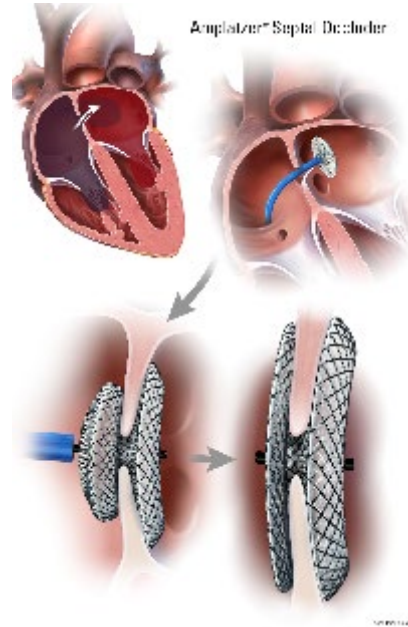
- Severe TR
- Annulus 49 mm
- Coaptation defect 18 mm



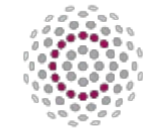
No interventional option

TAVI and TMVR Amplatzer™ Septal Occluder

In case of postinterventional atrial right-left shunt

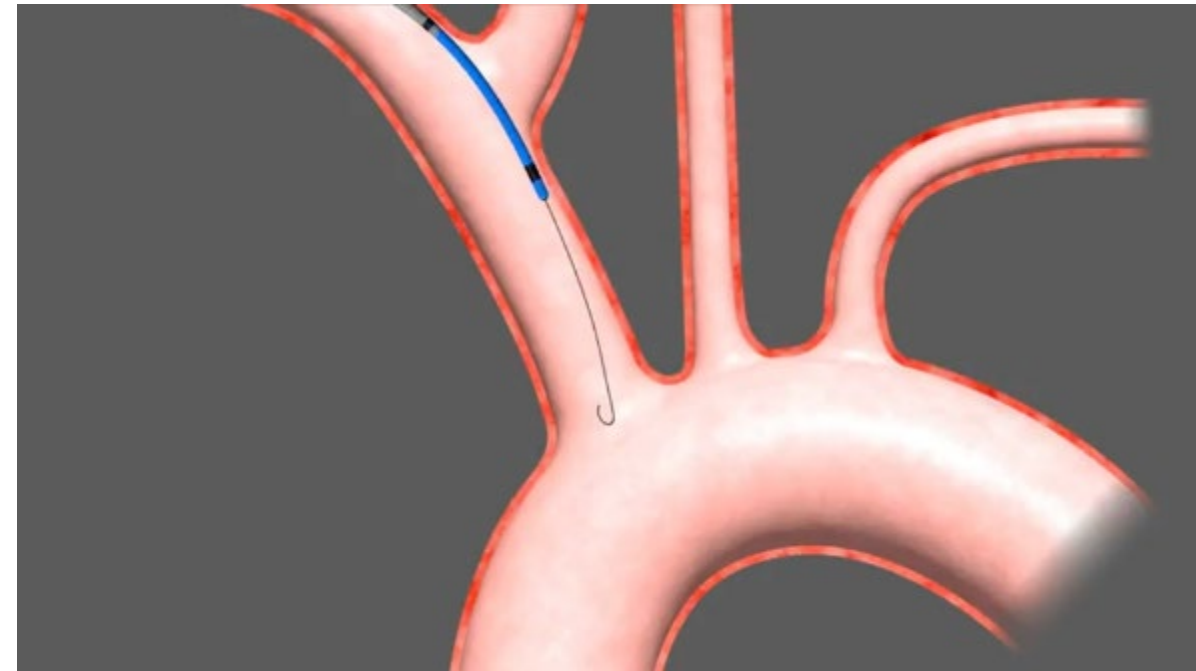
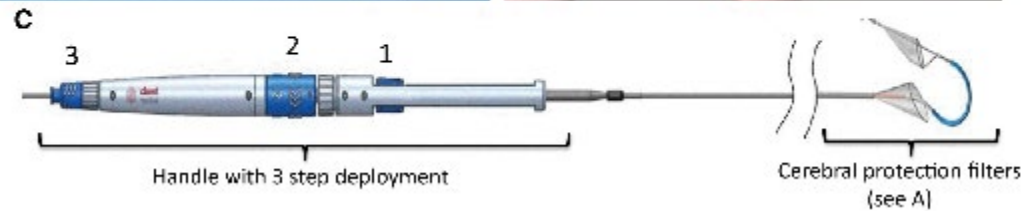
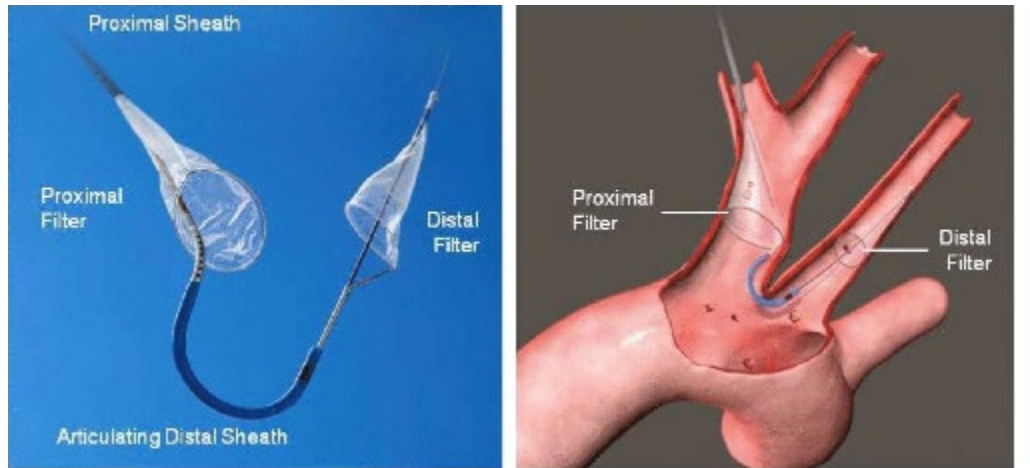


