

Mitrální vady – současné možnosti léčby z pohledu intervenčního kardiologa

MUDr. Marian Branny, PhD

Kardiovaskulární oddělení Interní a kardiologické kliniky FN Ostrava

Lékařská fakulta Ostravské Univerzity

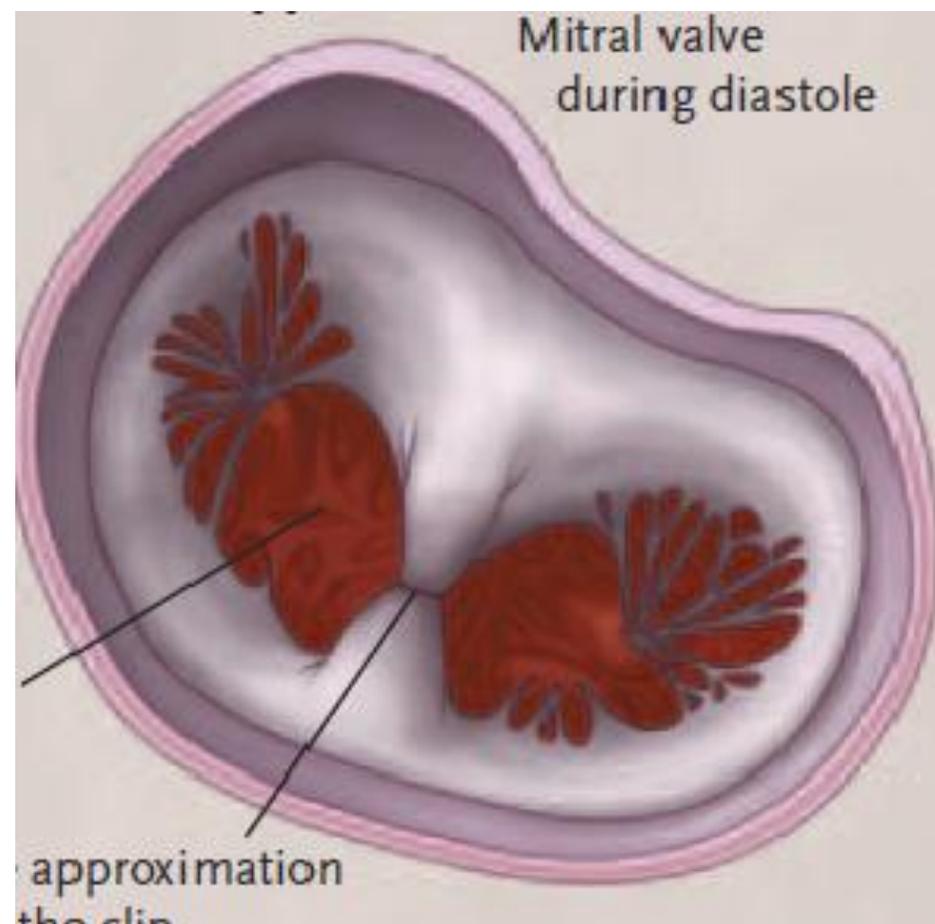
Hradec Králové, 13.3.2026

Portfolio katetrizačních intervencí na mitrální chlopni

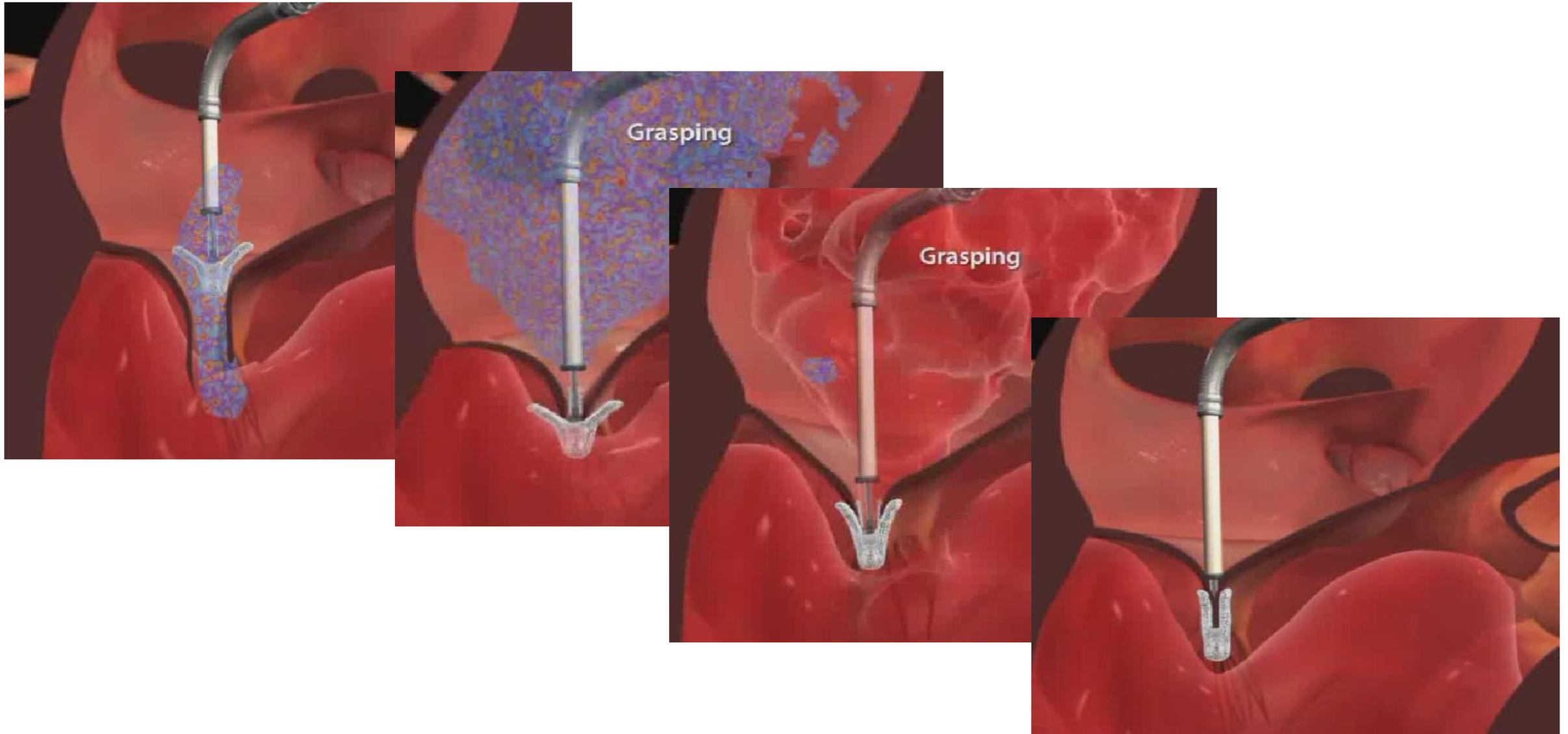


Mitrální regurgitace – léčba

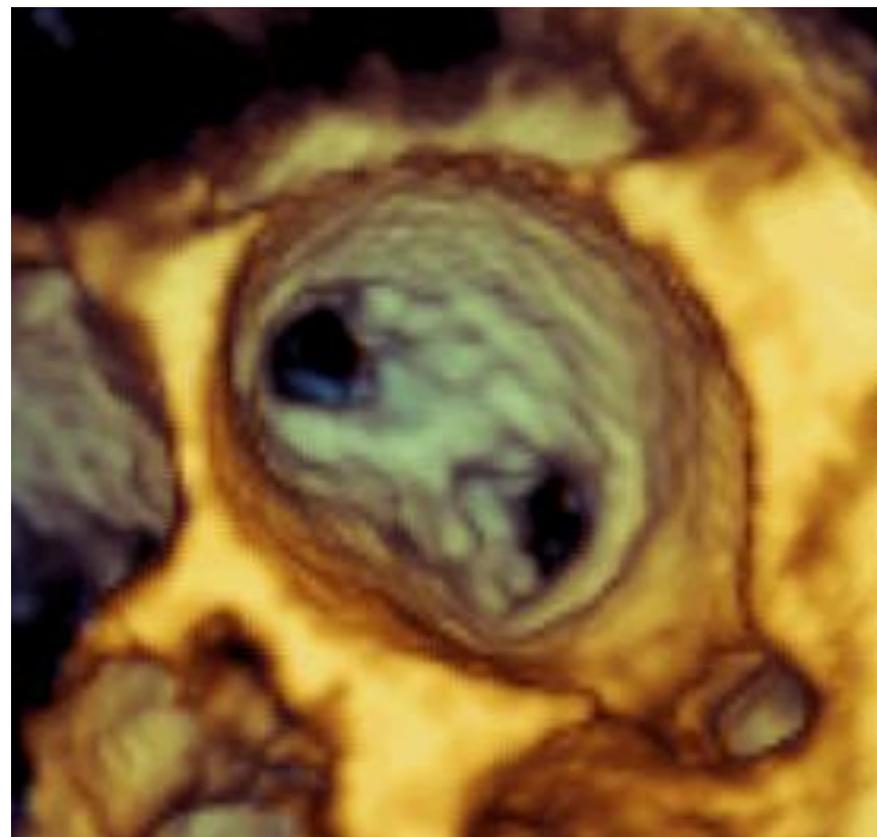
Katetrizační



MitraClip – léčba mitrální regurgitace

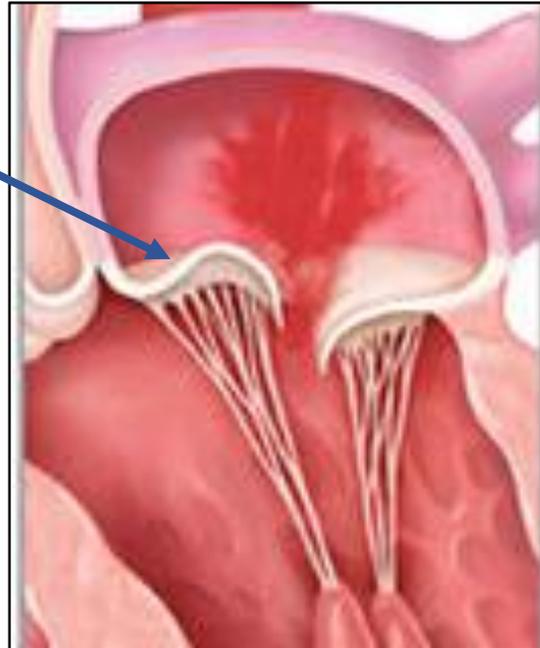


MitraClip



Primární mitrální regurgitace - symptomatická

prolaps



2021

TEER may be considered in symptomatic patients who fulfil the echocardiographic criteria of eligibility, are judged inoperable or at high surgical risk by the Heart Team and for whom the procedure is not considered futile. ^{299–302}

IIb

B

2025

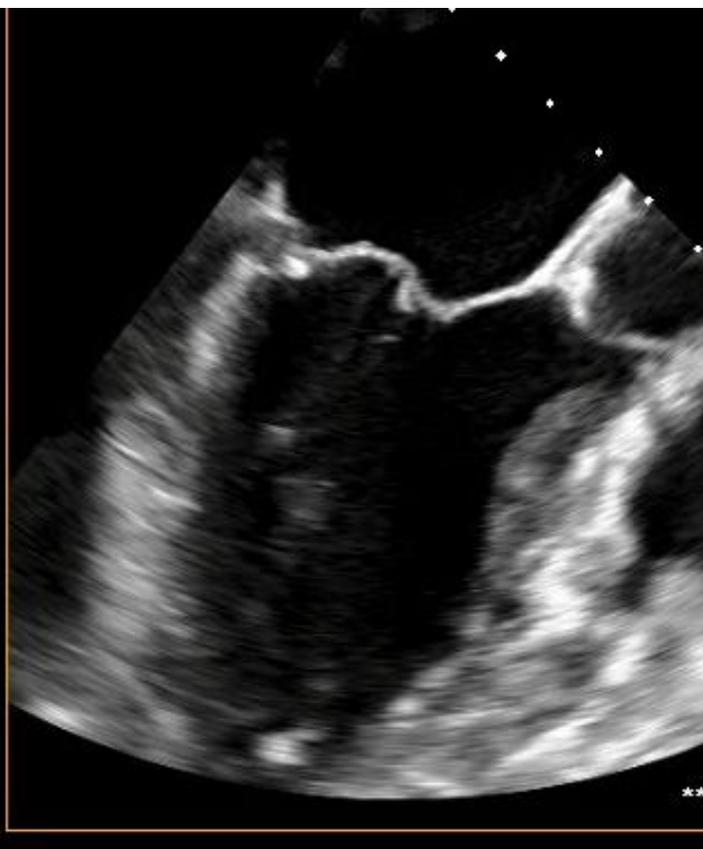
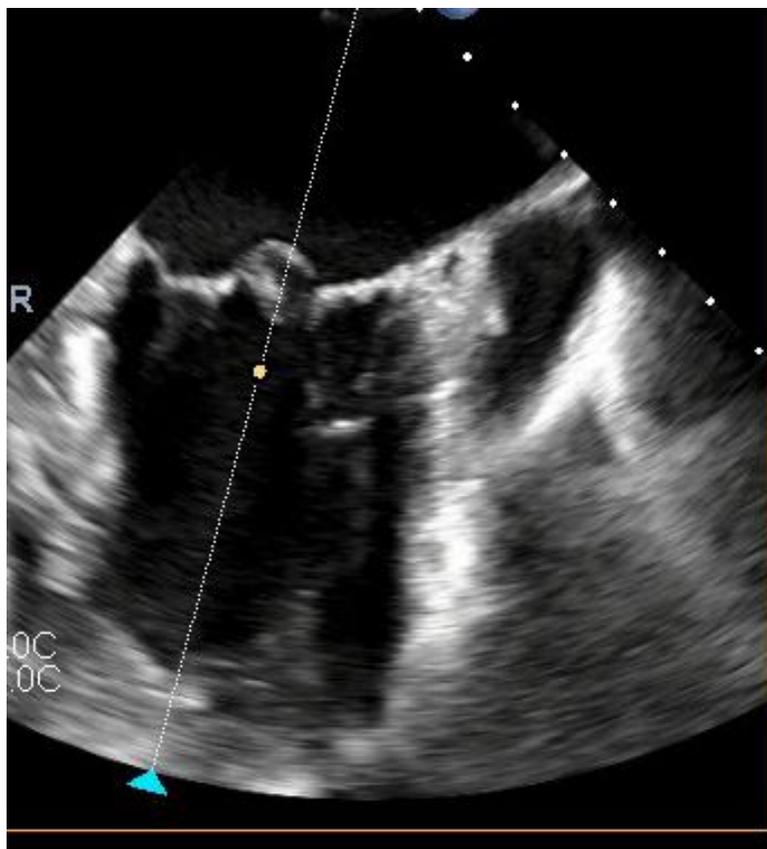
TEER should be considered in symptomatic patients with severe PMR who are anatomically suitable and at high surgical risk according to the Heart Team. ^{538,540,566}

IIa

B

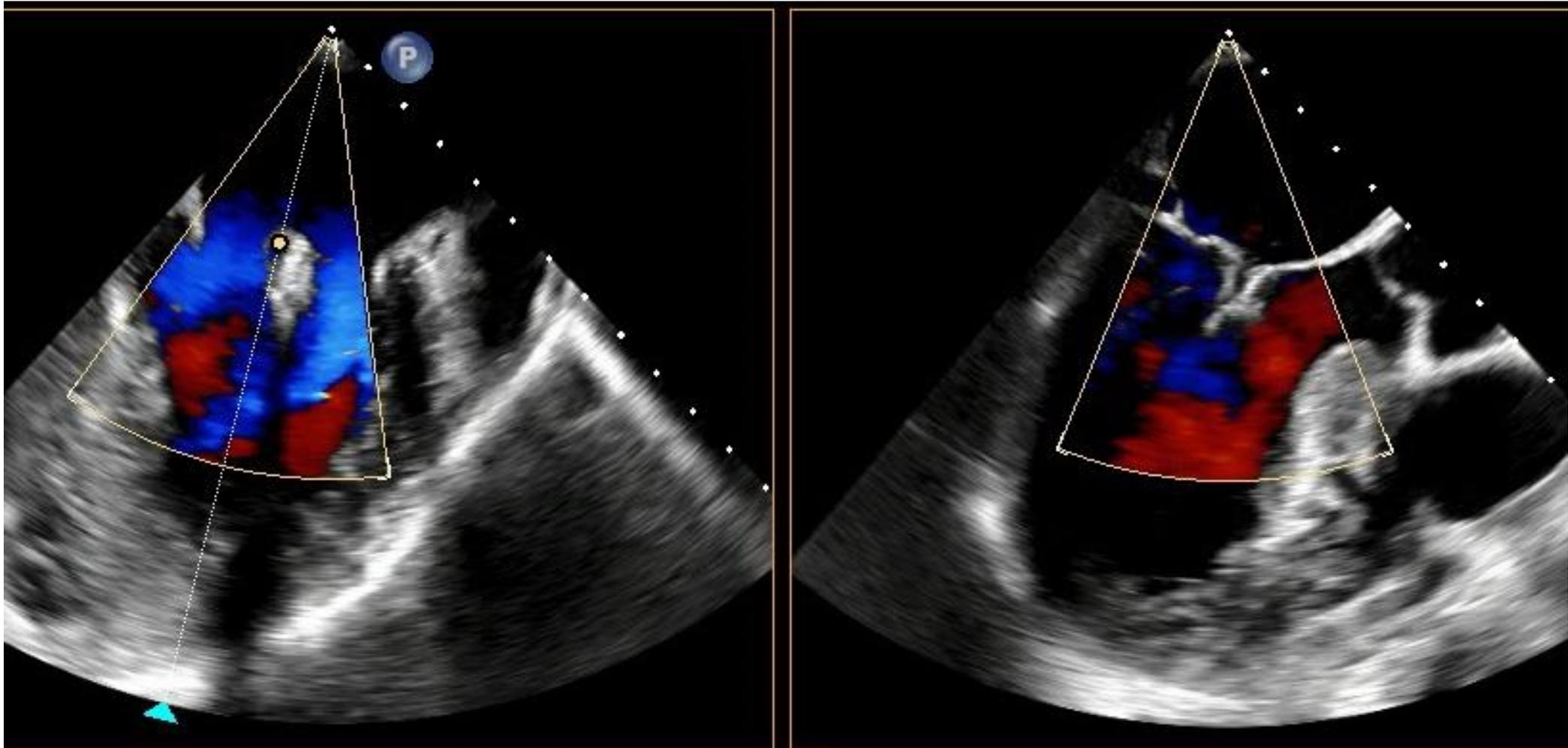
Primární mitrální regurgitace – prolaps Mi chlopně

