

Case presentation: Complications of valve in valve procedure

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Resident in Heart Surgery

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MY CAREER PATH

JAN BIDOVEC

DEPARTMENT OF HEART SURGERY, USZ

Year of residency	6 th	Field	Heart surgery
Position	Resident (Assistenzarzt)	Hospital	USZ

Interest/
hobbies

Surgery of thoracic aorta and aortic valve, TAVI
Sports: fencing/cycling/tennis

Career
path

Medical University in Ljubljana

1st residency
UKC Maribor

2nd residency
Inselspital Bern
Cardiovascular
surgery

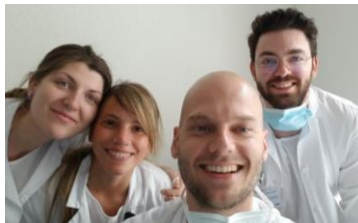
3rd residency
General surgery KS Thun

4th residency
Universitätsspital Zurich

The
people



Family & friends



Coworkers



Superiors



Sport

TAVI PROGRAM

DEPARTMENT OF HEART SURGERY, USZ

TAVI
Team



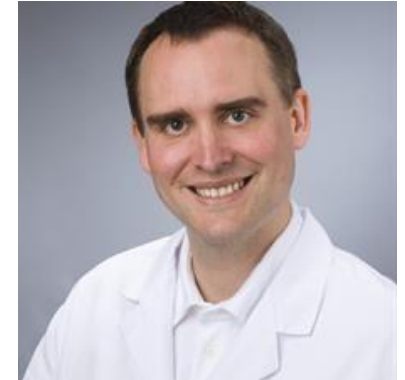
**Robert Bauernschmitt,
Prof. Dr. med.
Head of interventional heart
surgery USZ**