TAVI and TMVR Sentinel™ Cerebral Protection Device



claret™
medical

Boston
Scientific



Placed via right radial artery

TAVI and TMVR Interventional Planning

Intervention

- Aortic valve: TF-TAVI with **Portico 25 mm**
- Mitral valve: TF-TMVR with **MitraClip NTR**
- Neo-ASD: **Amplatzer** septal occluder *stand by*
- CPS: **Sentinel** Cerebral Protection Device
- Patient: Under general anesthesia
- Date of Intervention: 16. October 2018 at Heart Center Leipzig

Team

- Surgeon: **David Holzhey**
- Surgeon: **Thilo Noack**
- Cardiologist: **Philipp Lurz**
- Anesthesiologist: **Carmine Bevilacqua**

TAVI and TMVR Access

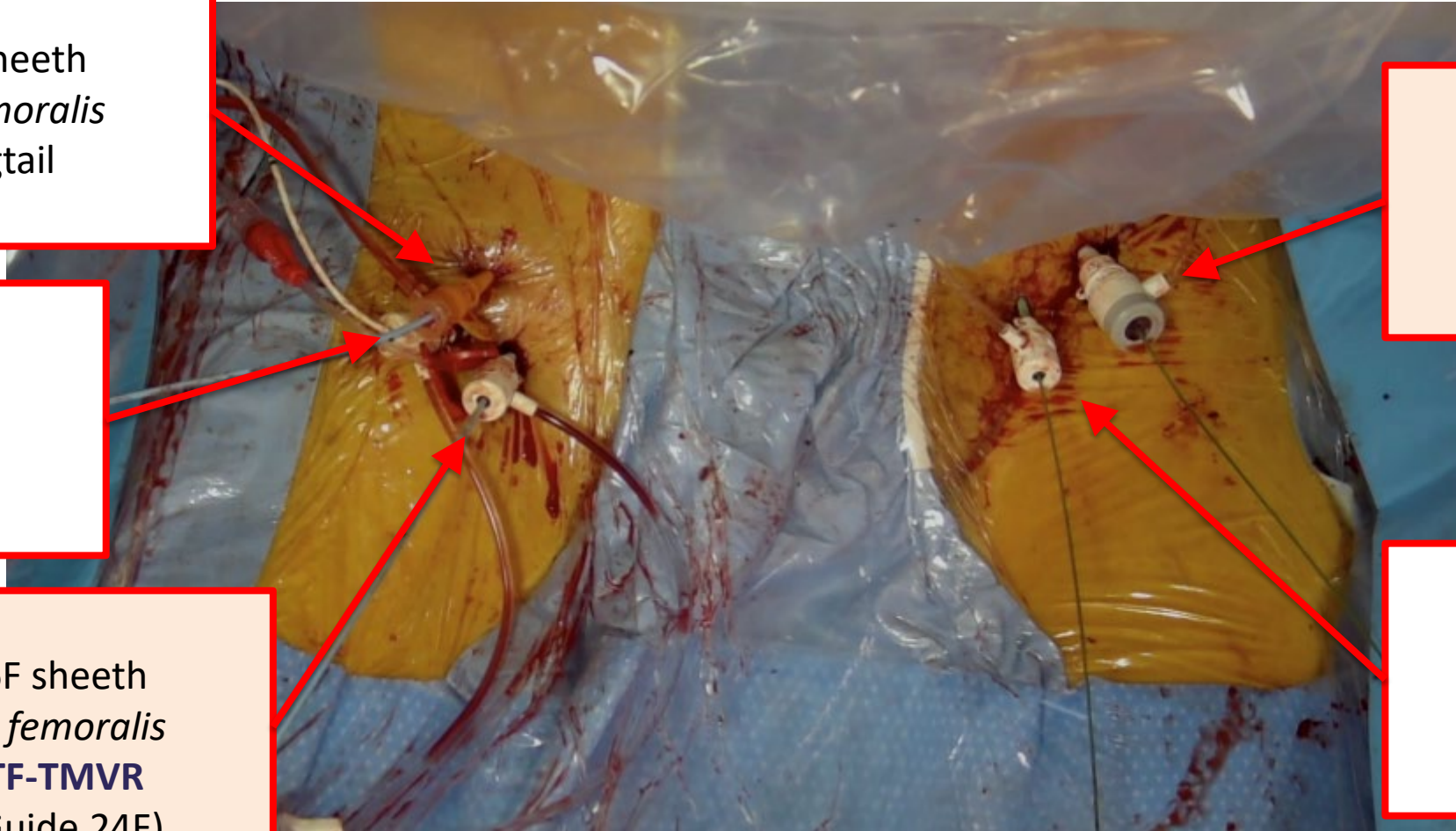
6F sheeth
A. femoralis
Pigtail

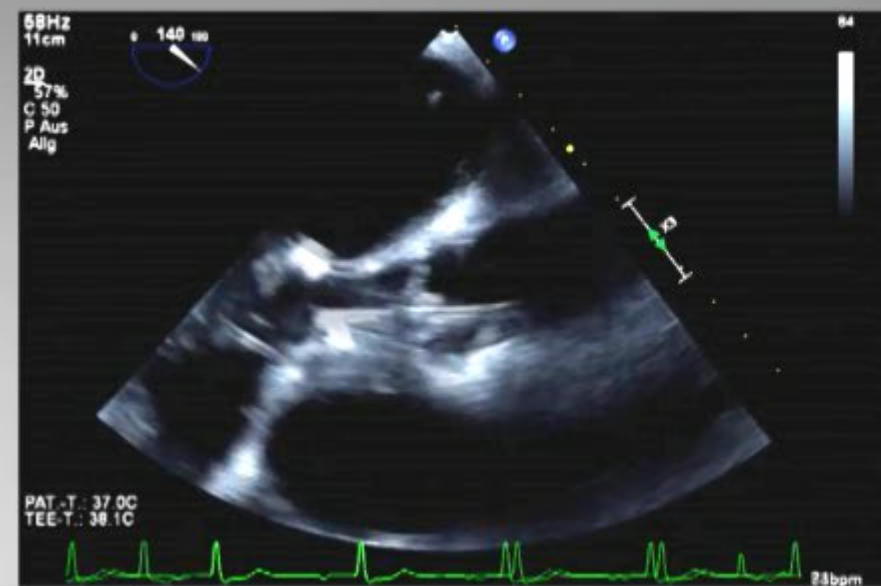
6F sheeth
V. femoralis
Pacemaker

6F sheeth
A. femoralis
TF-TMVR
(Guide 24F)