Před léčbou M-TEER



Primární mitrální regurgitace – prolaps Mi chlopně

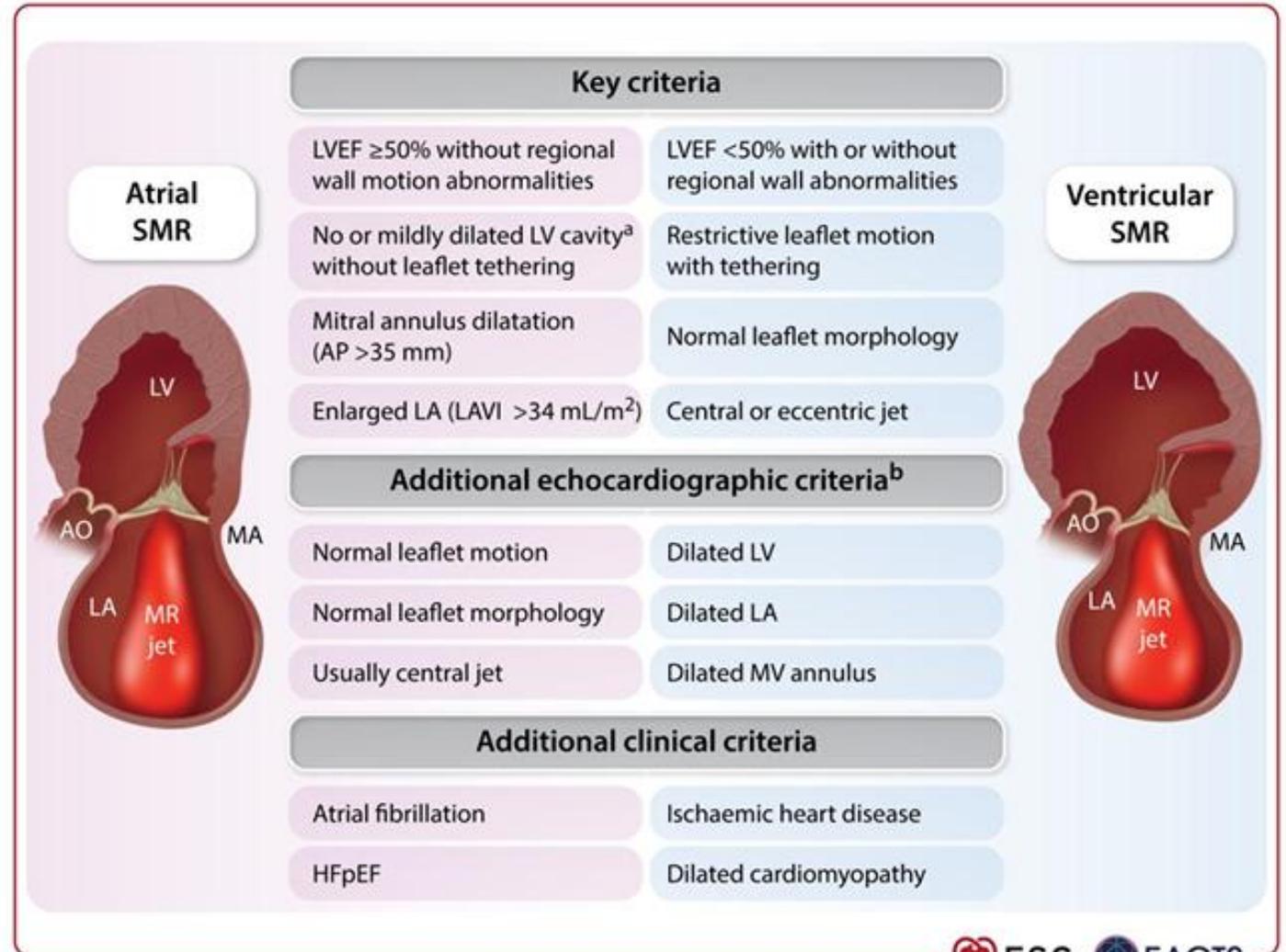
Po léčbě M-TEER



Sekundární mitrální regurgitace



Dilatace anulu



Sekundární atriální mitrální regurgitace

2025

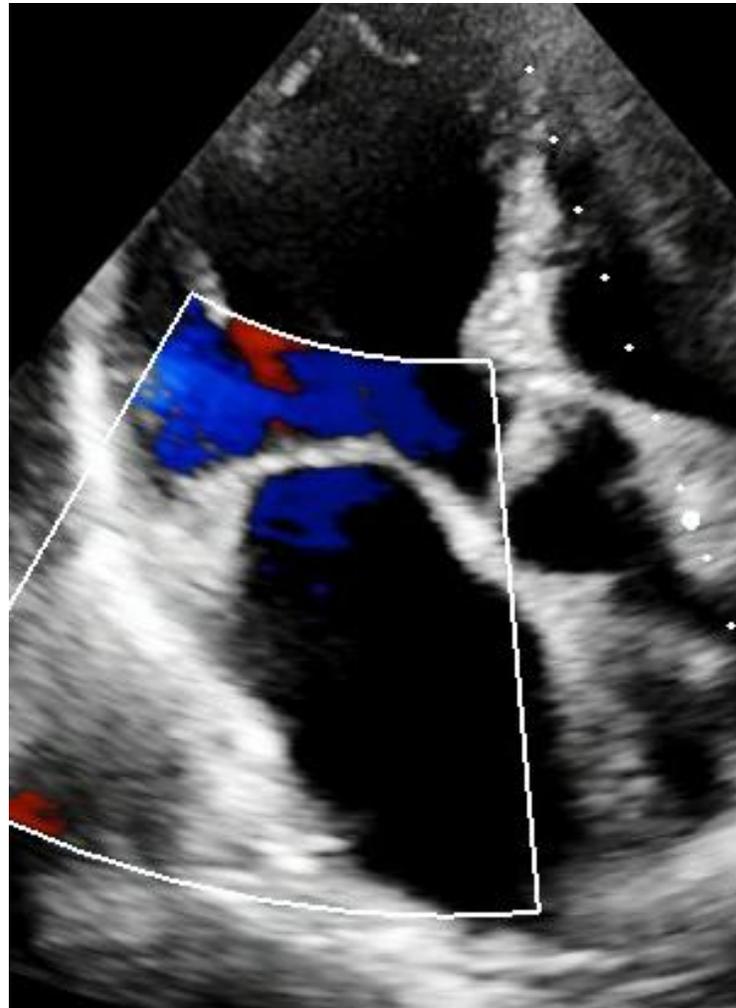
| Recommendations | Class ^a | Level ^b |
|--|--------------------|--------------------|
| Severe atrial secondary mitral regurgitation | | |
| <p><u>TEER may be considered in symptomatic patients with severe atrial SMR not eligible for surgery after optimization of medical therapy including rhythm control, when appropriate.</u> 588,590,638,639</p> | IIb | B |

Sekundární atriální mitrální regurgitace

Před MitraClipem



Před MitraClipem



Po MitraClipu



Sekundární ventrikulární mitrální regurgitace

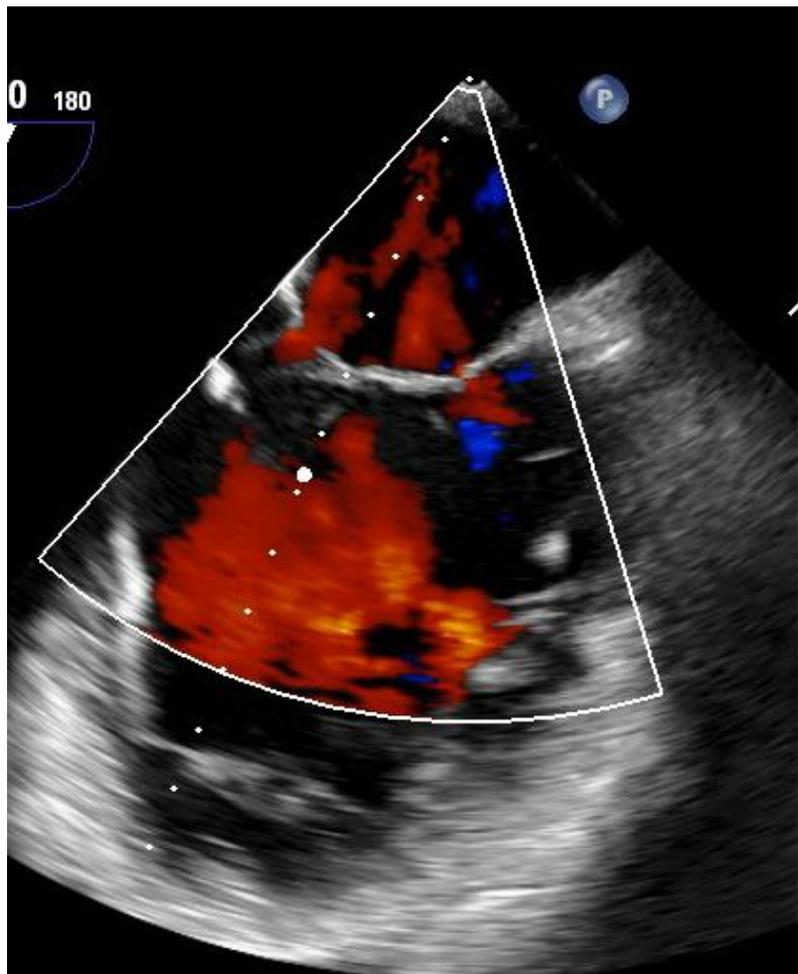
| Severe ventricular secondary mitral regurgitation without concomitant coronary artery disease | | |
|--|------------|----------|
| TEER is recommended to reduce HF hospitalizations and improve quality of life in haemodynamically stable, symptomatic patients with impaired LVEF (<50%) and persistent severe ventricular SMR, despite optimized GDMT and CRT (if indicated), fulfilling specific clinical and echocardiographic criteria. ^c 583,584,606,608,643 | I | A |
| TEER may be considered for symptom improvement in selected symptomatic patients with severe ventricular SMR not fulfilling the specific clinical and echocardiographic criteria, ^e after careful evaluation of LVAD or HTx. ^{203,608-610} | IIb | B |
| MV surgery may be considered in symptomatic patients with severe ventricular SMR without advanced HF who are not suitable for TEER. ⁶¹⁷ | IIb | C |

Specific clinical & echo criteria for M-TEER

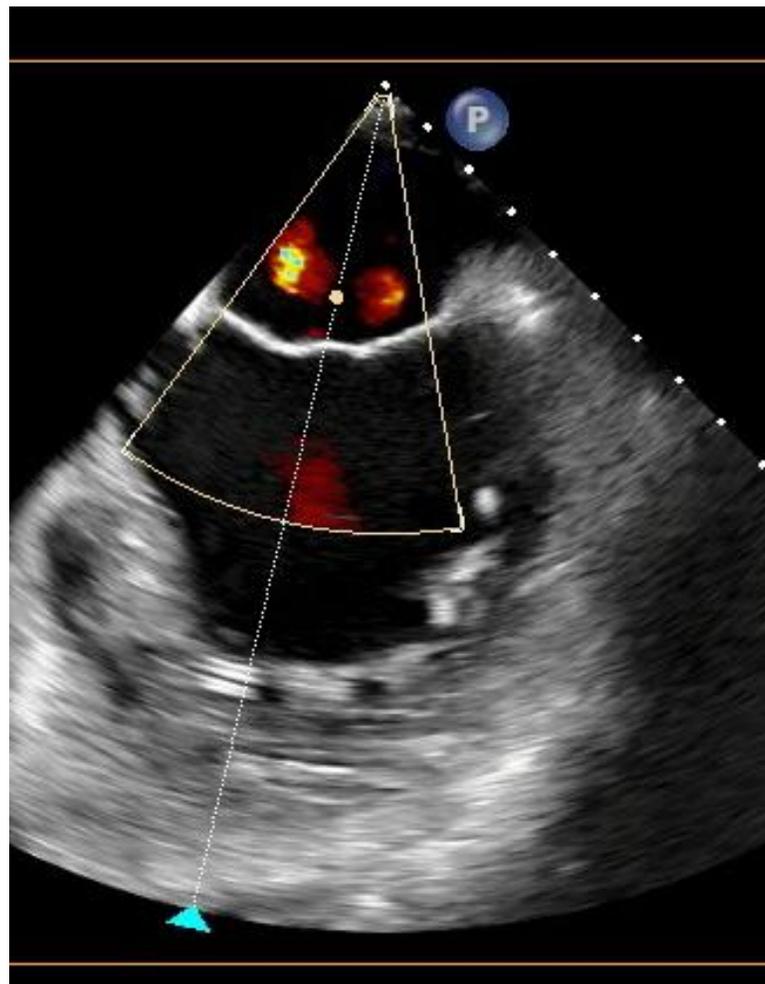
| |
|--|
| Anatomy deemed suitable for M-TEER |
| NYHA class ≥II |
| LVEF 20%–50% |
| LVESD ≤70 mm |
| At least one HF hospitalization within the previous year or increased natriuretic peptide levels (BNP ≥300 pg/mL or NT-proBNP ≥1000 pg/mL) |
| SPAP ≤70 mmHg |
| No severe RV dysfunction |
| No Stage D or advanced HF |
| No CAD requiring revascularization |
| No severe AV and/or TV disease |
| No hypertrophic, restrictive, or infiltrative cardiomyopathies |