Dr. Philipp K. Haager



Dr. Lucas Jörg



Dr. Martin Schmiady



Dr. Michael Hoffmann

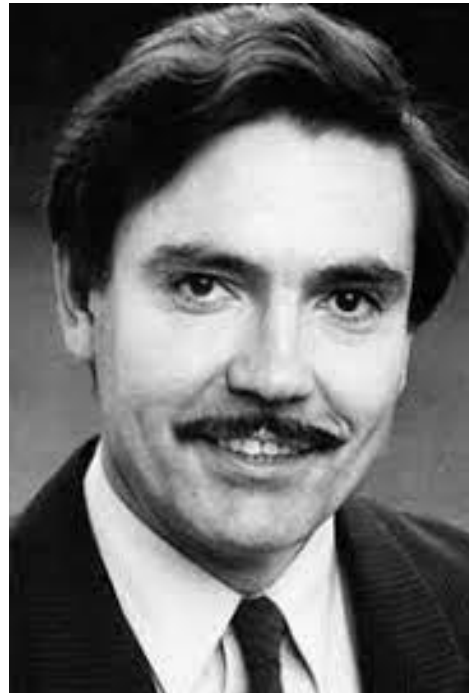


Dr. Jan Bidovec



Dr. Andreas Roland Grüntzig

16. September 1977: first coronary balloon angioplasty



TAVI PROGRAM

DEPARTMENT OF HEART SURGERY, USZ



TAVI PROGRAM

DEPARTMENT OF HEART SURGERY, USZ

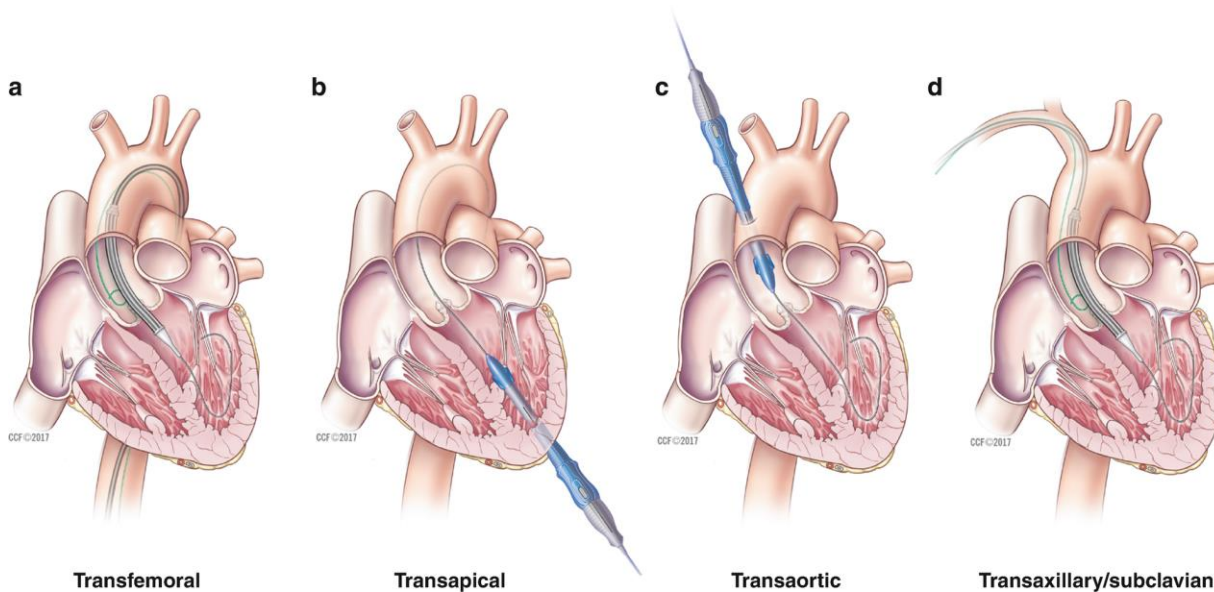


EXPERIENCE AND RESULTS IN PAST 24 MONTHS

# TAVIs implanted	Average age	Average ASA Score	Mean stay
• 226	• 79.2	• 3.3	• 6.7 days

ROUTE OF ADMINISTRATION

Route of administration	Number	Share (%)	Valve in Valve	Number	Share (%)
Transaortic	3	1.3 %	no	208	92 %
Transapikal	1	0.4 %	yes	18	8 %
Transfemorale	222	98.2 %	Total	226	100 %
Total	226	100 %			



TYPES OF IMPLANTED VALVES

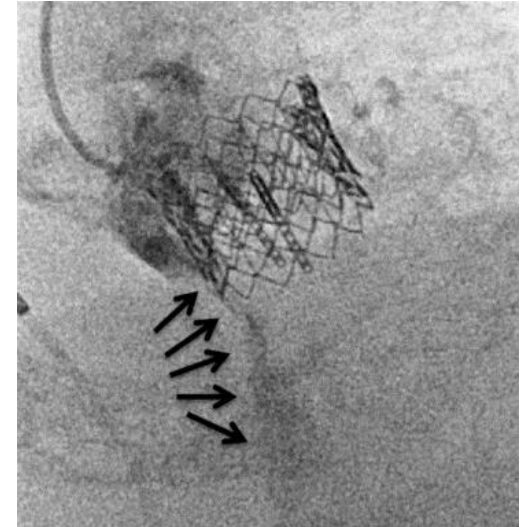


Prosthesis type	Number	Share (%)
Edwards Sapien Ultra	83	36.7%
Abbott Navitor	72	31.9%
Medtronic CoreValve Evolut	37	16.4%
Abbott Portico	17	7.5%
Allegra	14	6.2%
Boston Scientific Acurate Neo 2	3	1.3%
Total	226	100%

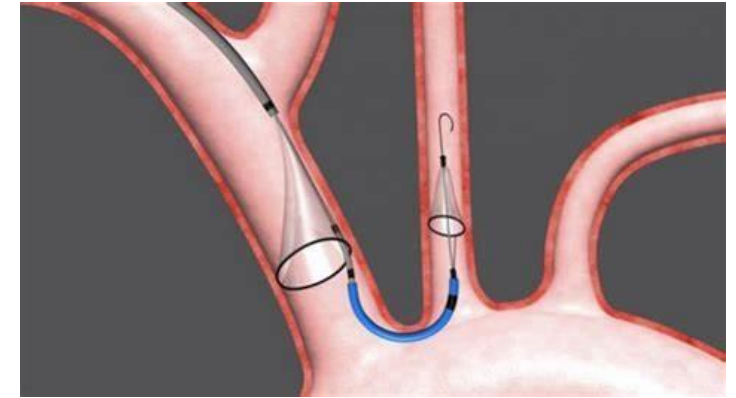


PARAVALVULAR LEAK

Leak	Number	Share (%)
No leak	187	82.7 %
Grad I°	30	13.3 %
Grad I-II°	5	2.2 %
Grad II°	1	0.4 %
Grad III°	1	0.4 %
NA	2	0.9 %



NEUROPROTECTION & CEREBROVASCULAR EVENTS

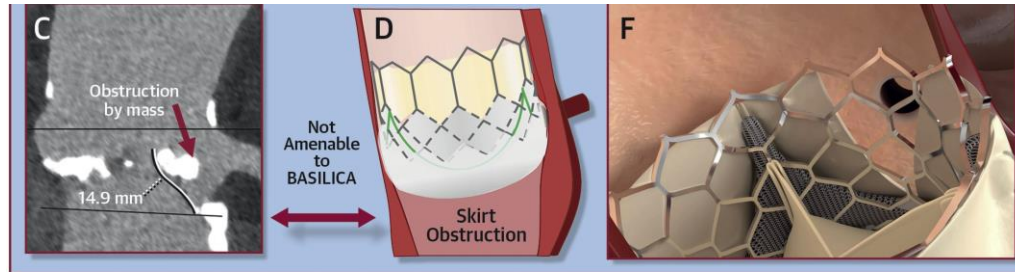


Neuroprotection	Number	Share (%)
No	114	50.4 %
Sentinel protection device	112	49.6 %
Total	226	100 %

Cerebrovascular events	Number	Share (%)
No	222	97.8 %
Yes	2	0.9 %
Yes (TIA)	1	0.4 %
After conversion	1	0.4 %
Total	226	100 %

ADVERSE EVENTS

Kidney injury	Number	Share (%)
yes	5	2.2 %
No	219	97.8 %
Total	127	100 %



Lederman, R.J. et al. J Am Coll Cardiol Intv. 2019;12(13):1197-216.



