

Transcatheter Mitral Valve Implantation vs. Conventional Redo Surgery for Degenerated Mitral Valve Prosthesis



Introduction

Herzzentrum Coswig, Klinik für Herz- und
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- **Redo mitral valve replacement (redo-MVR) is gold standard** treatment for degenerative mitral valve prosthesis
- **Transcatheter techniques: valve-in-valve (ViV) or valve-in-ring (ViR)** have emerged as **alternative to redo surgery** in failed mitral bioprostheses and rings.
- Experiences with ViV or ViR in mitral position are limited.
- **Comparative outcome data** of both treatment options – mitral ViV / ViR versus redo-MVR – **are rare**.

Baseline characteristics	ViV/ViR, n=10	RedoMVR n=11	p
age, y $\pm$ SD	79,1 $\pm$ 3,1	70,3 $\pm$ 6,6	<0,05
female gender, n	5	5	
logistic EuroSCORE I, % $\pm$ SD	37,5 $\pm$ 4,1	38,3 $\pm$ 5,9	n.s.
STS SCORE, % $\pm$	8,5 $\pm$ 2,1	9,8 $\pm$ 1,9	n.s.
previous CABG, n	5	6	
previous AVR, n	3	0	
prior stroke/TIA, n	2	1	.
COPD, n	2	2	
EF < 30%, n	2	4	
adipositas, BMI > 30	6	6	
pulm. hypertension	7	4	

11 patients

Parameter	n
preop CT scan	11
full sternotomy	11
CPB installed prior to sternotomy	8
Bretschneider crystalloid cardioplegia	11
access left atrium/transseptal	4/7

Parameter	ViV/ViR	Redo-MVR	p
previous Mitral Prostheses Valve/Ring, n	8/2	9/2	-
valve size implanted, mm +/- SD	27,2+/-1,8	29,3+/-2,1	<0.01
duration of surgery	93,5+/-19,6	261+/-27,2	<0.001
cardiopulmonary bypass time, min± SD	n/a	148+/-20,9	-
aortic cross clamp time, min± SD	n/a	78,0+/-10,3	-
additional PTCA/CABG, n	3	3	-
additional Aortic Valve Replacement	1	1	-

Previous Mitralprostheses	ViV/ViR “Mitralprostheses”
SJM 33	Edwards S3 29
Physio Ring 32	Edwards S3 29
Perimount 27	Edwards XT 29
Perimount 25	Edwards S3 23
Physio Ring 30	Edwards XT 26
Perimount 29	Edwards XT 29
Perimount 27	Edwards S3 26
Perimount 27	Edwards S3 26
Perimount 27	Edwards S3 26
SJM Epic 33	Edwards S3 29

Parameter	ViV/ViR n=10	Redo-MVR n=11	p
hospital deaths	2	2	-
first day extubated	8	7	-
ventilation > 10 days	1	4	<0.01
postop neurological deficit	1	2	-
postop pacemaker	2	1	-
Postop hospital stay (days)	12,5+/-1,7	16,8+/-2,3	<0.01
death during follow up (mean 29,2+/-7,2)	1 (neoplastic disease)	0	-
NYHA class I or II postop	7	7	-