Sekundární ventrikulární mitrální regurgitace

Před MitraClipem

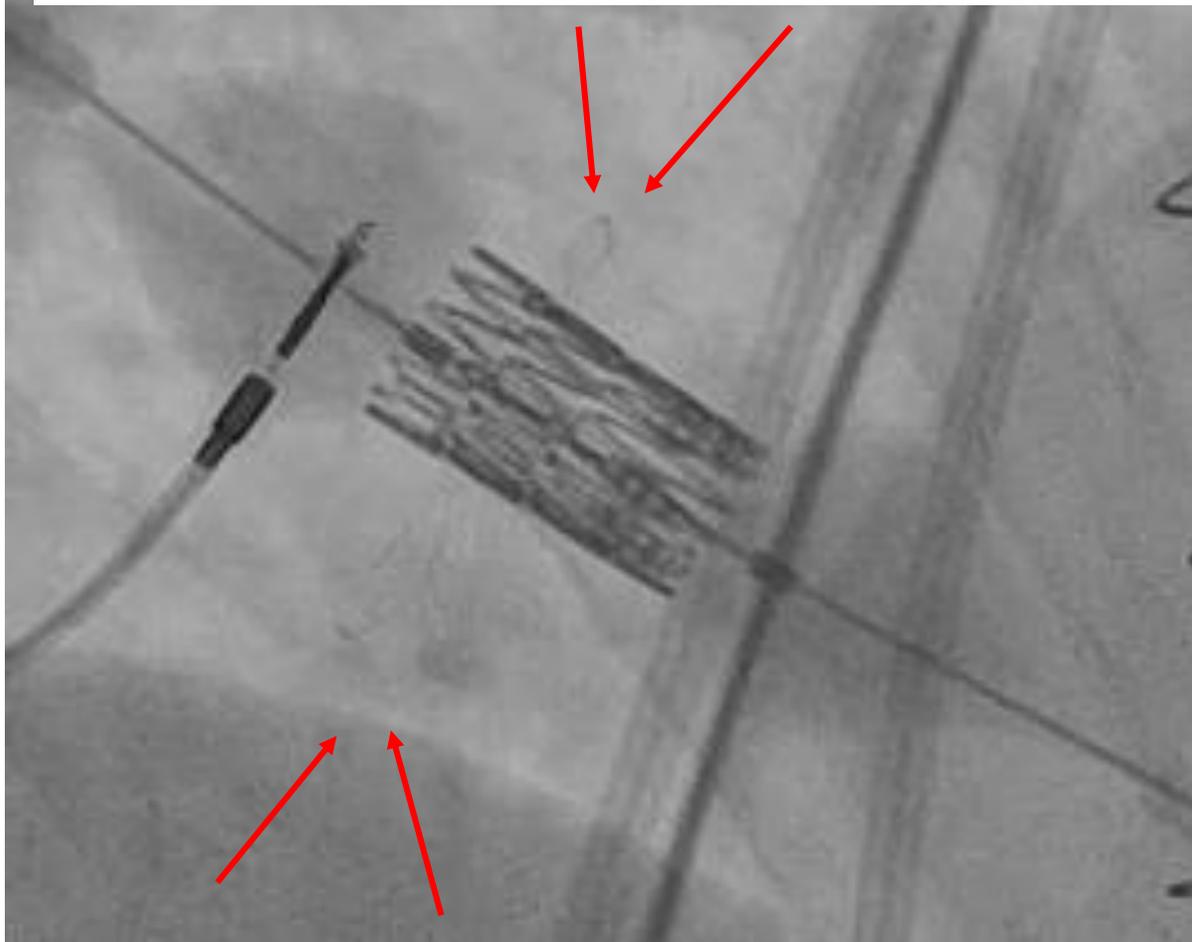


Po MitraClipu



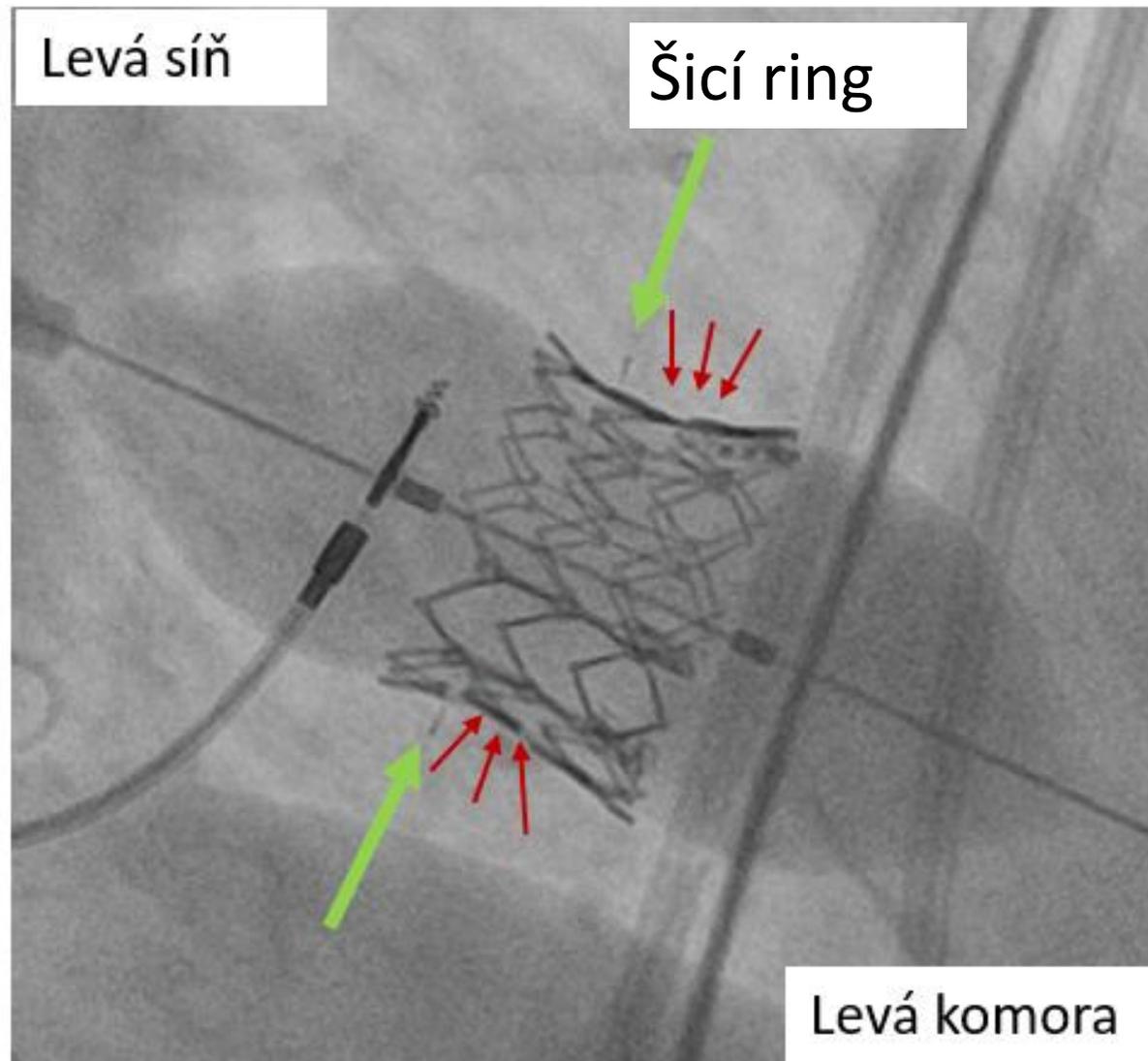
TMVI do zdegenerované chirurgické bioprotézy

Šicí ring zdegenerované bioprotézy



Levá síň

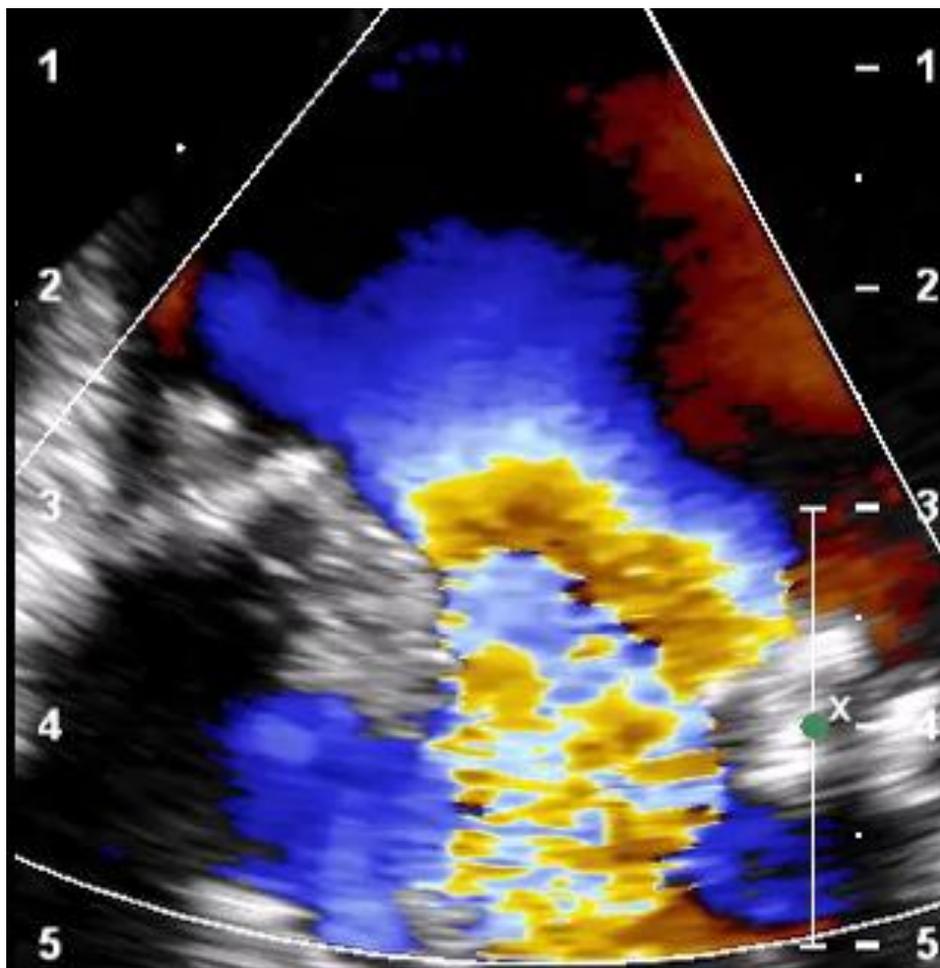
Šicí ring



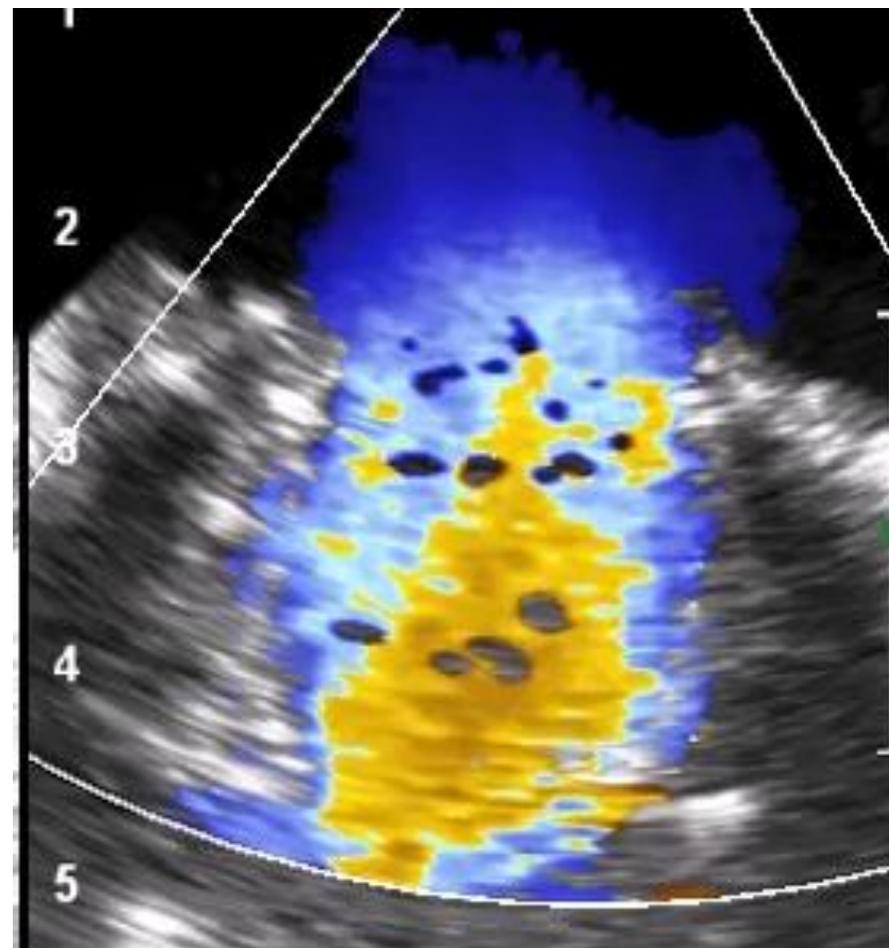
Levá komora

TMVI do zdegenerované chirurgické bioprotézy

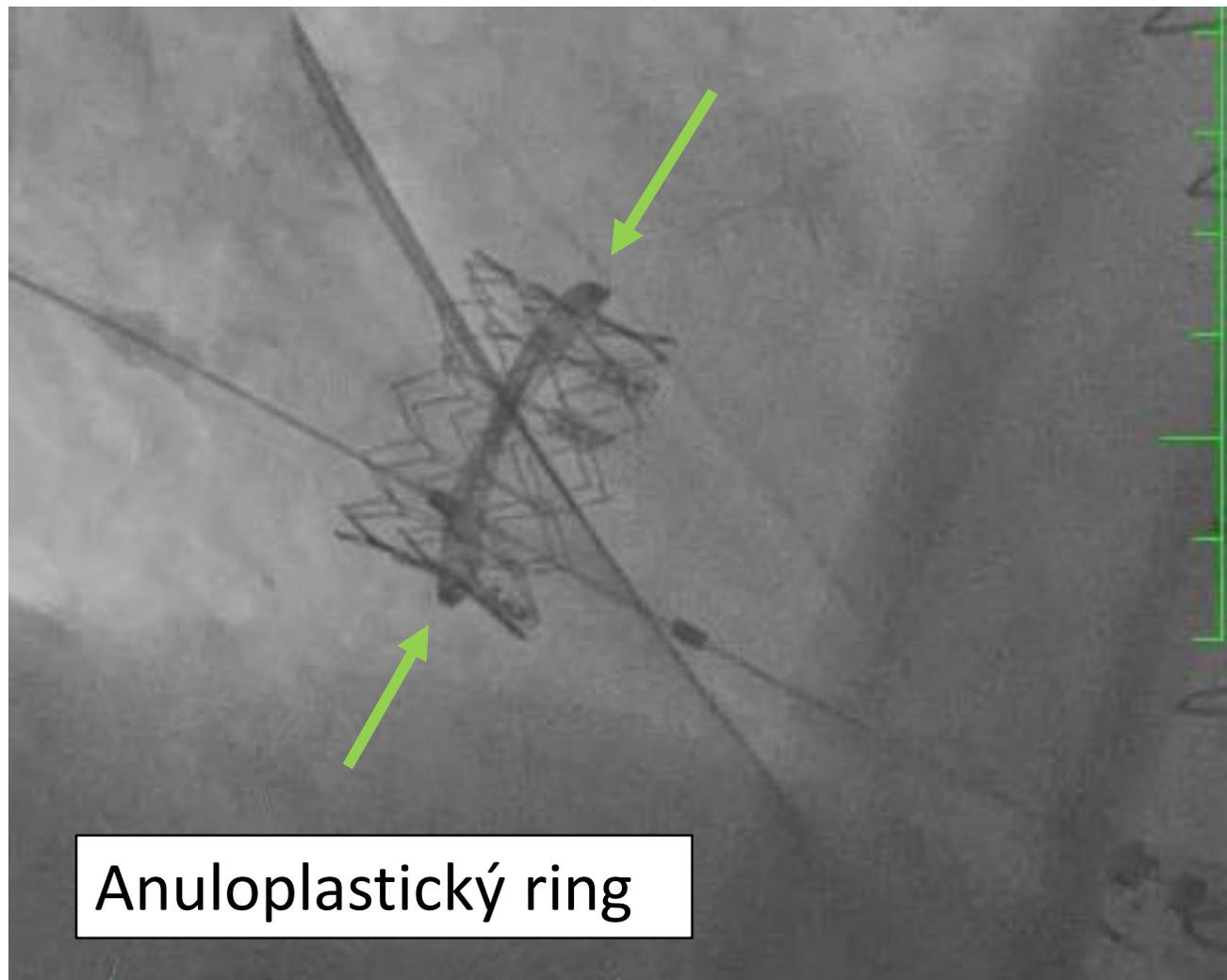
Před implantací



Po implantaci

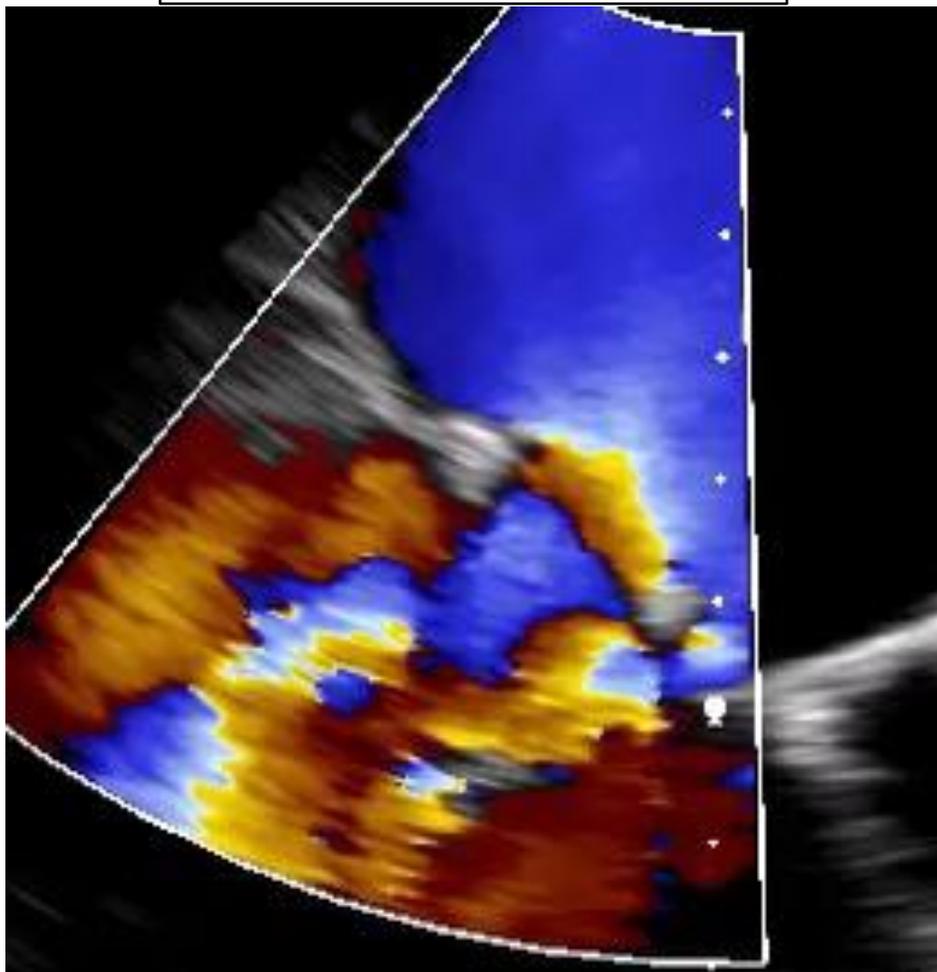


TMVI do anuloplastického ringu (Valve-in-Ring)