Myocardial infarction	Number	Share (%)
no	222	98.2 %
yes	2	0.9 %
REA	2	0.9 %
Total	226	100 %

ADVERSE EVENTS

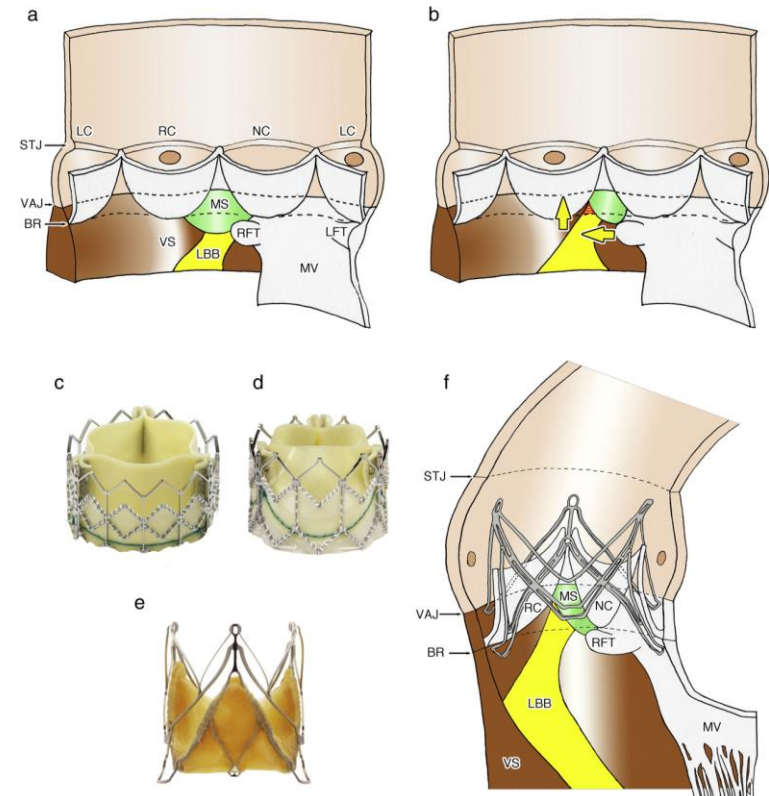
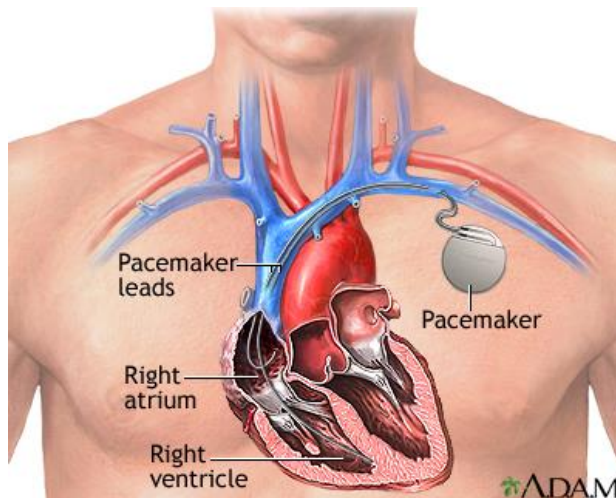
Bleeding	Number	Share (%)
No event	210	93 %
Haematoma	2	0.9 %
Yes	10	4.4 %
Yes – not related	1	0.4 %
Yes - VIABAHN ® Device	2	0.9 %
Yes-VIABAHN ® Device-dilatation	1	0.4 %
Total	226	100 %

Peripheral vascular occlusion	Number	Share (%)
no	224	99.1 %
yes	2	0.9 %

Use viabahn stent graft	8	3.5 %
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RATE OF PACEMAKER IMPLANTATION

Pacemaker	Number	Share (%)
no	208	92 %
yes	18	8 %
Total	226	100 %



30 - DAY MORTALITY RATE

30d Mortality	Number	Share (%)
N/A	10	4.42 %
no	212	93.81 %
yes	4	1.77 %
Total	127	100 %

Adjusted mortality **1.77%**

PATIENT HISTORY



68 year old female with **severe stenosis** of CoreValve Evolut pro 29mm prosthesis 4 years post-implantation