Female, 78 years

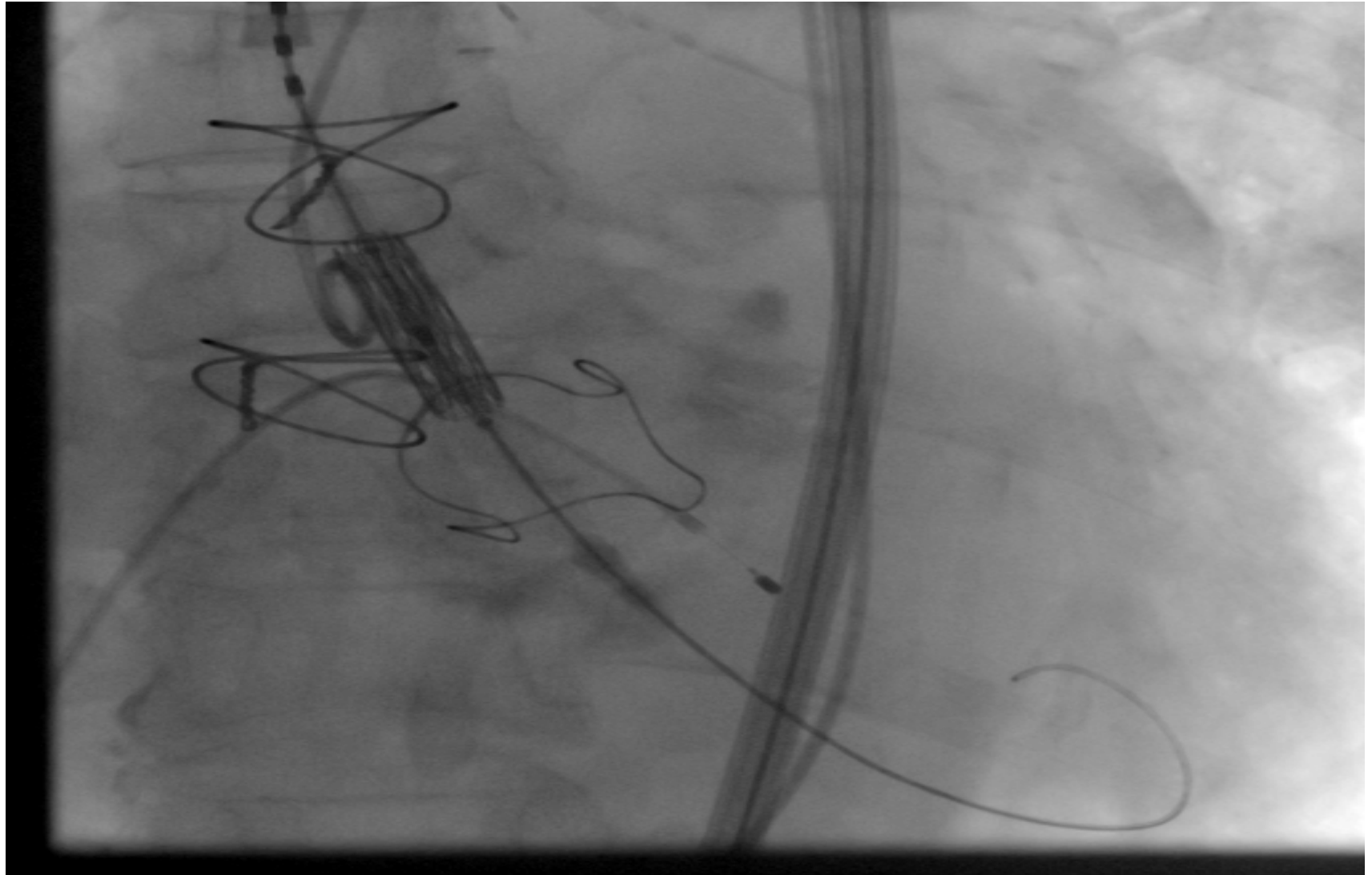
Diagnoses:

- ***Mitralprosthesis Stenosis and Insufficiency, with 2 leaflet perforations***
- ***Aortic Valve Stenosis***
- **Re-MVR 2001**, Baxter CE S.A.V. 27(biological)
- Cerebral bleeding and trepanation 2001
- **MVR 1995** (SJM 29 mechanical)
- **Digital Mitral Valvuloplasty** cause of Rheumatic Stenosis **1976**
- Pulmonary hypertension
- Peripheral sclerosis
- Atrial fibrillation
- Renal insufficiency
- Rheumatic Arthritis