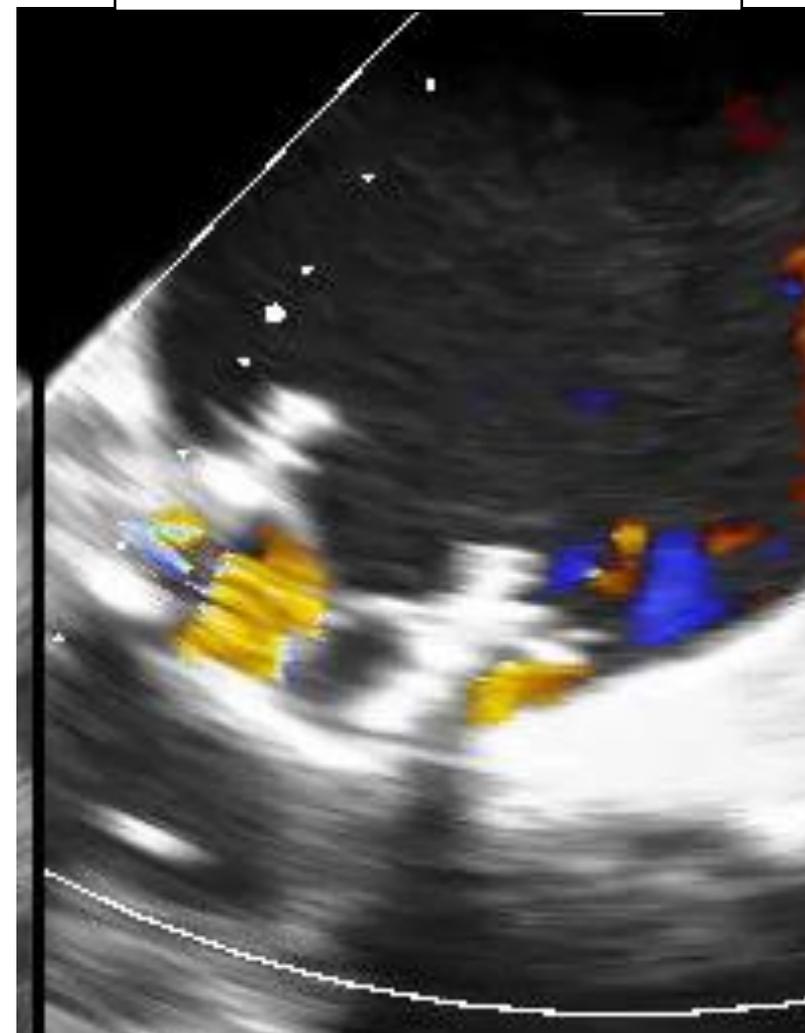


TMVI do anuloplastického ringu (Valve-in-Ring)

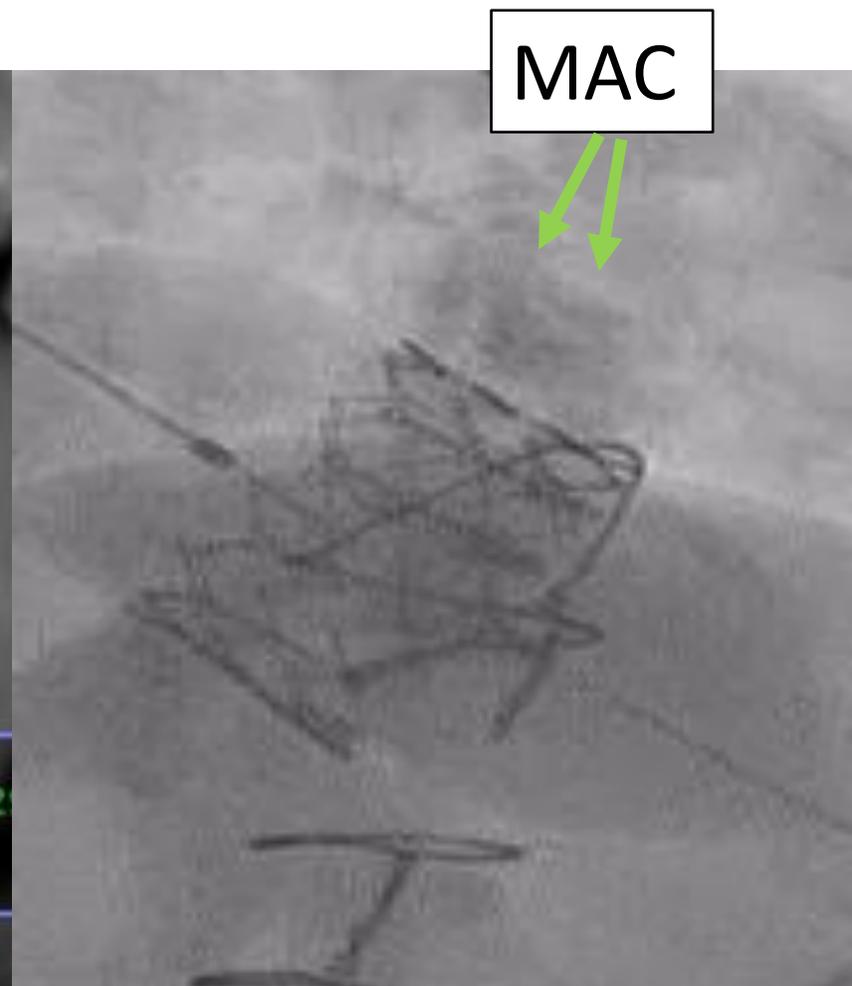
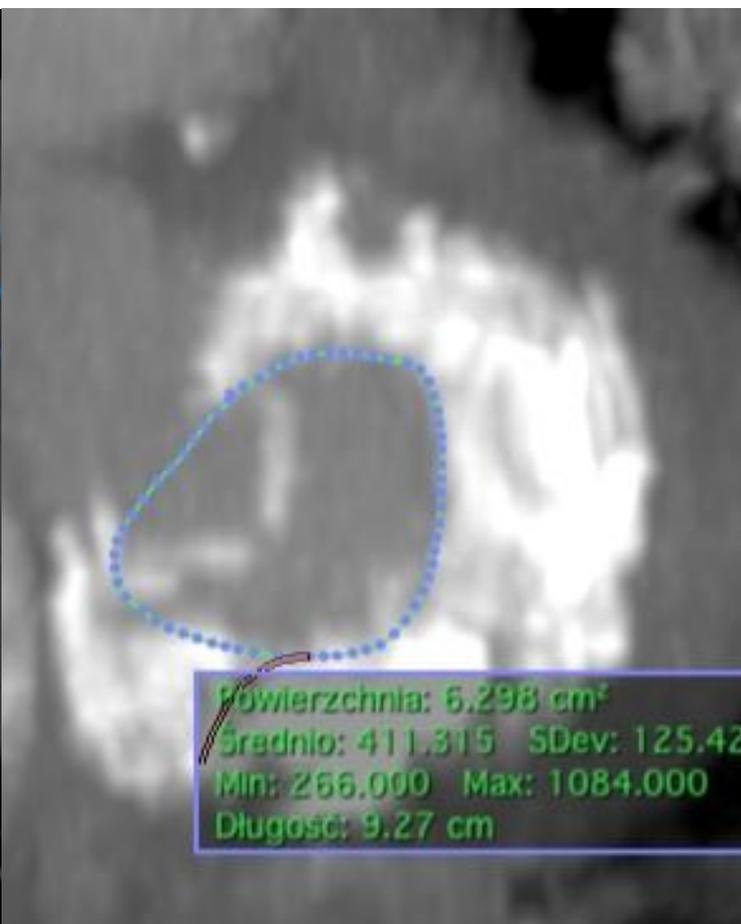
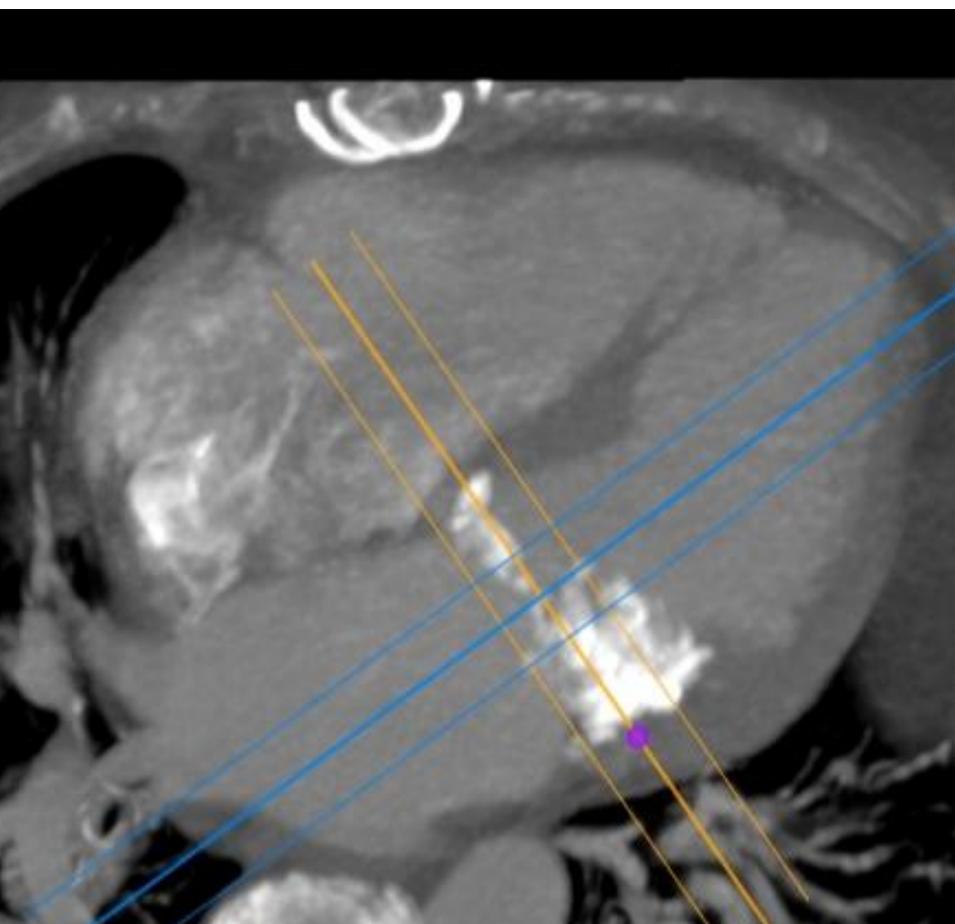
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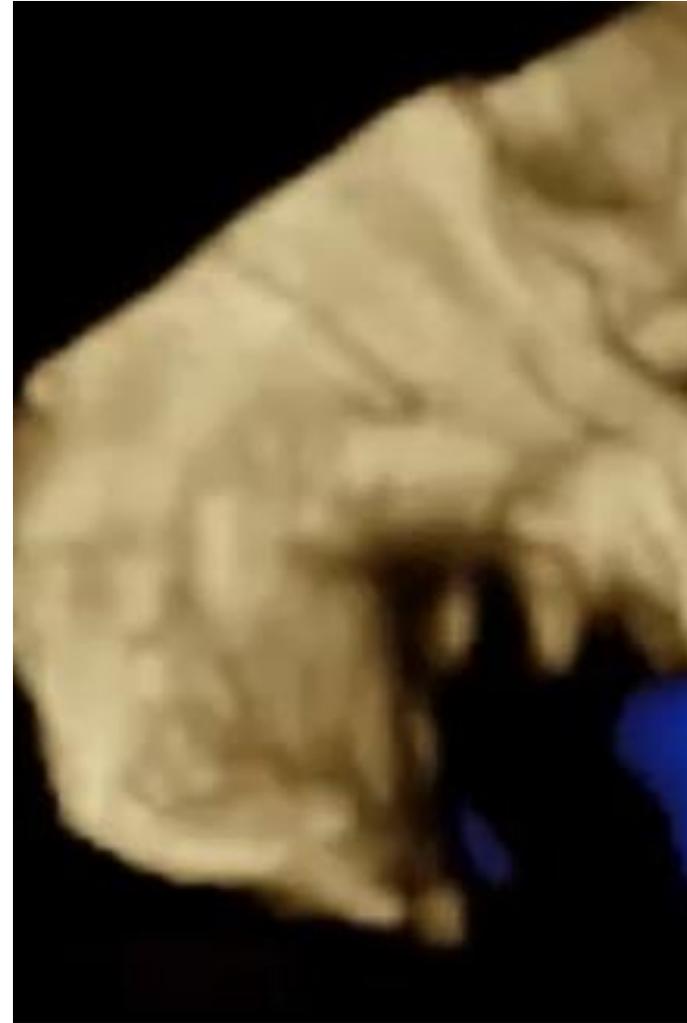
Po implantaci



Regurgitace na MAC (Mitra Annulus Calcification)

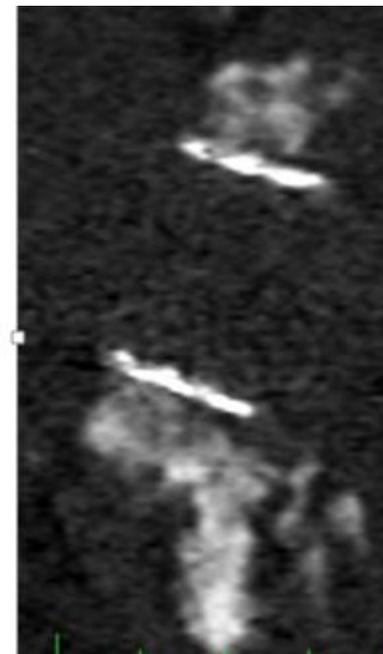
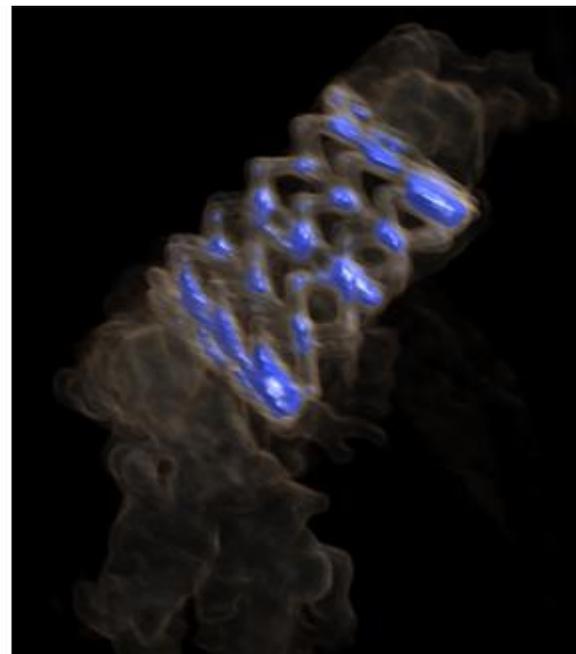
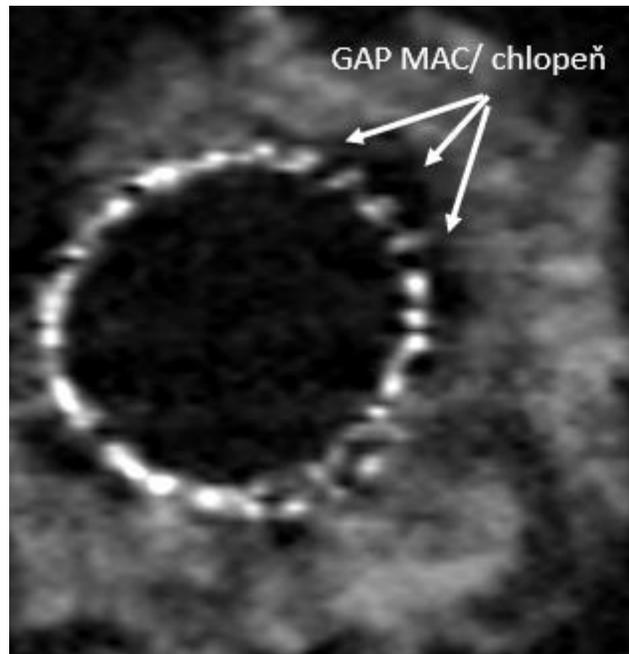