NYHA III-IV and **reoccurring lung oedemas**

Left ventricular **ejection fraction of 32%**, a gradient over TAVI prosthesis **dP_{mean}/max 53/77mmHg**, AV max 4.39m/s, AVA 0.72cm², 0.34cm²/m², LVOT 21mm and a moderate mitral valve insufficiency

Diffuse coronary sclerosis without relevant stenosis

COMORBIDITIES

CvRF: Adiposity Gradus III (BMI 45.5), arterial hypertension, dyslipidemia, typ II diabetes

COPD Gold II

Obstructive sleep apnea

Full obliteration of truncus brachiocephalicus with subclavian steal phenomenon

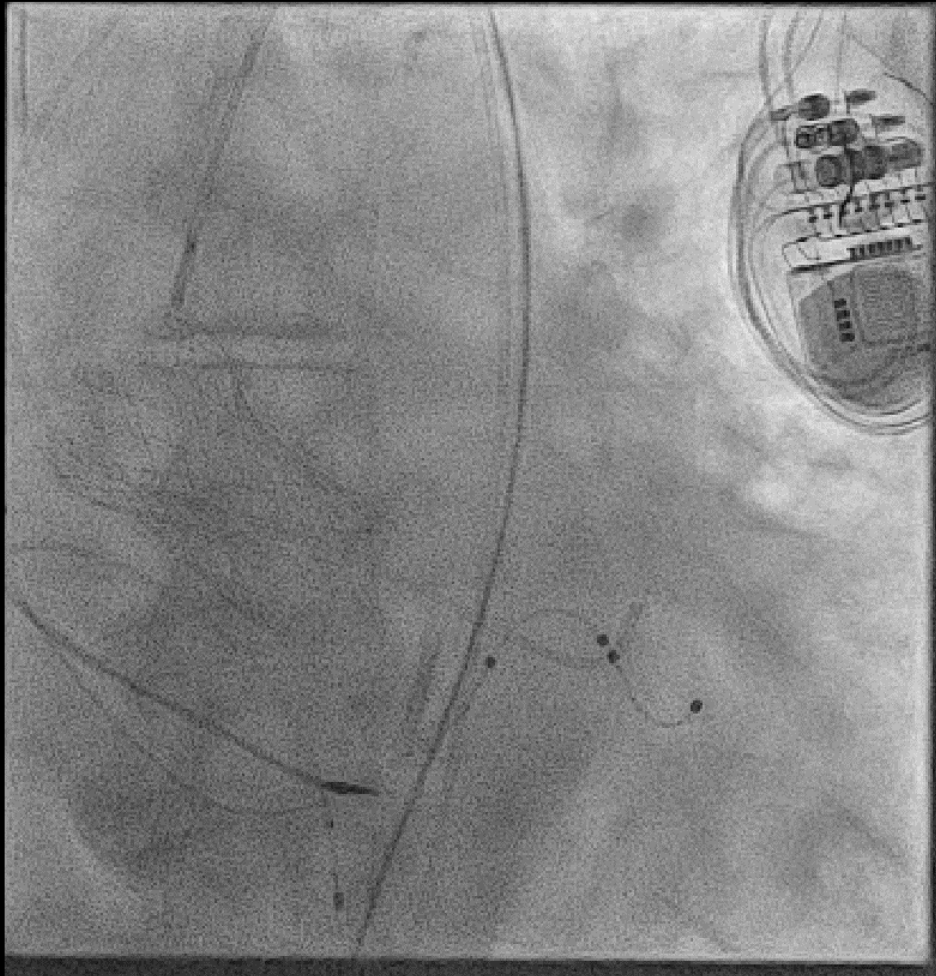
Implantation of CRT-P due to dis-synchronous rhythm