Bulbography prior TAVI

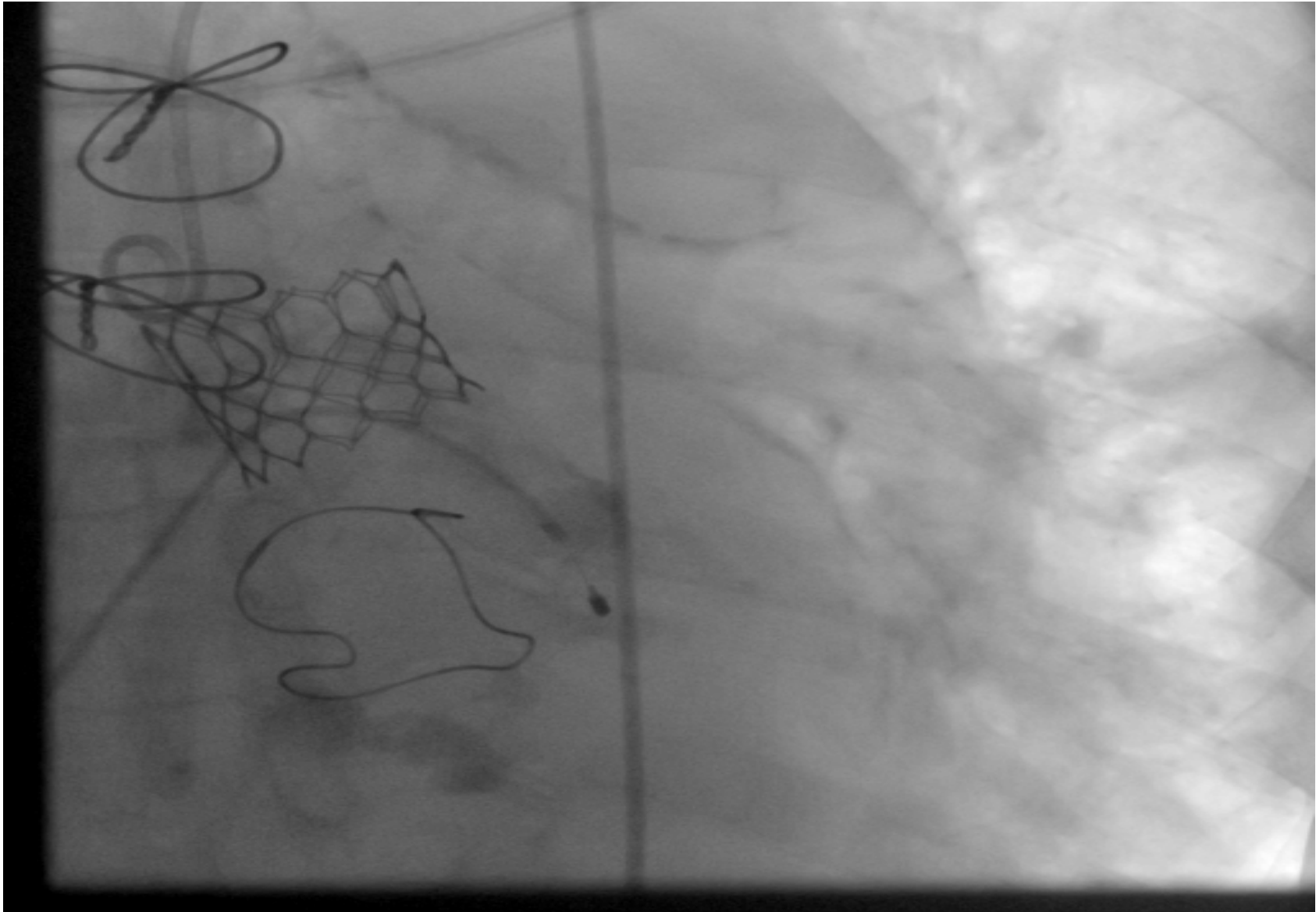


TAVI 09/11/2017

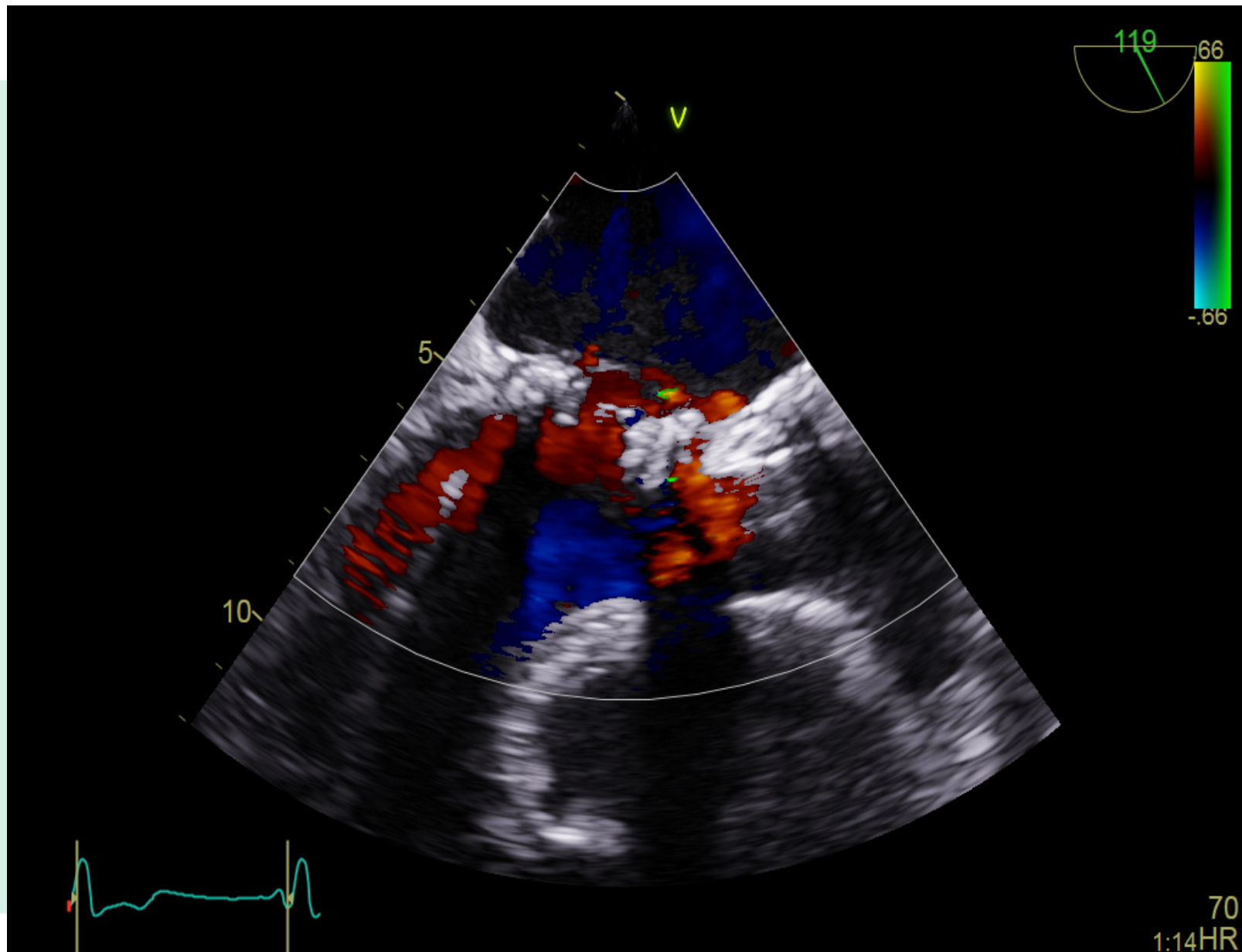


Edwards S3
Size 26

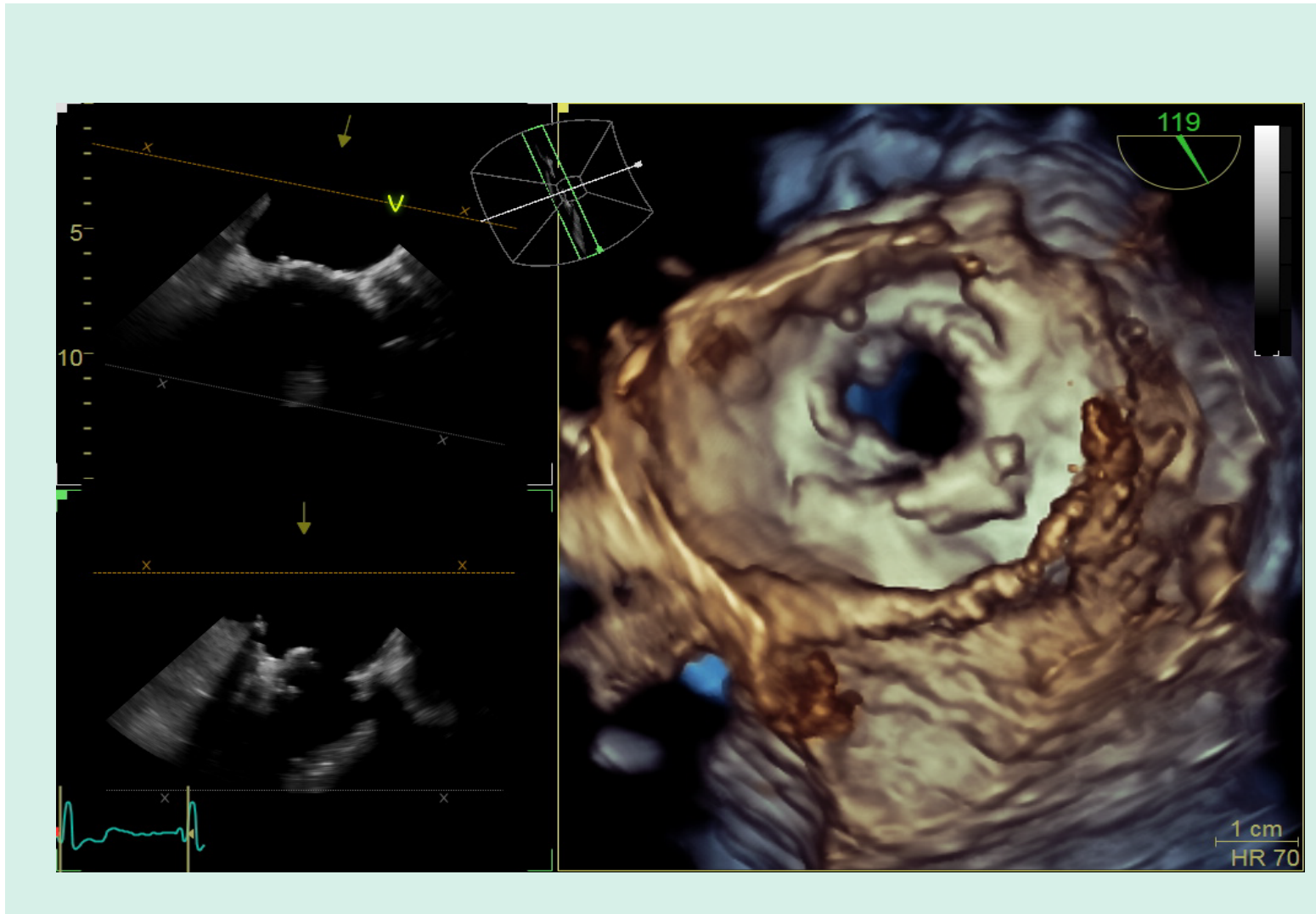
Control after TAVI