TMVI do MAC

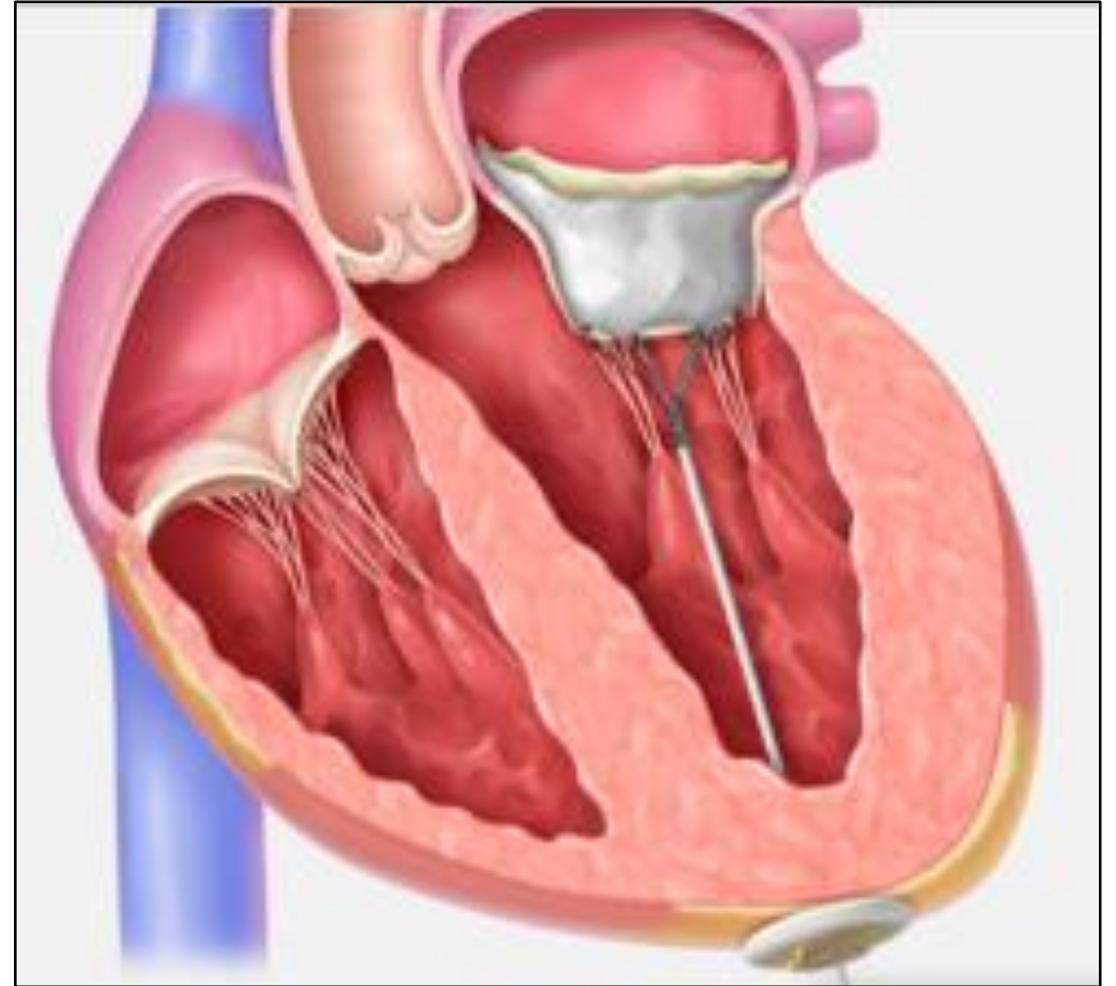
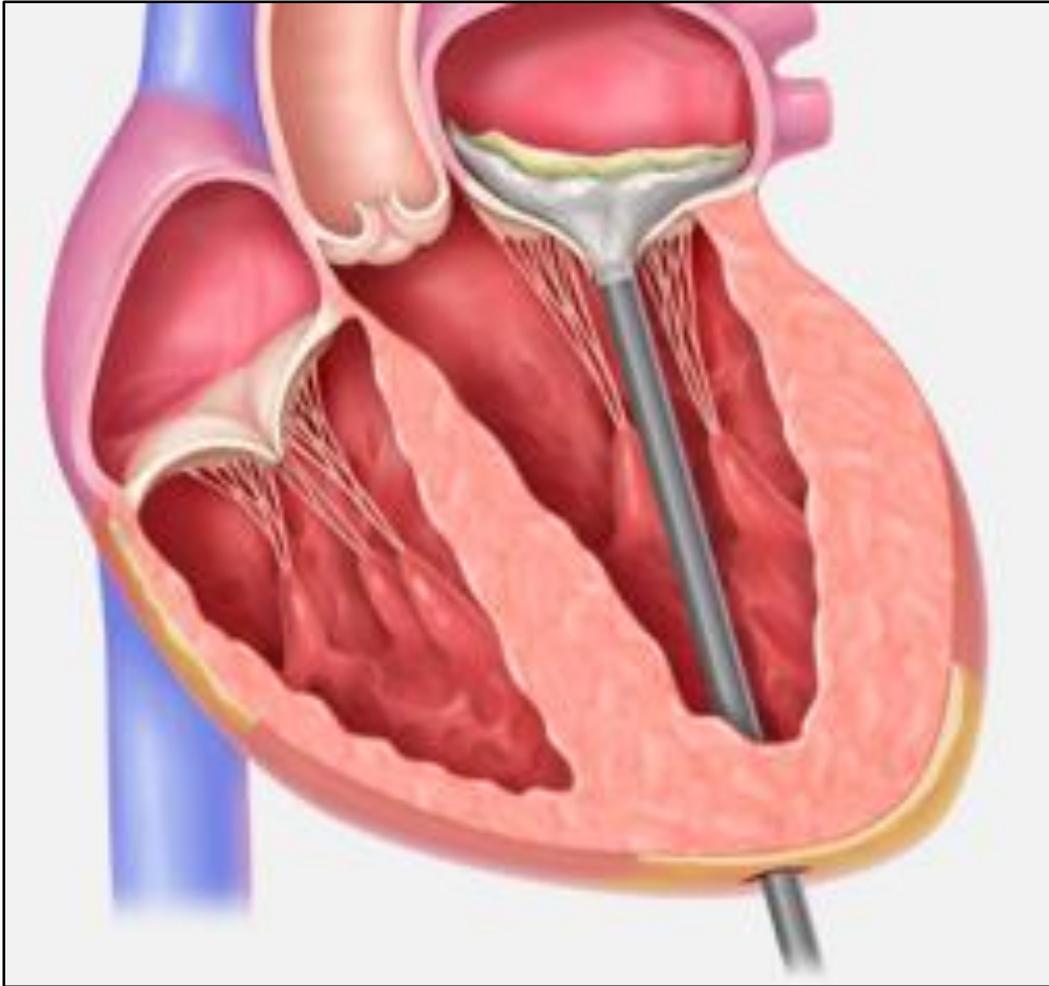


Mitrální stenóza – Transcatheter Mitral Valve Implantation (TMVI)

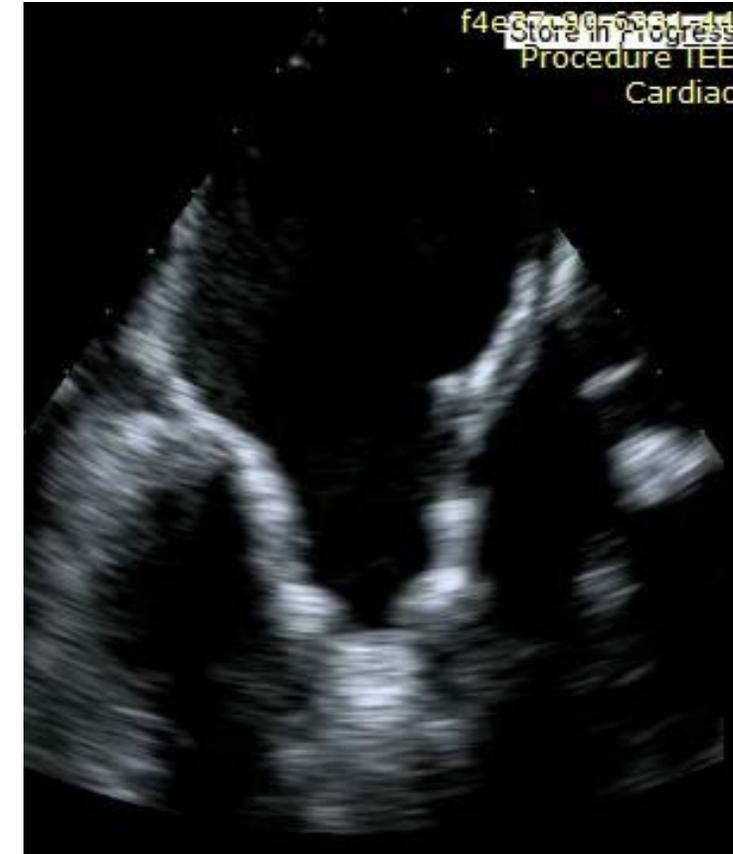
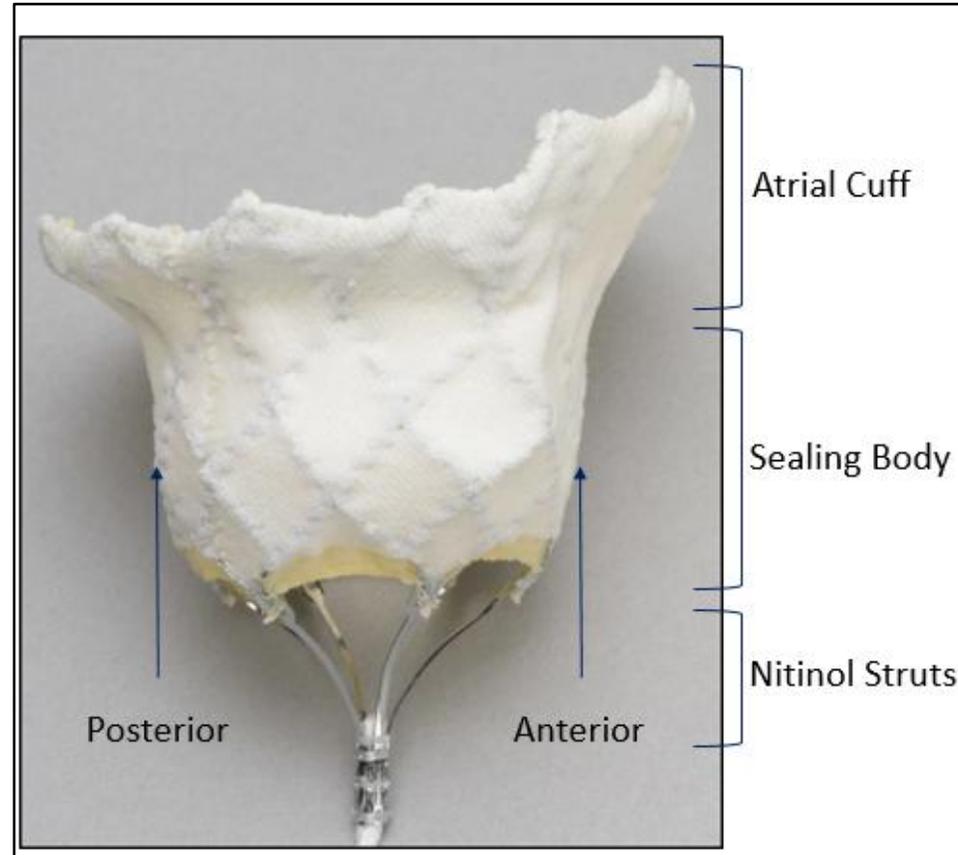
| Recommendations | Class | Level |
|---|-------|-------|
| <i>Indications for mitral valve surgery and transcatheter intervention in clinically severe rheumatic and degenerative mitral stenosis</i> | | |
| <u>TMVI may be considered in symptomatic patients with extensive MAC and severe MV dysfunction</u> at experienced Heart Valve Centres with expertise in complex MV surgery and transcatheter interventions. | IIb | C |



Transcatheter Mi Valve Implantation (TMVI) - Tendyne valve

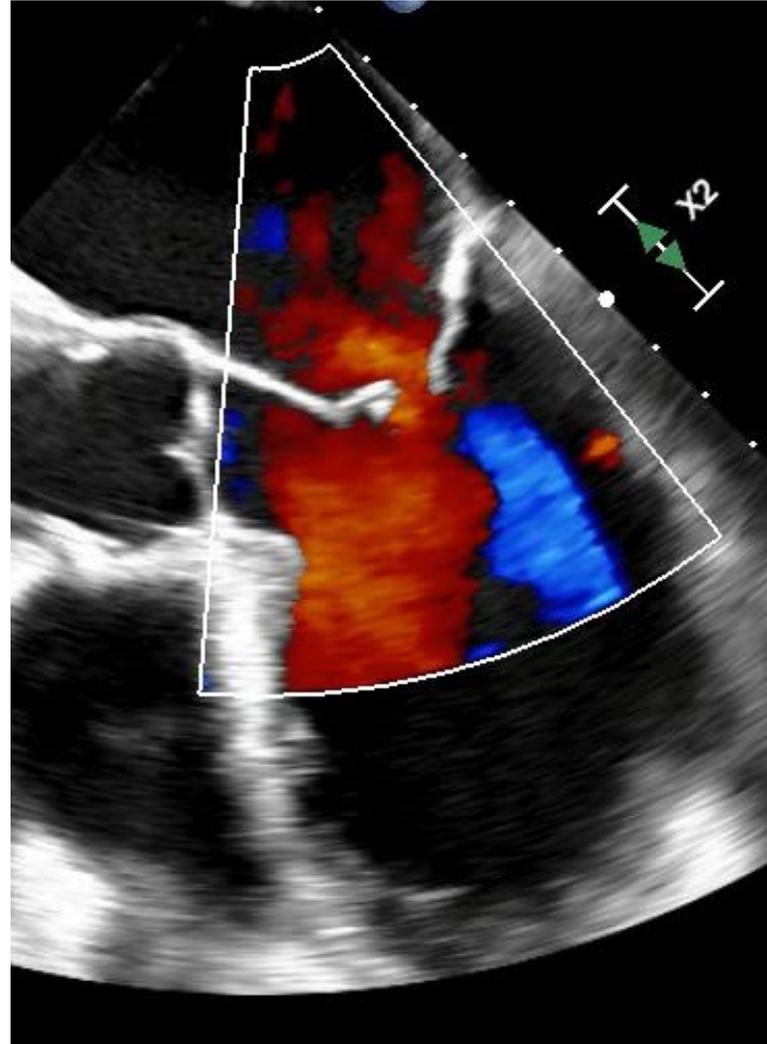
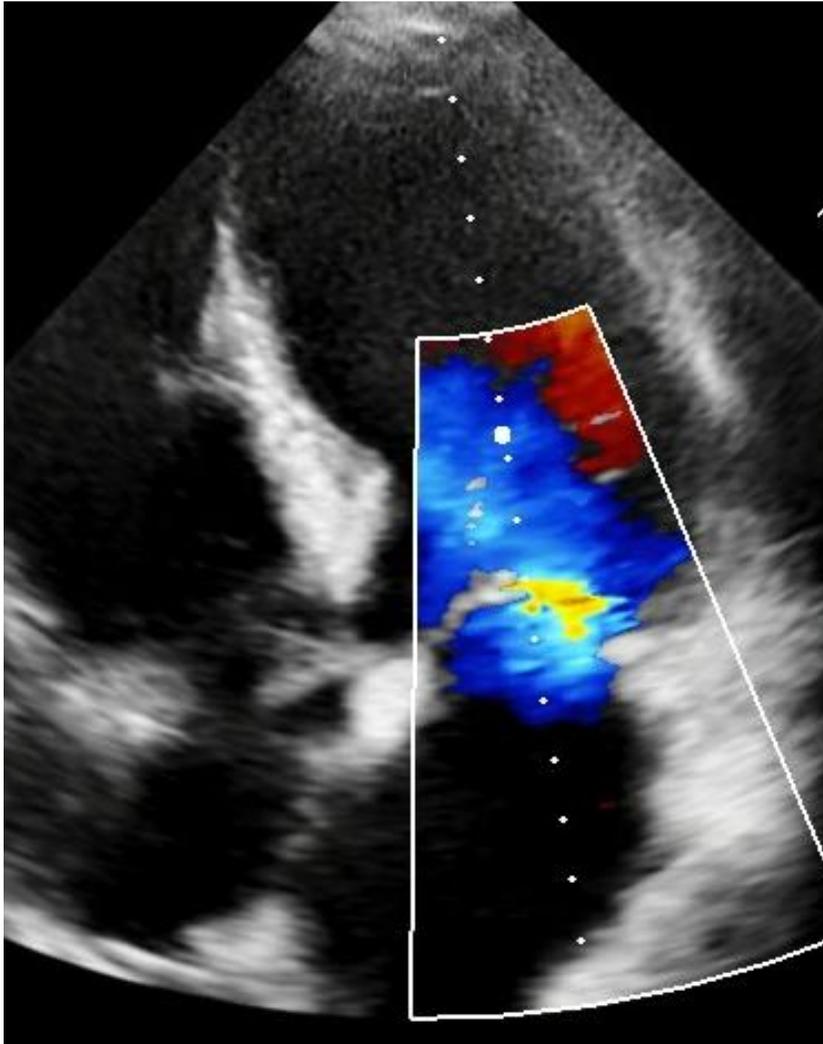


Tendyne Valve



Circular inner valve with two sizes, EOA of 2.2cm^2 and 3.0cm^2
Broad annulus size range Repositionable / retrievable