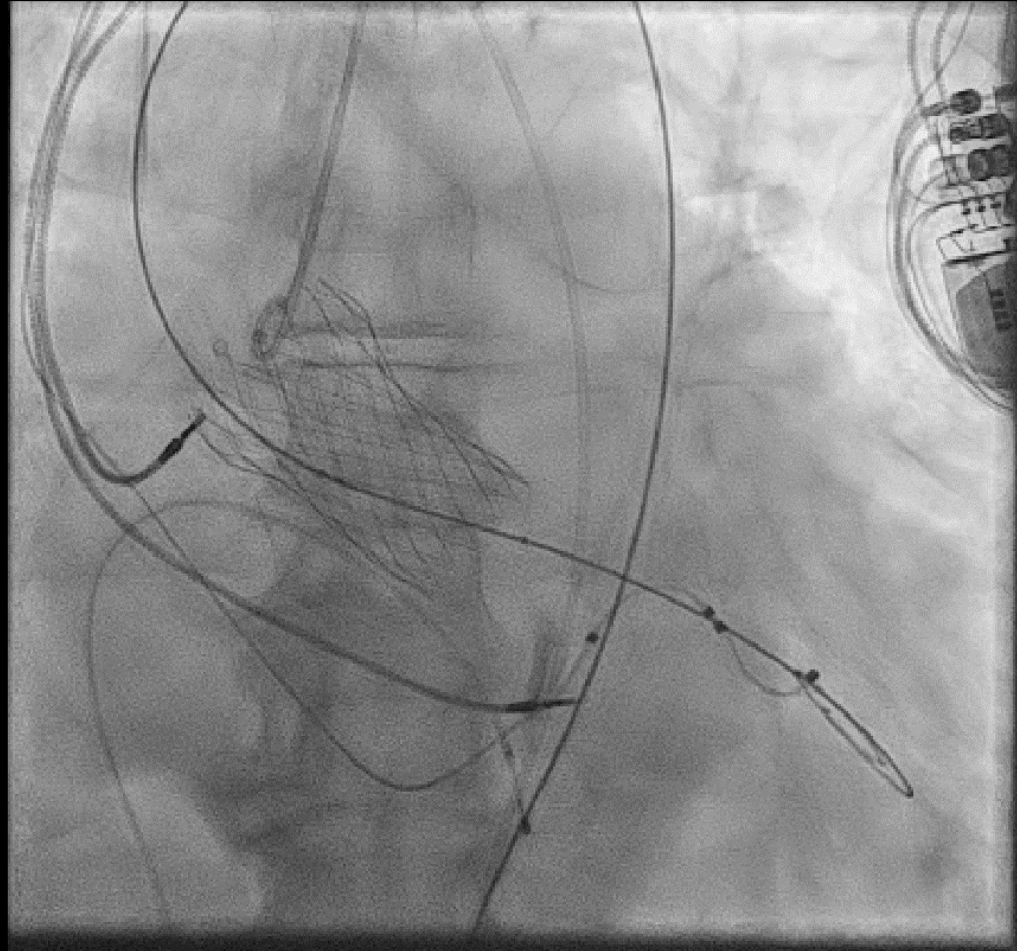
Mastectomy in 2016 after breast cancer without signs of reoccurrence