Mitral Valve Prosthesis prior to ViV

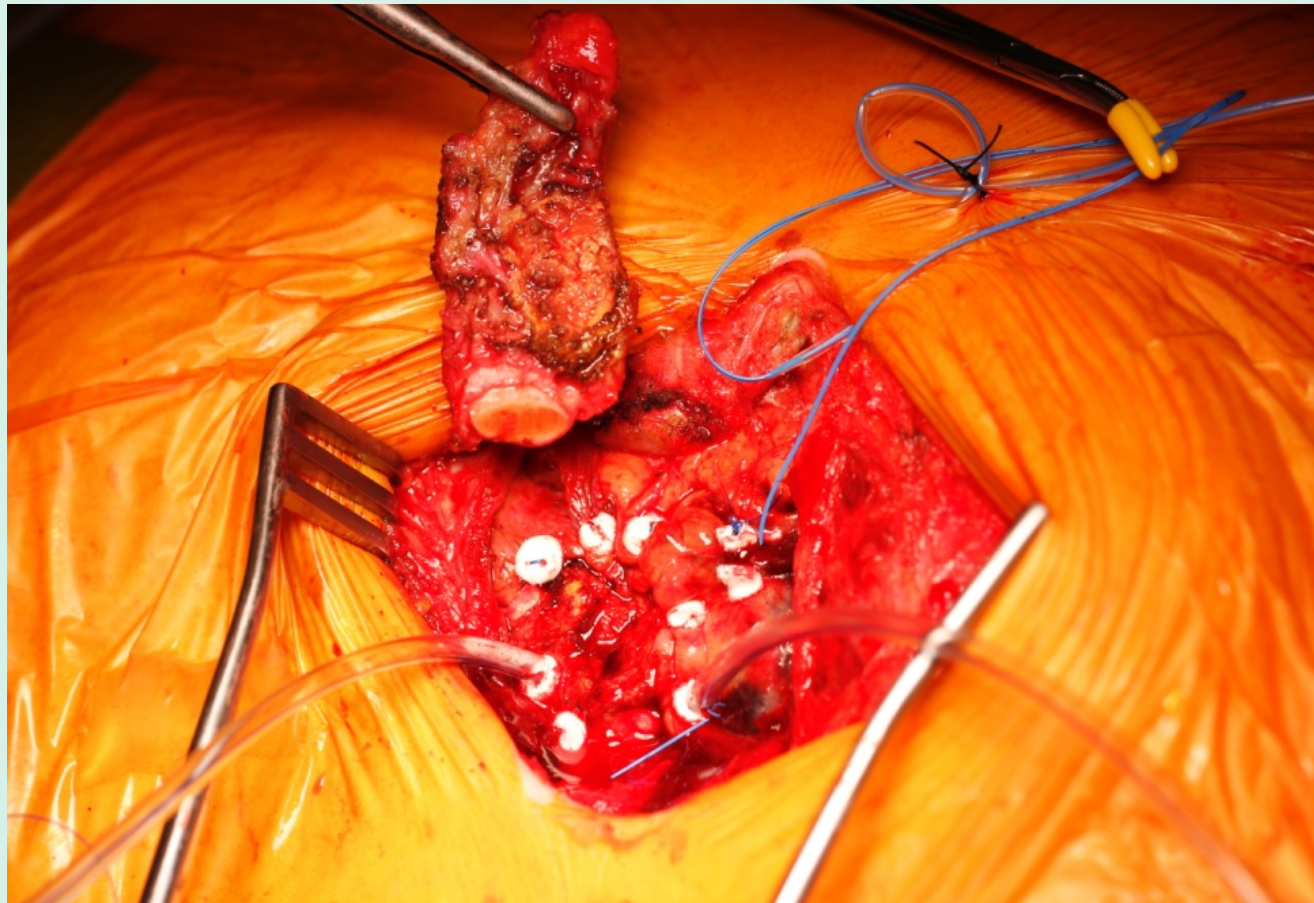


MV prior to ViV 3-D Echocardiography



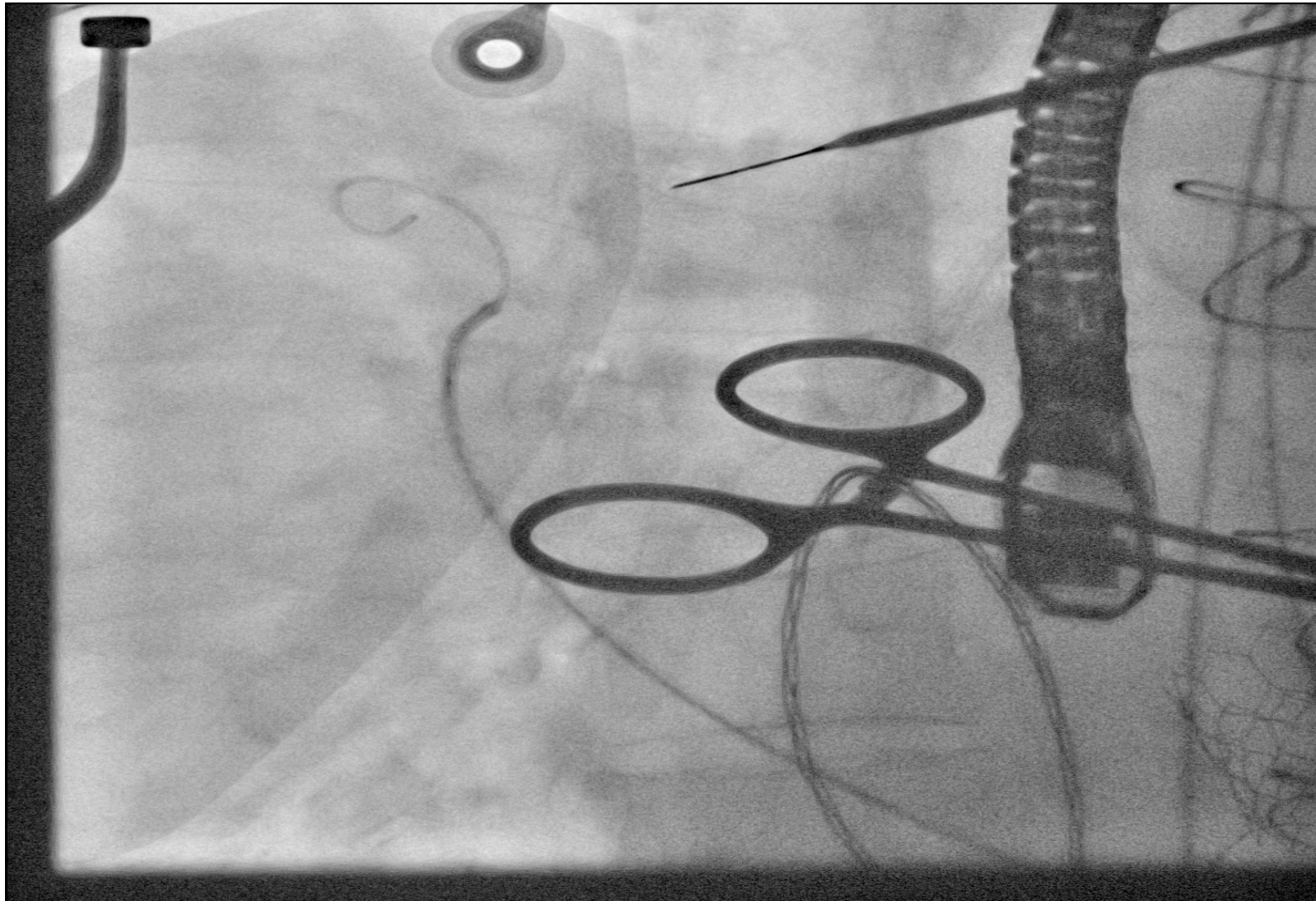
X-Ray prior to ViV



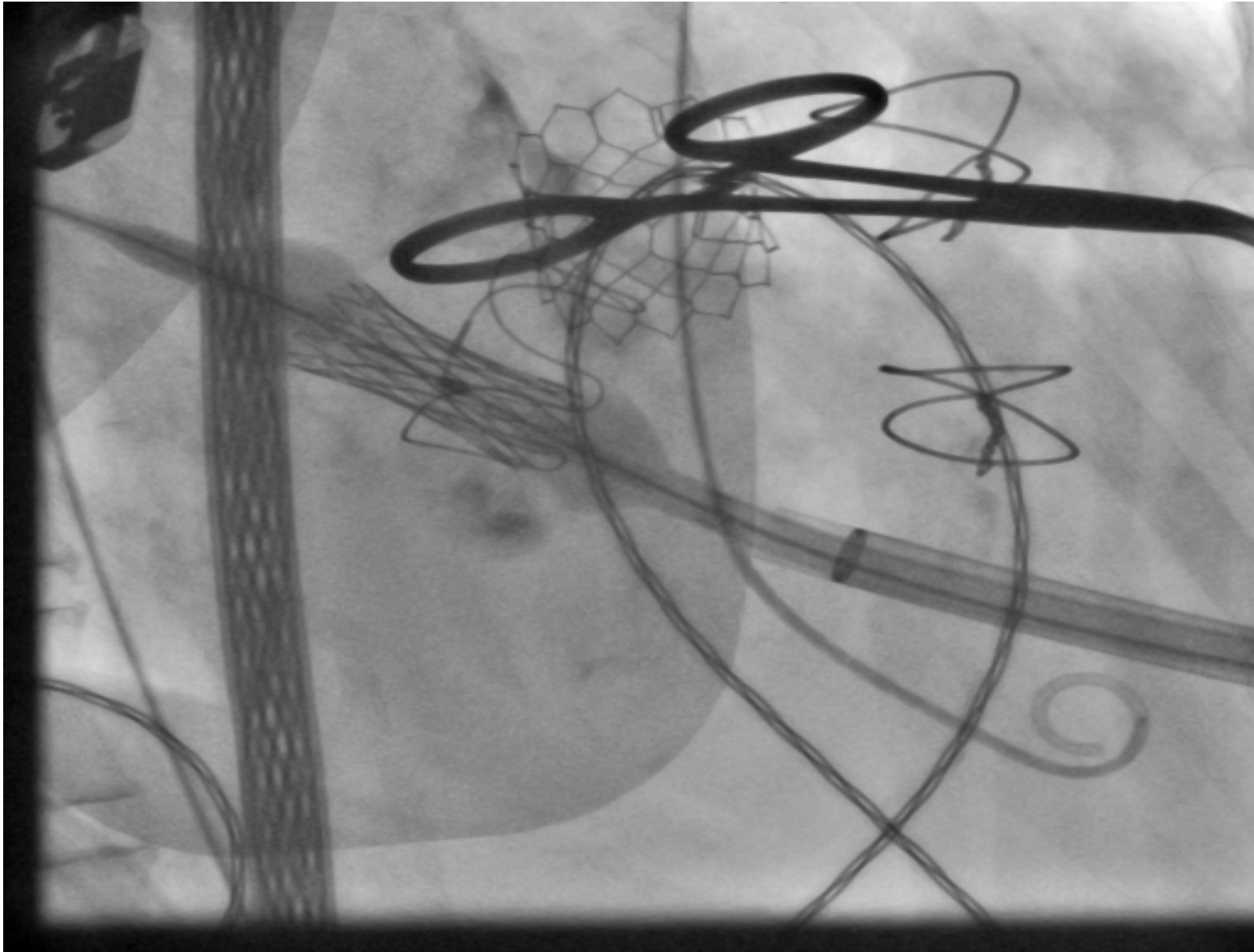