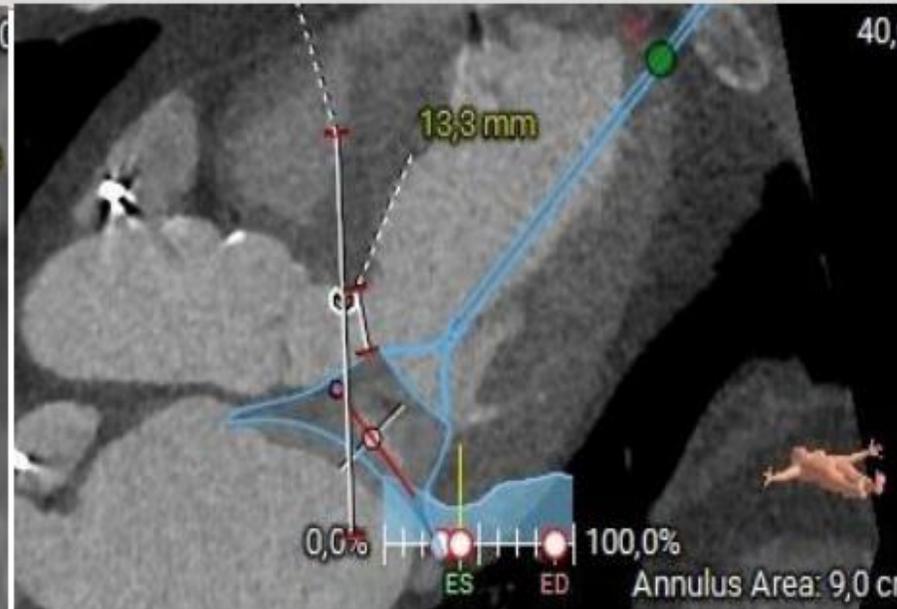
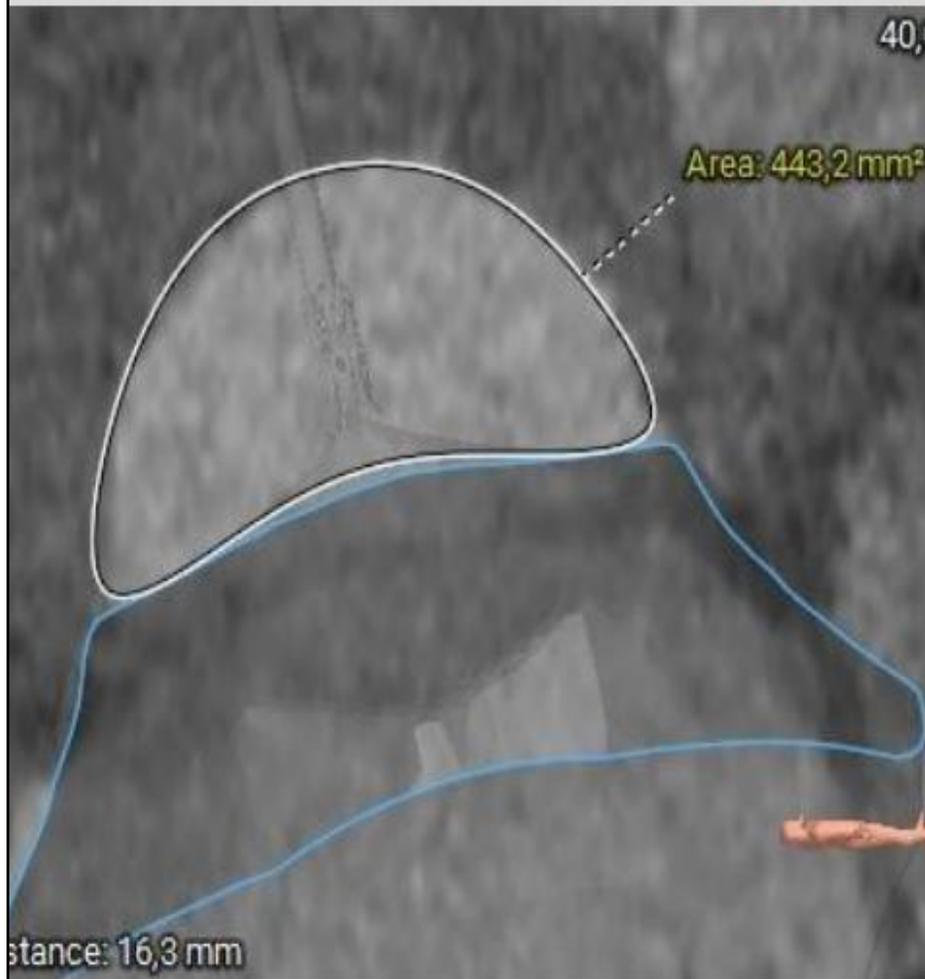
TENDYNE – ECHO před implantací



- Dilatace obou síní – LAVI 67ml/m²
- Normální velikost LKd 53mm, LKs 38mm
- EF 45%
- Mi annulus 38mm
- Závažná sekundární mitrální regurgitace A2/P2
- Lehká trikuspidální regurgitace

CT modelace NEO LVOT

CZE-OST-FNO-010 NeoLVOT End Systole Valve 33S LP - 7° ANTERIOR bias – po ablac



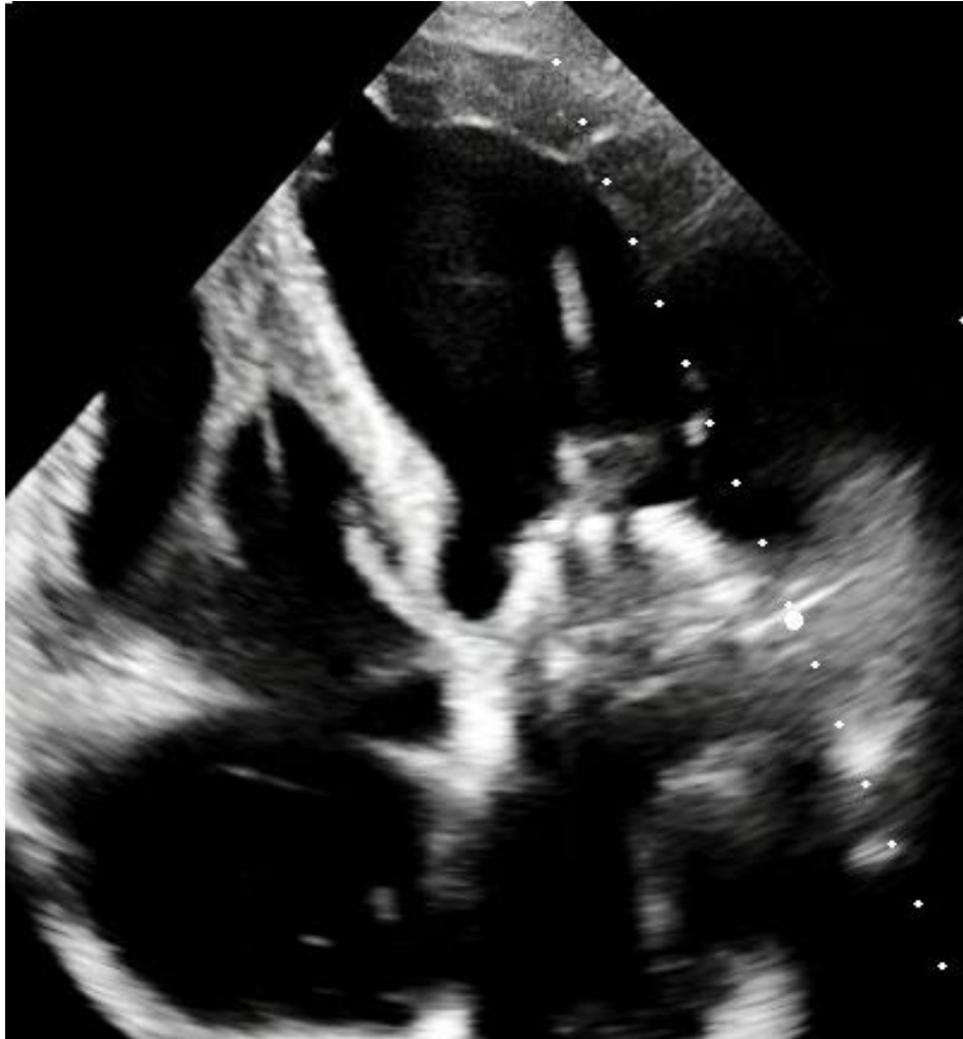
| Smallest | |
|---------------------------|----------------|
| NeoLVOT | A2 Clearance |
| 443 mm² | 13.3 mm |

Tendyne implantace – září 2022

Po implantace Tendyne

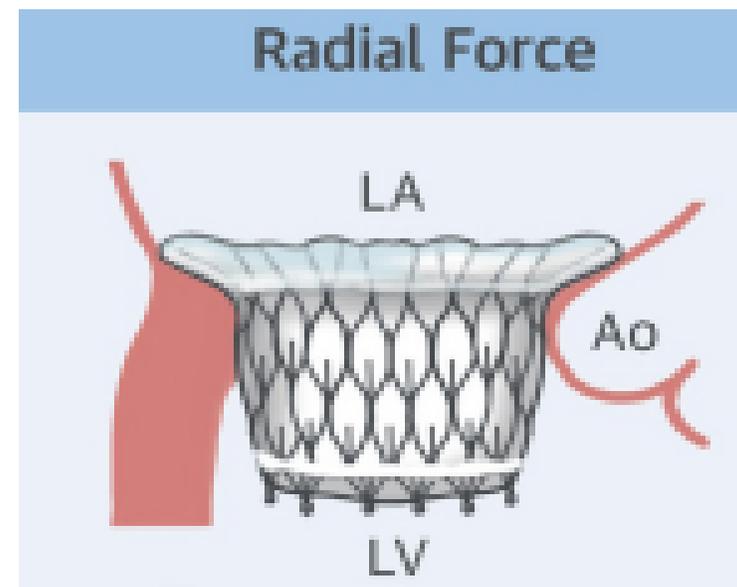


6 měsíční sledování – NYHA I-II



Budoucnost - INTREPID valve a jiné

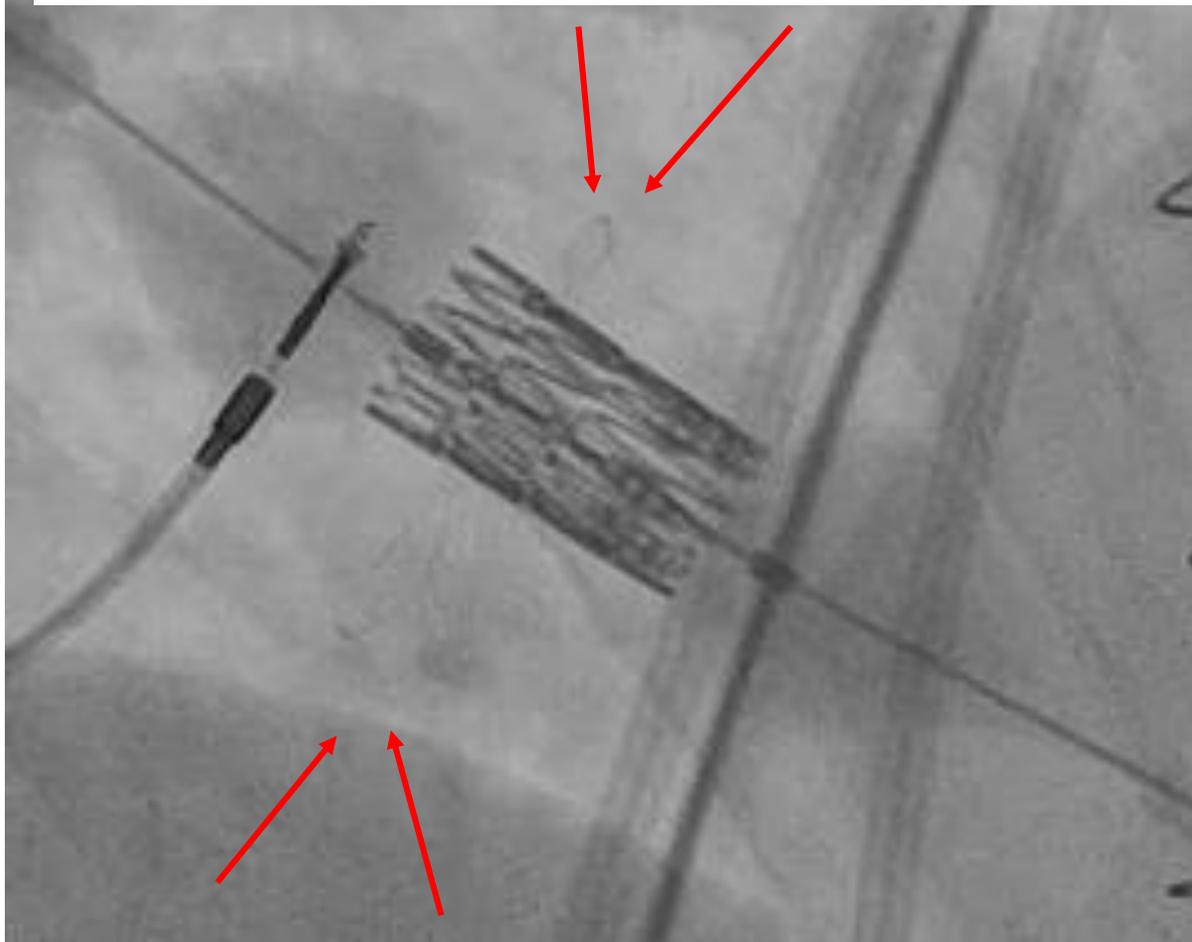
| | |
|---|---|
| Výrobce | Medtronic, Minneapolis, US |
| anchoring | <ul style="list-style-type: none"> • Radial force and small cleats on outer stent engage leaflets |
| Přístupová cesta | <ul style="list-style-type: none"> • TA i TF (TF - EFS study) |
| Materiál | <ul style="list-style-type: none"> • Double stent, selfexpanding, nitinol • 3 bovine leaflets |
| Pozice | Intraannular |
| <ul style="list-style-type: none"> • Velikosti chlopně • Diametr DS | <ul style="list-style-type: none"> • 27mm, Outer frame sizes: 43, 46, 50 mm • 35F pro TA |
| Design | Circular, Dual stent design, outer frame provides fixation and isolates the inner stent |
| Počet pacientů | 50 |
| studie | <ul style="list-style-type: none"> • APOLLO single-arm/APOLLO MAC 2x 250pts • TF Interpid EFS 15pts |



Děkuji za pozornost

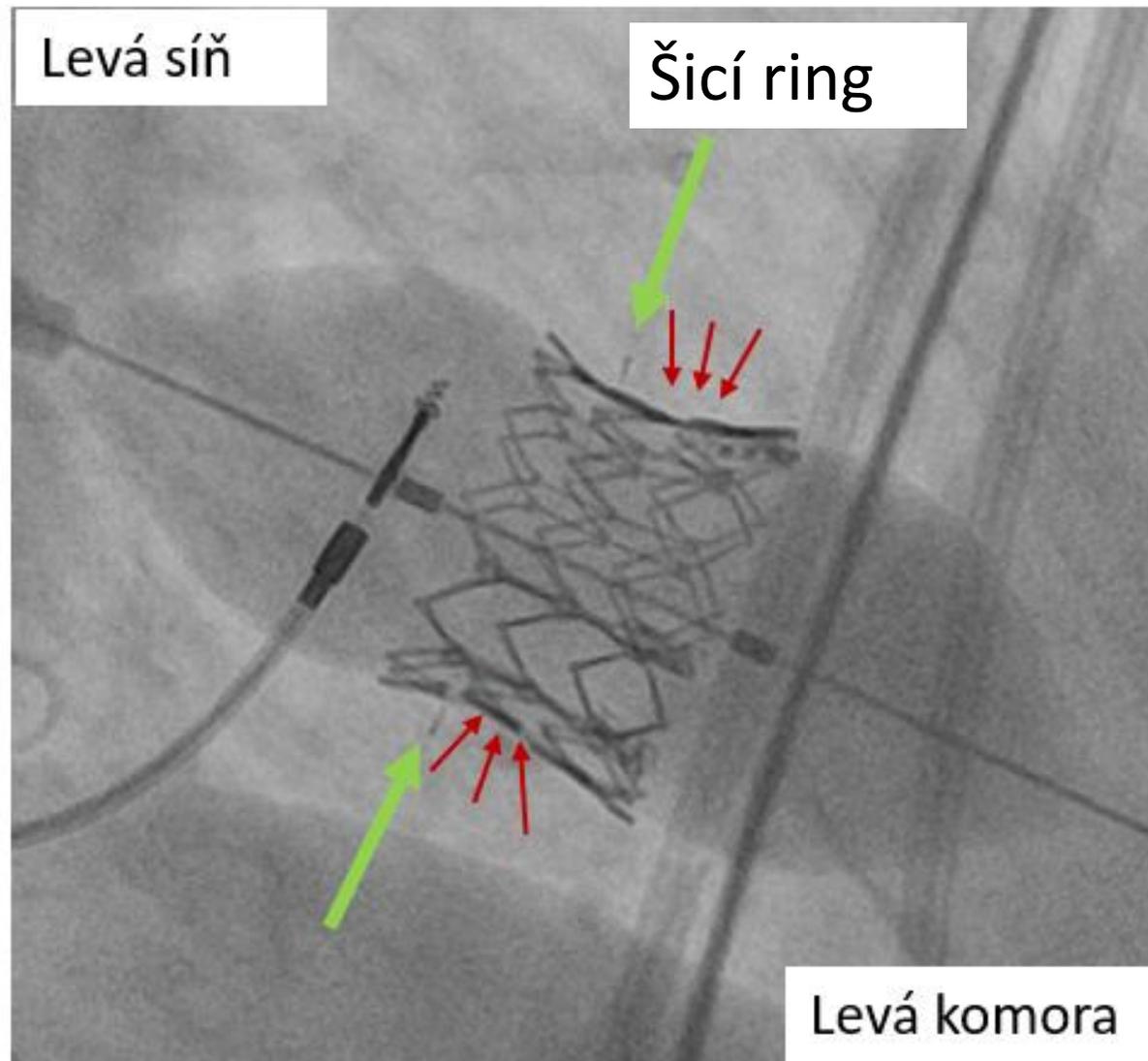
TMVI do zdegenerované chirurgické bioprotézy