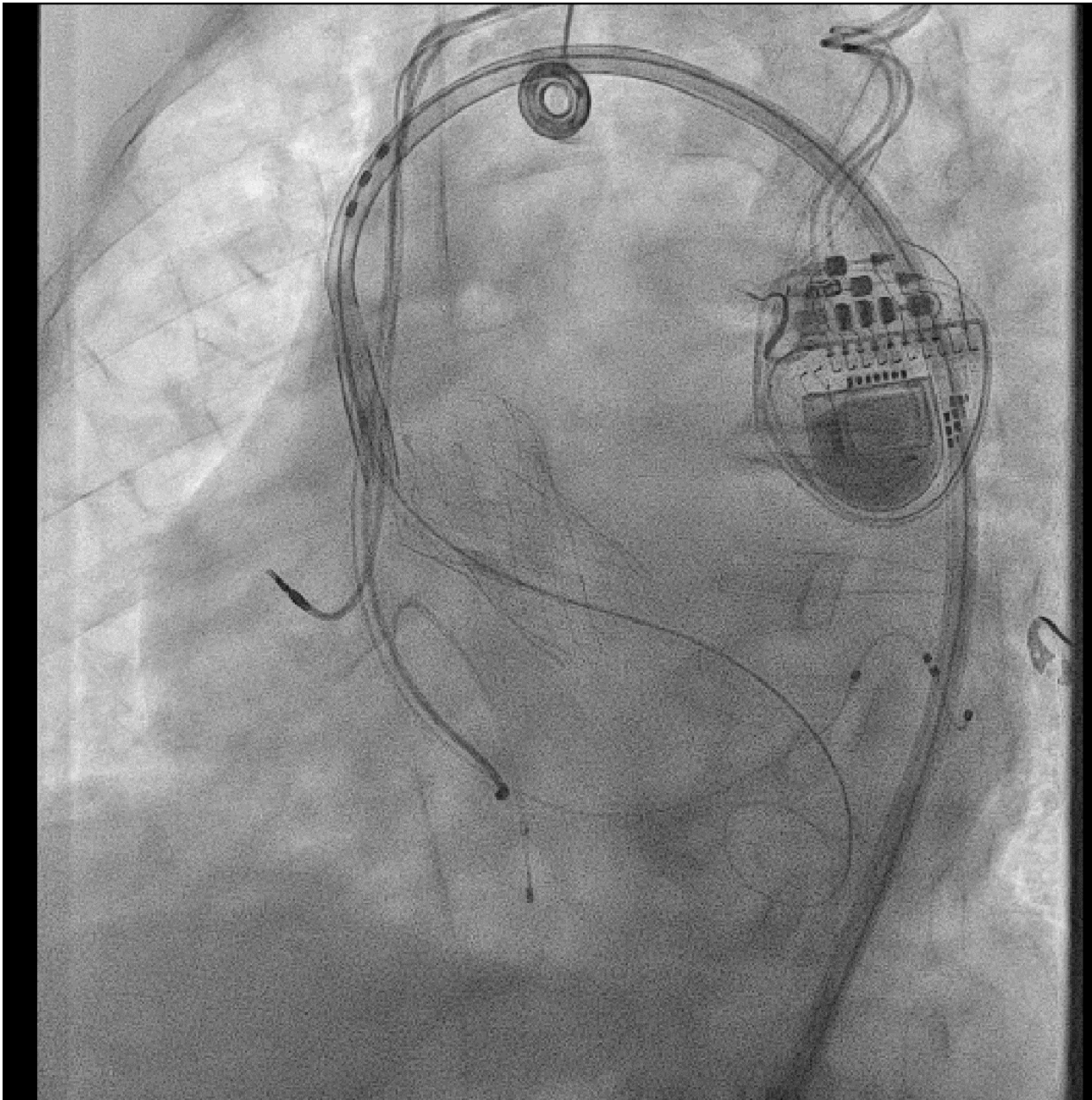
PROCEDURE

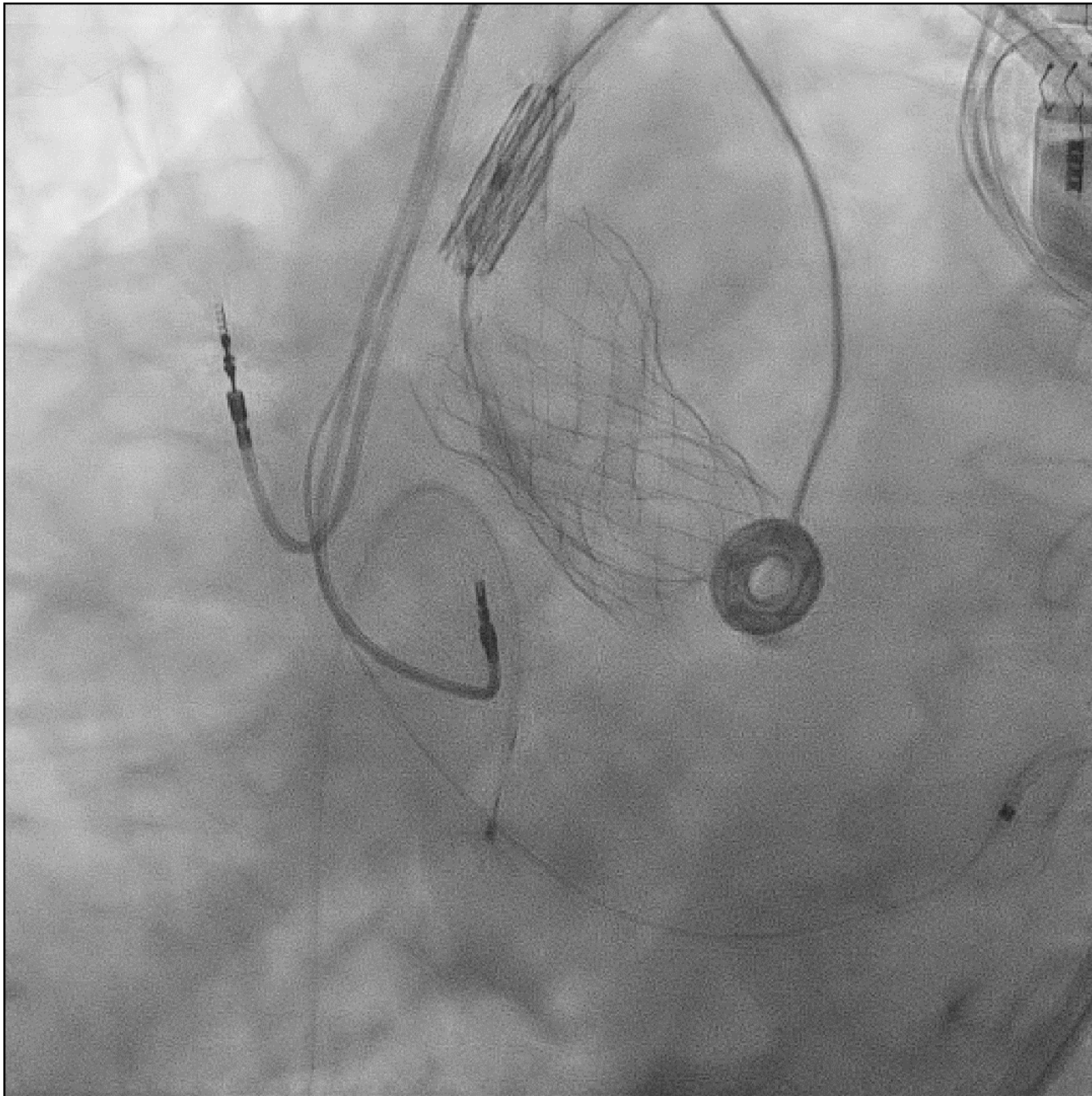
Aim to implant the Star Edwards Sapien balloon expandable valve in a previously implanted Core valve Evolut pro 29mm prosthesis