Resection of the 5th Rip

Catheterization of the Mitralvalve Prosthesis

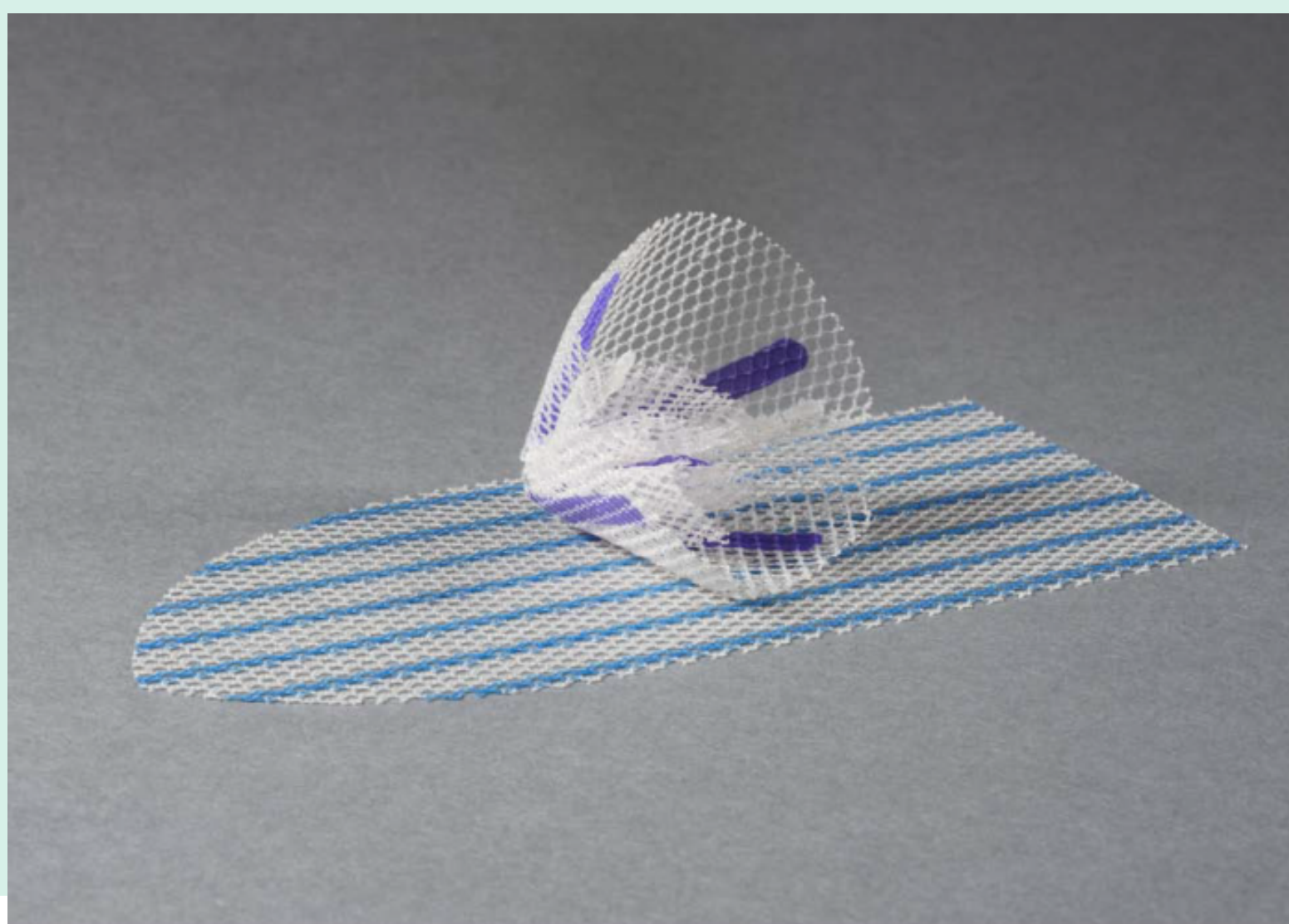


Mitral ViV Implantation

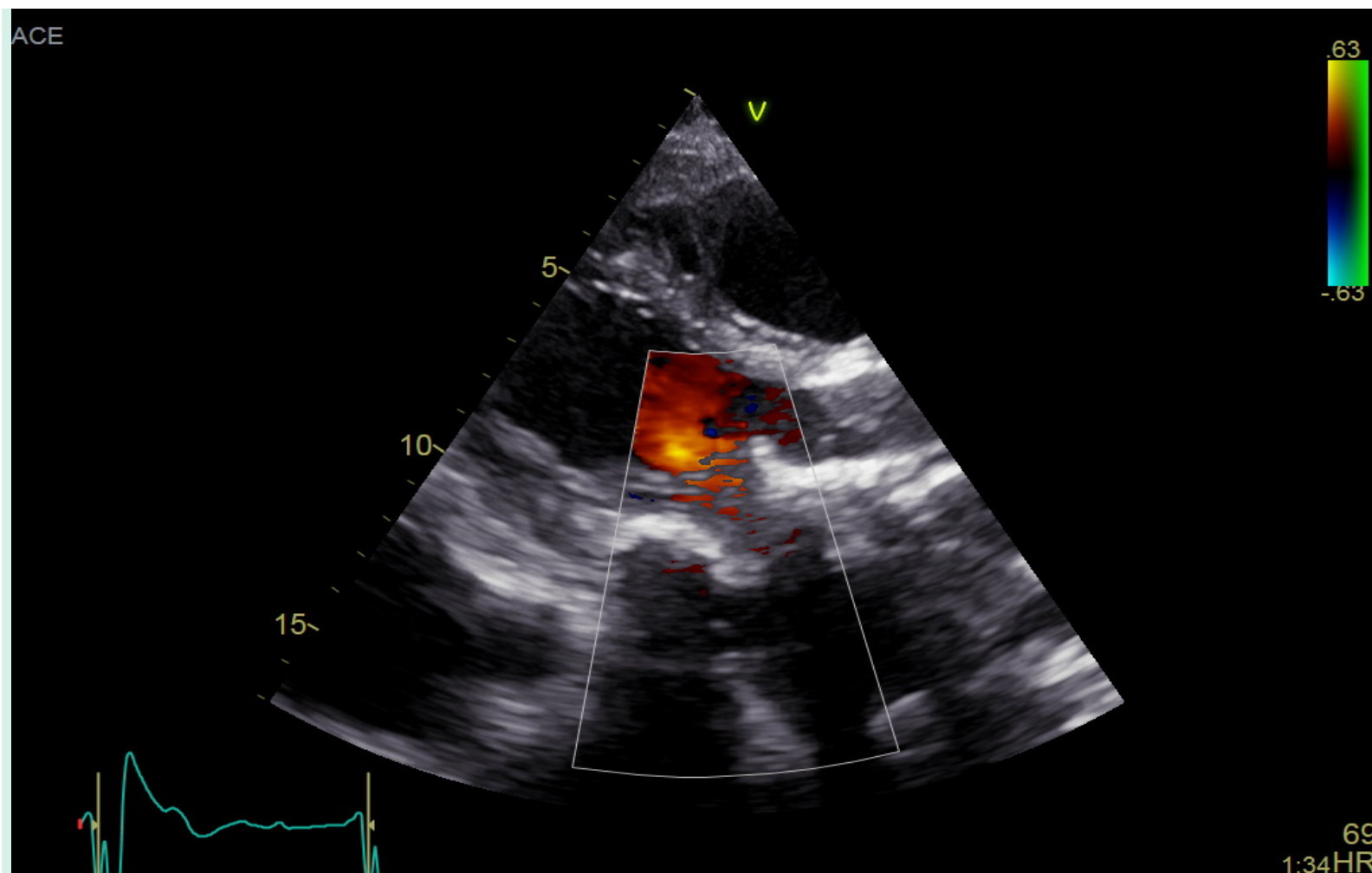




Thorax Closure with Polypropylen Net



Postop Echocardiography



„Lucky Couple“

12 days
postop



- **In patients with degenerated mitral valve prothesis Valve in Valve transcatheter treatment and Redo-Surgery offer reasonable results**
- **The choice of the appropriate therapy is always individual in these complex cases and depends on the experience of the Heart - Team**
- **In our hands, the Mitral ViV/ViR procedure resulted in a shorter hospital stay than in patients where we performed a redo-operation.**
- **The transseptal access has to be considered also.**
- **„The Mitral ViV makes Re-Do MVR great again“**