Šicí ring zdegenerované bioprotézy



Levá síň

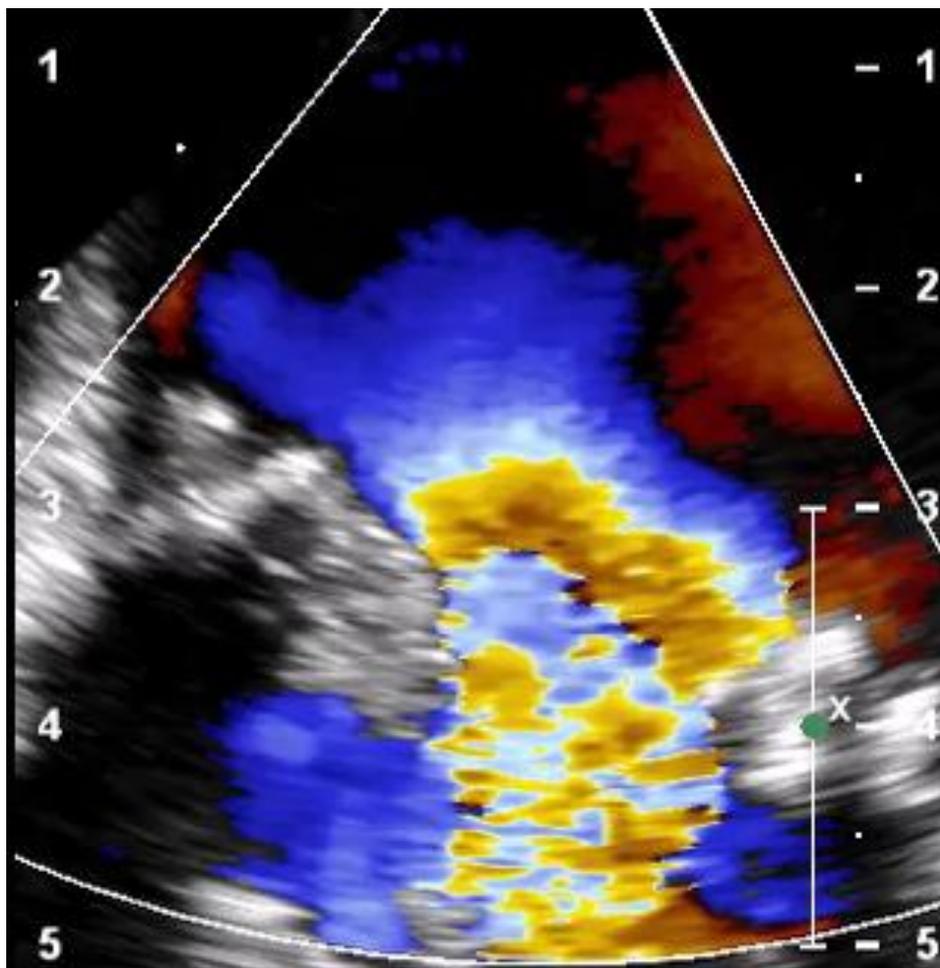
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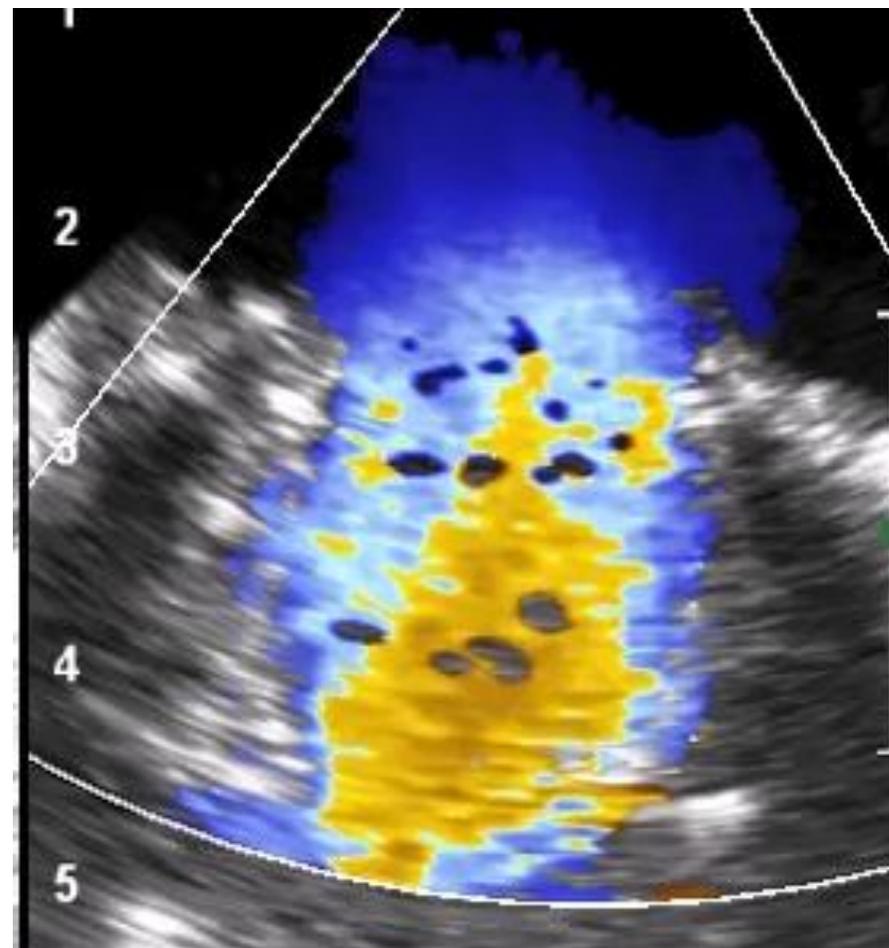
Levá komora

TMVI do zdegenerované chirurgické bioprotézy

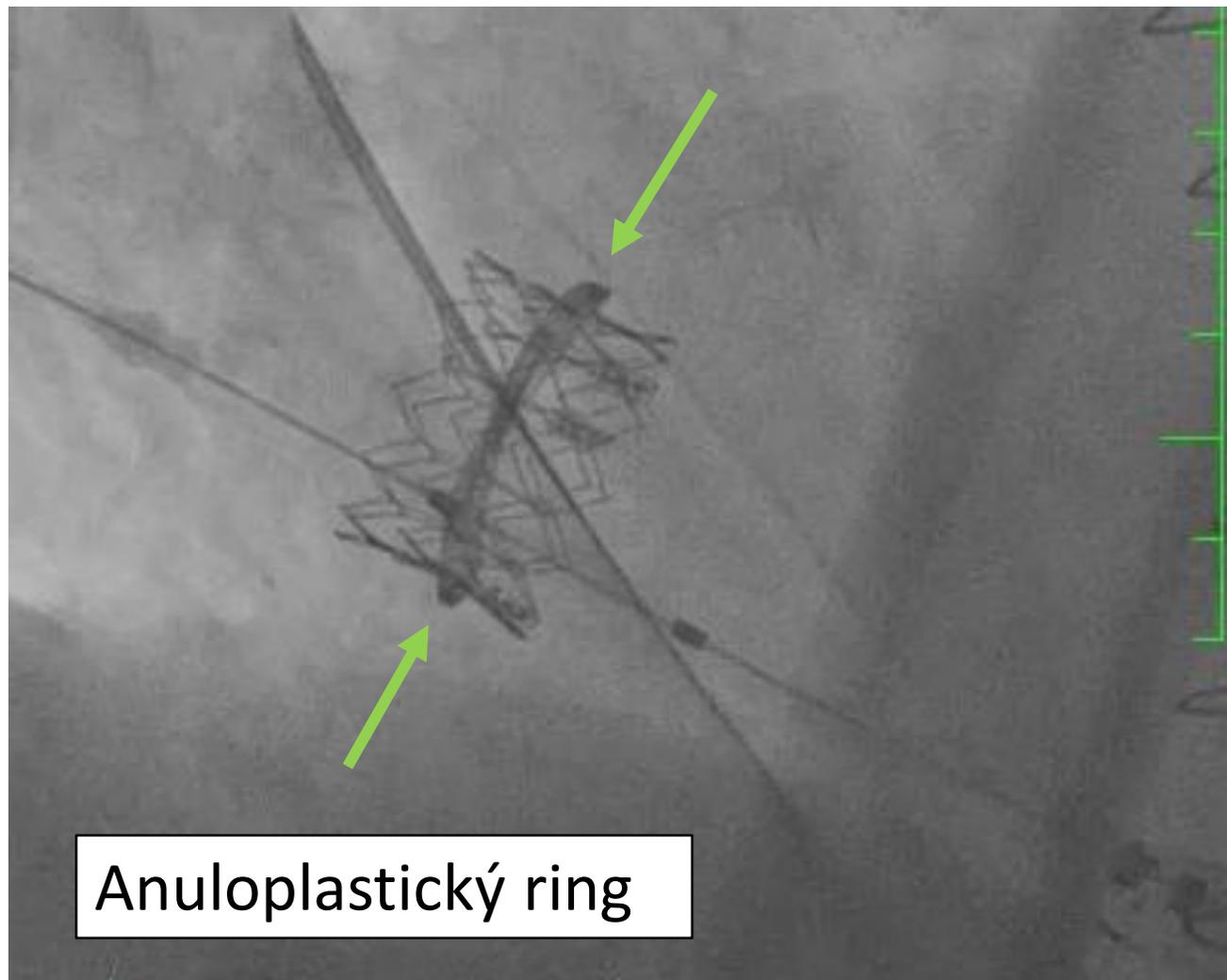
Před implantací



Po implantaci

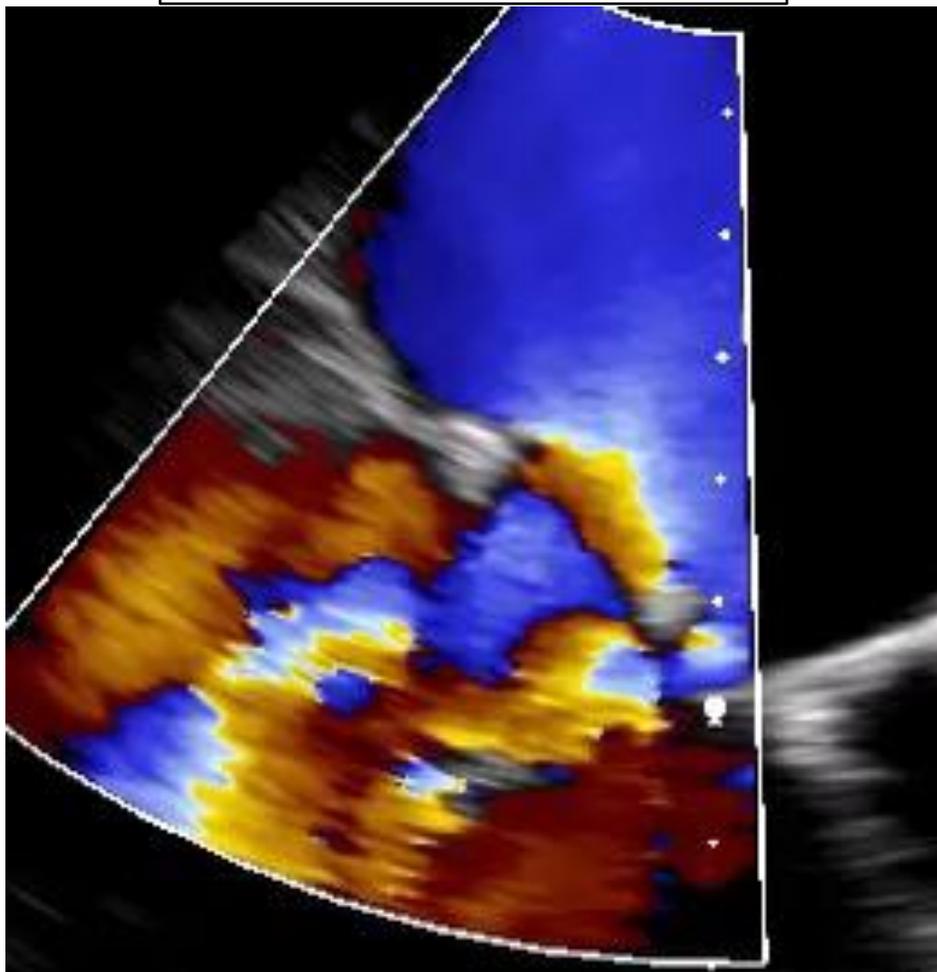


TMVI do anuloplastického ringu (Valve-in-Ring)

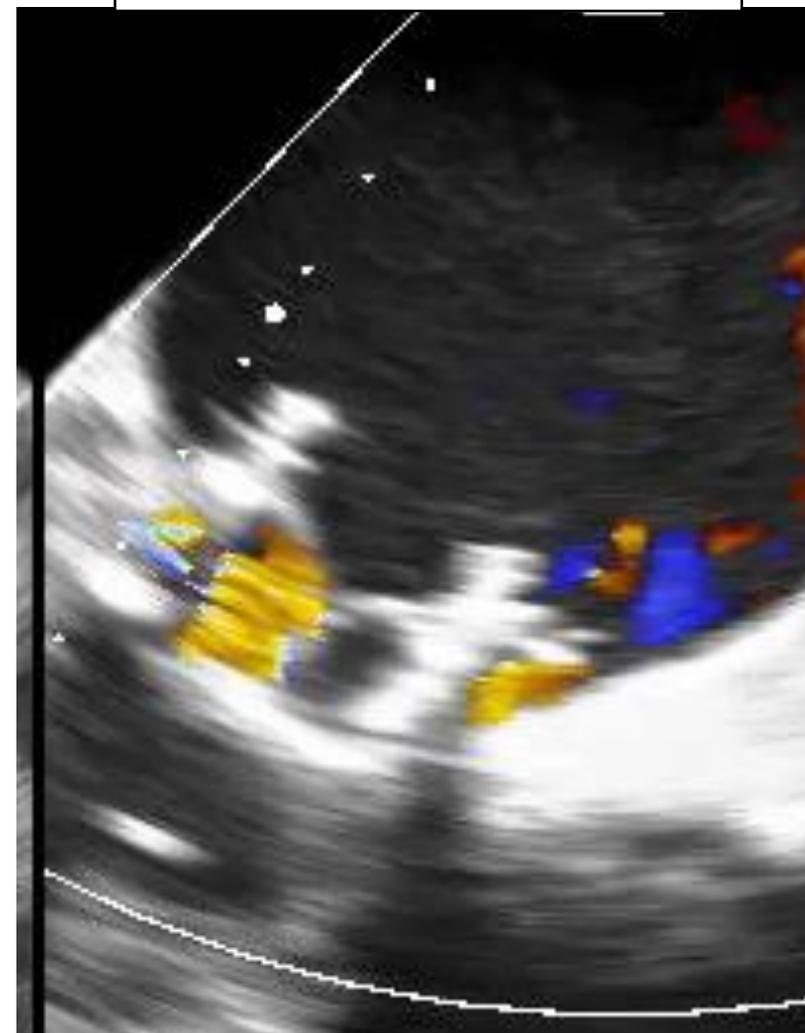


TMVI do anuloplastického ringu (Valve-in-Ring)