OPERATIVE CONVERSION

TAVI
explantation

Aortic valve
replacement

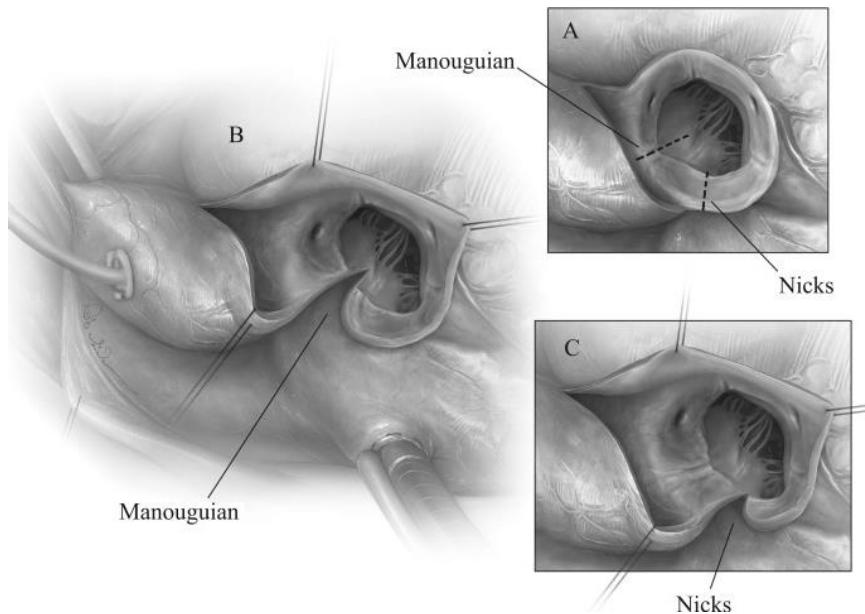
Non coronary
sinus
reconstruction

LVOT
enlargement

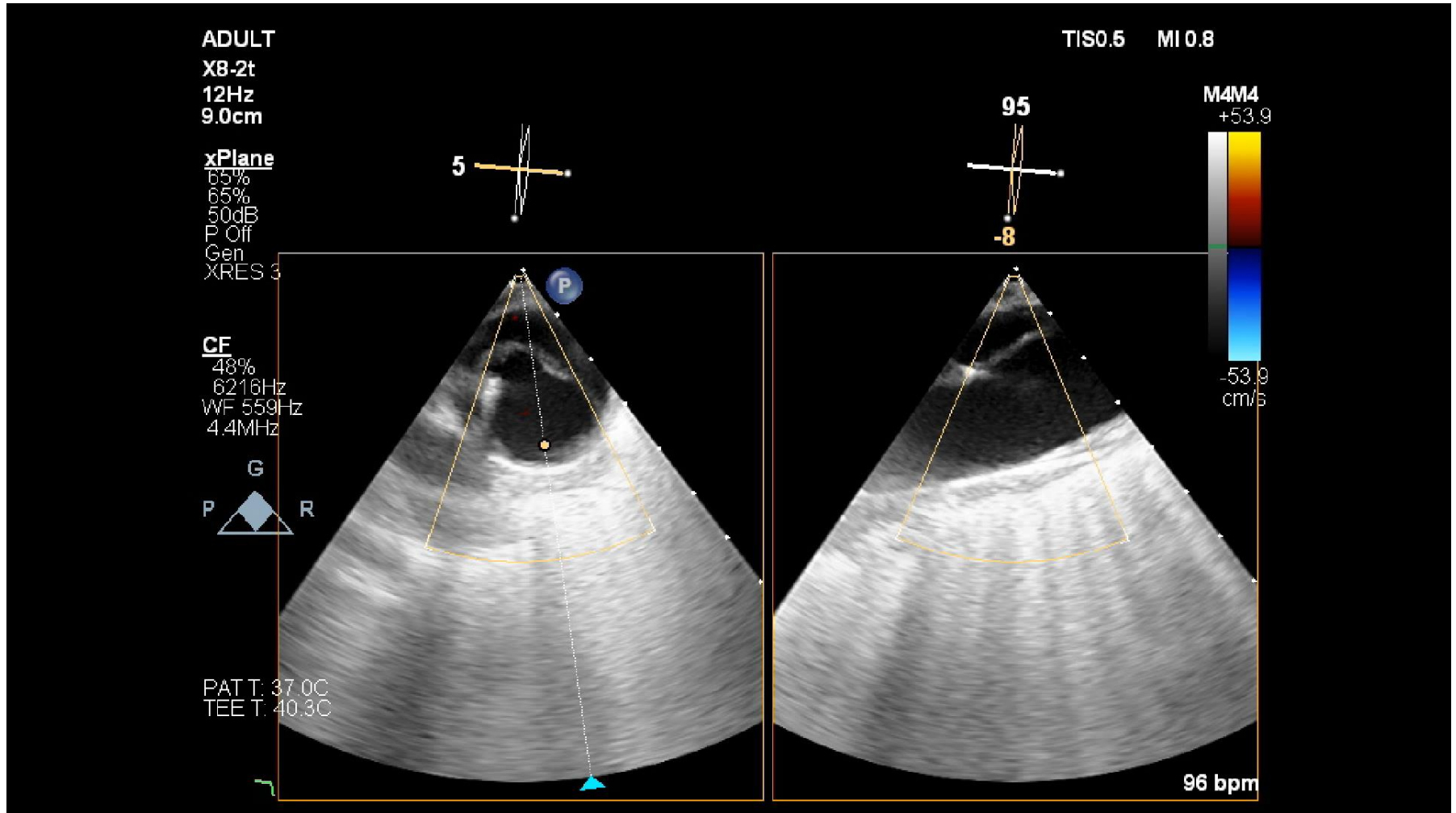
Replacement
of aorta
ascendens

IABP

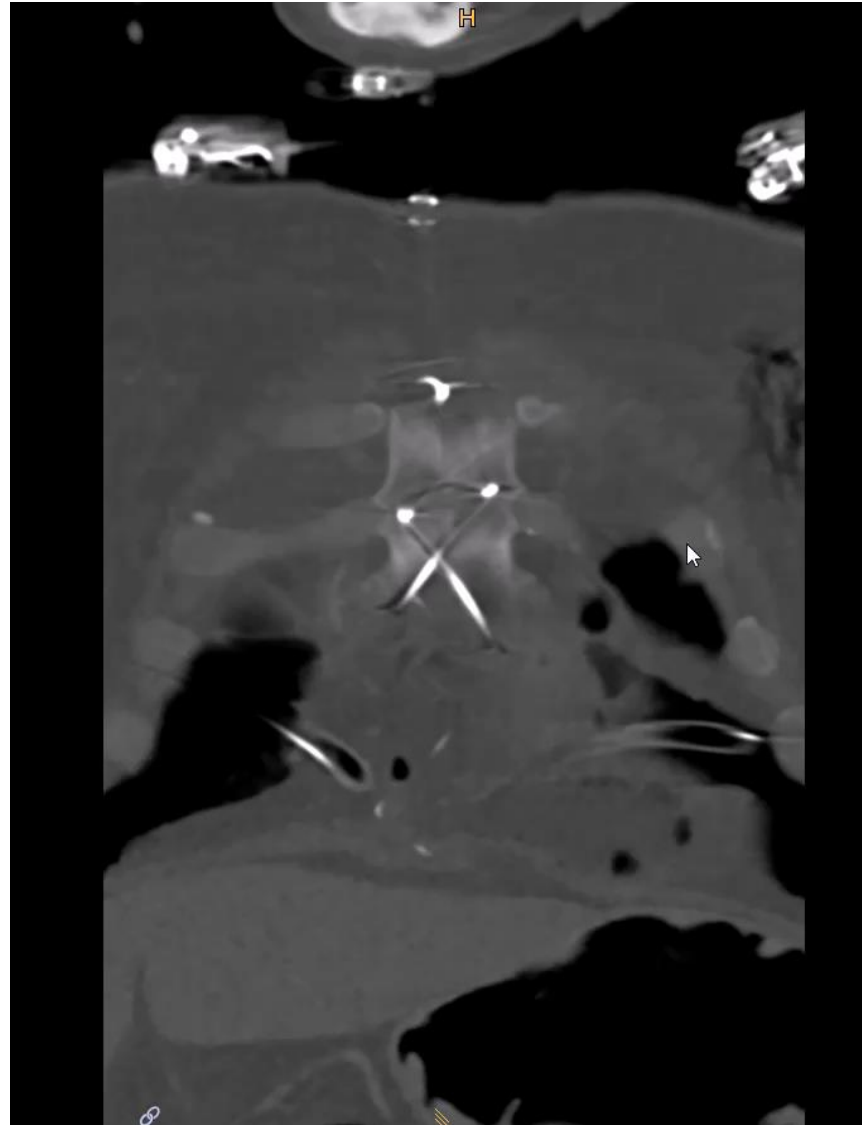
Open chest
treatment



INTRAOPERATIVE ECHO



POSTOPERATIVE CT SCAN



POSTOPERATIVE COMPLICATIONS

1. Type B aortic Dissection
2. Infratentorial ischemia left (Aphasia, Hemiplegia)
3. Prolonged respirator weaning and pneumothorax left
4. AKIN 1
5. Occipital decubitus

KEY MESSAGES

TAVI procedures should be performed in specialized institutions with availability of heart surgery on site

TAVI should be performed preferably with surgery and cardiology cooperation

In complex patients availability of TEE on site

Thank you for your attention