18F sheeth
A. femoralis
TF-TAVI

6F sheeth
V. femoralis
SafetyNet

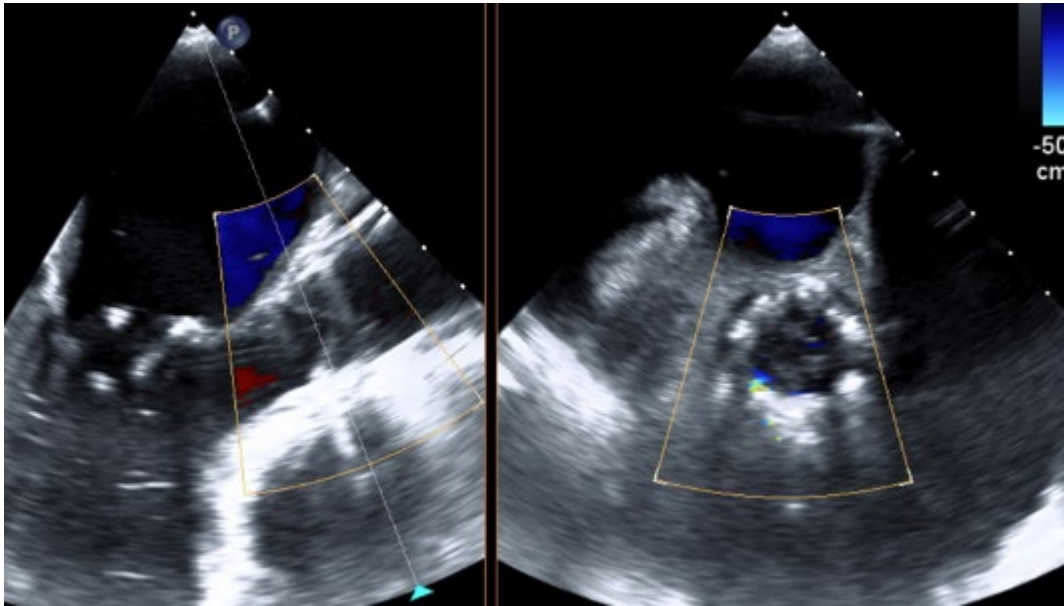




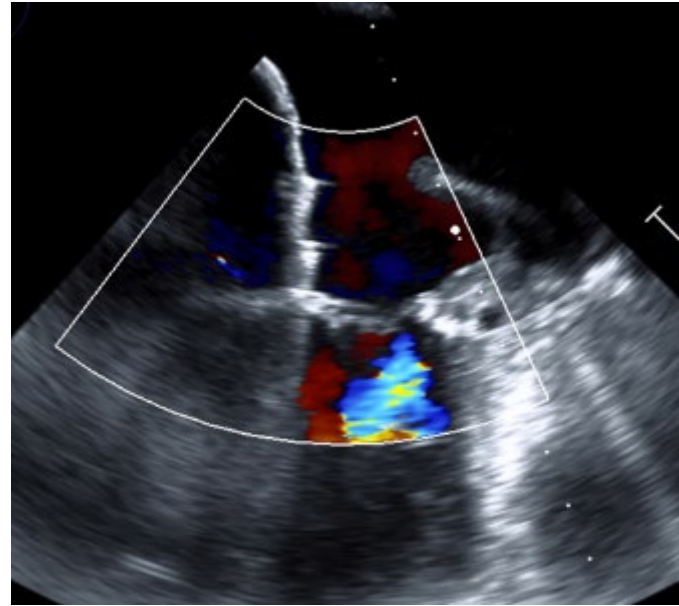
TAVI and TMVR

Postinterventional Results

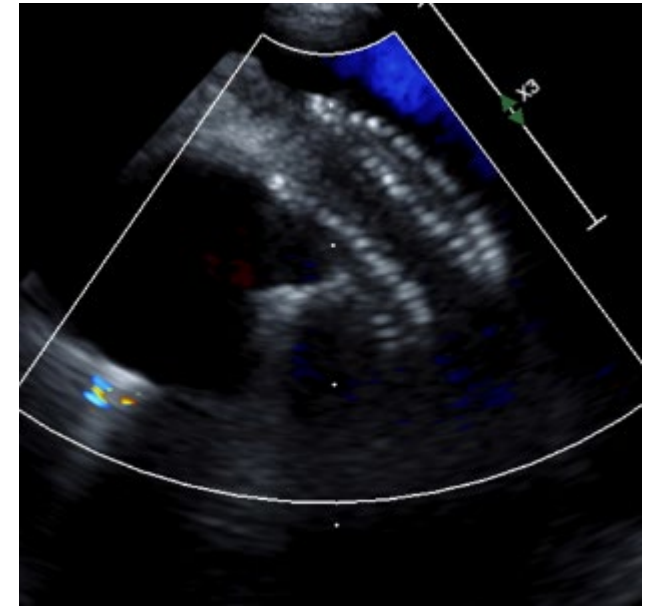
TF-TAVI
Portico 25 mm



TF-TMVR
MitraClip NTR



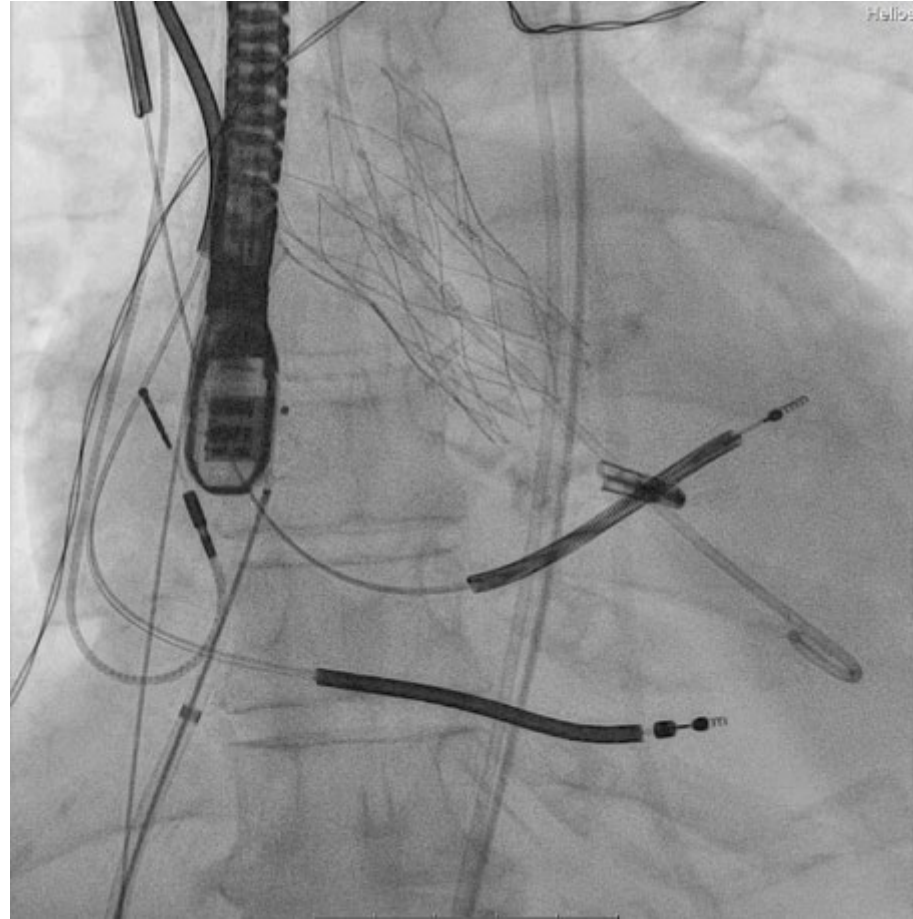
Septal Occluder
Amplatzer 10 mm



TAVI and TMVR

Postinterventional Course

- Procedure time: 126 min
- Extubated on OR table
- Uncomplicated postinterventional course
- Discharged at 6. POD
- Re-admission scheduled in 3 month for TR evaluation



thilo.noack@medizin.uni-leipzig.de