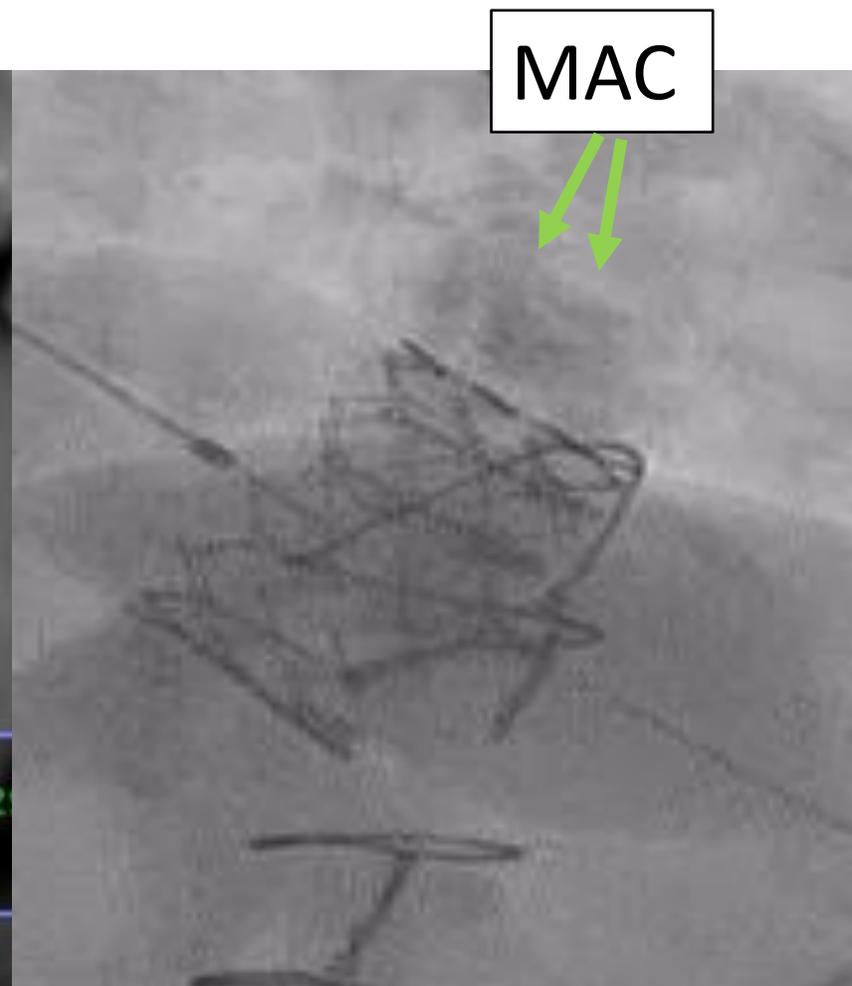
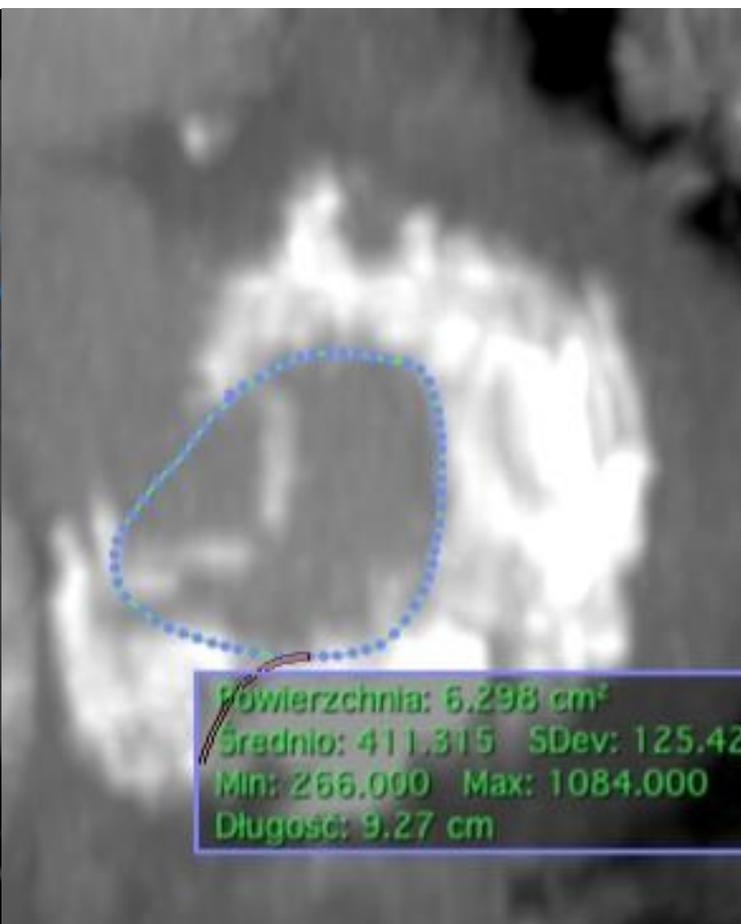
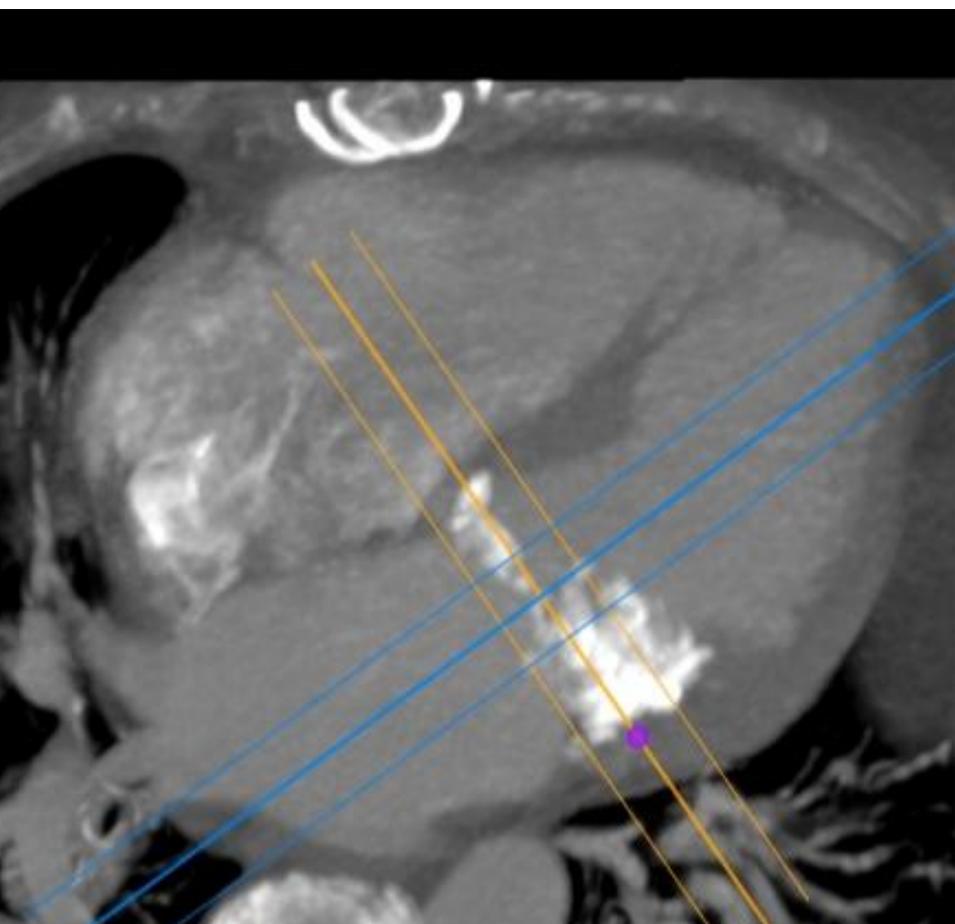
Před implantací



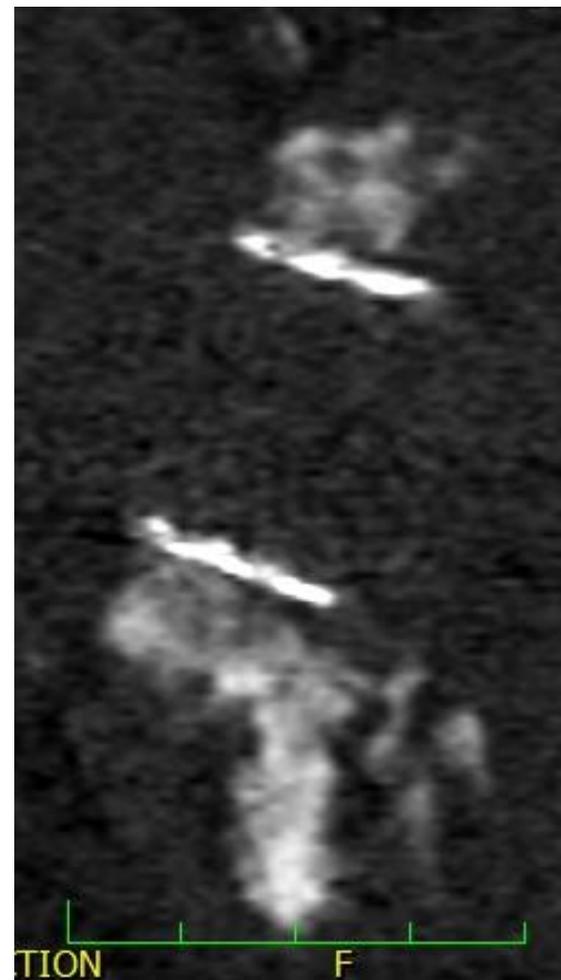
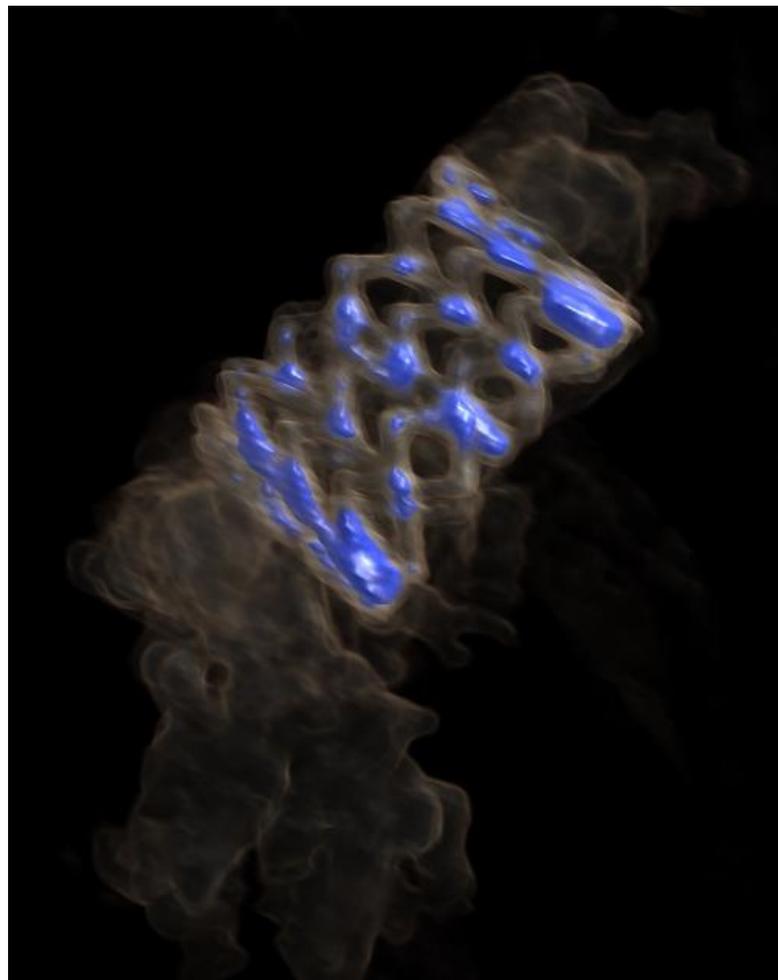
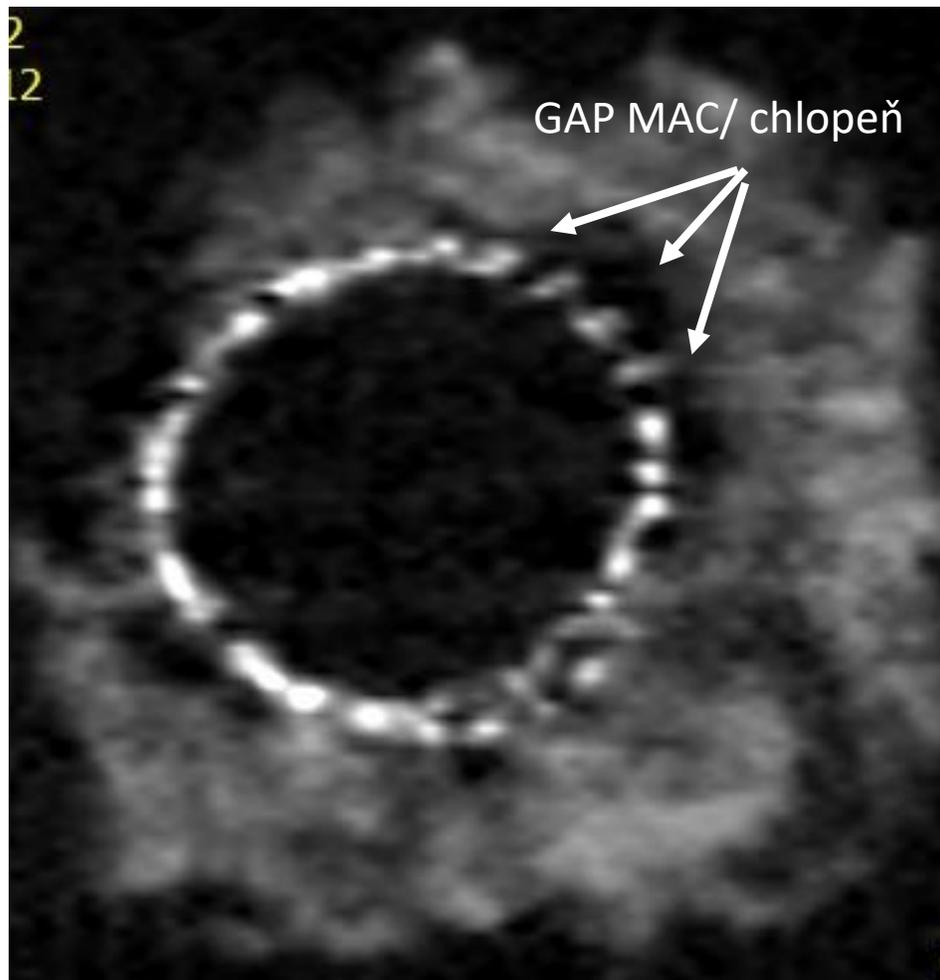
Po implantaci



Regurgitace na MAC (Mitra Annulus Calcification)



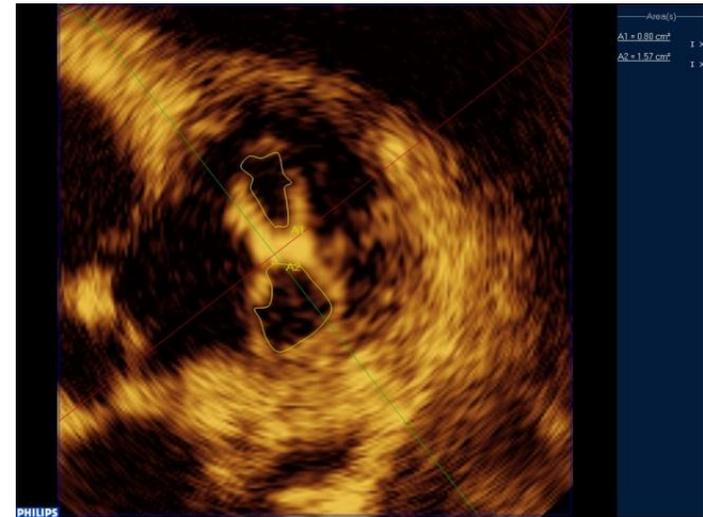
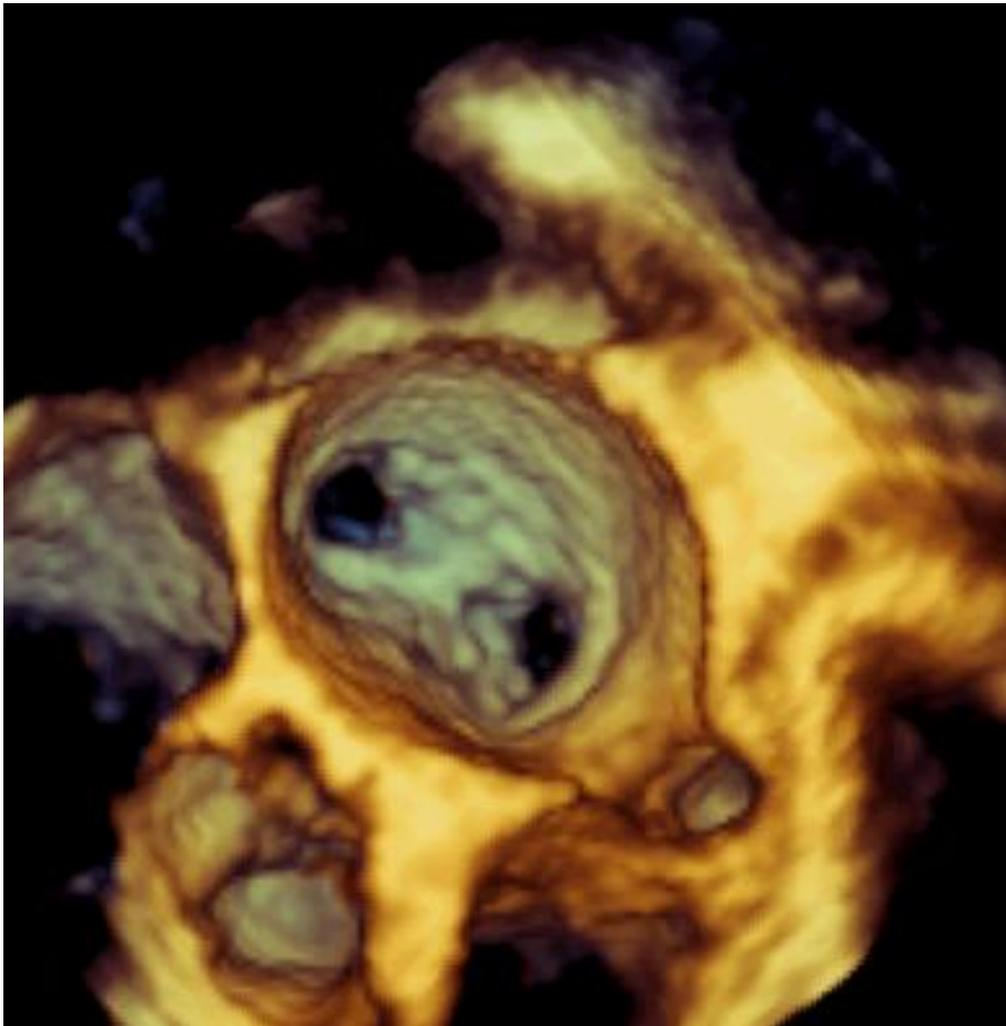
TMVI do MAC



TMVI do MAC

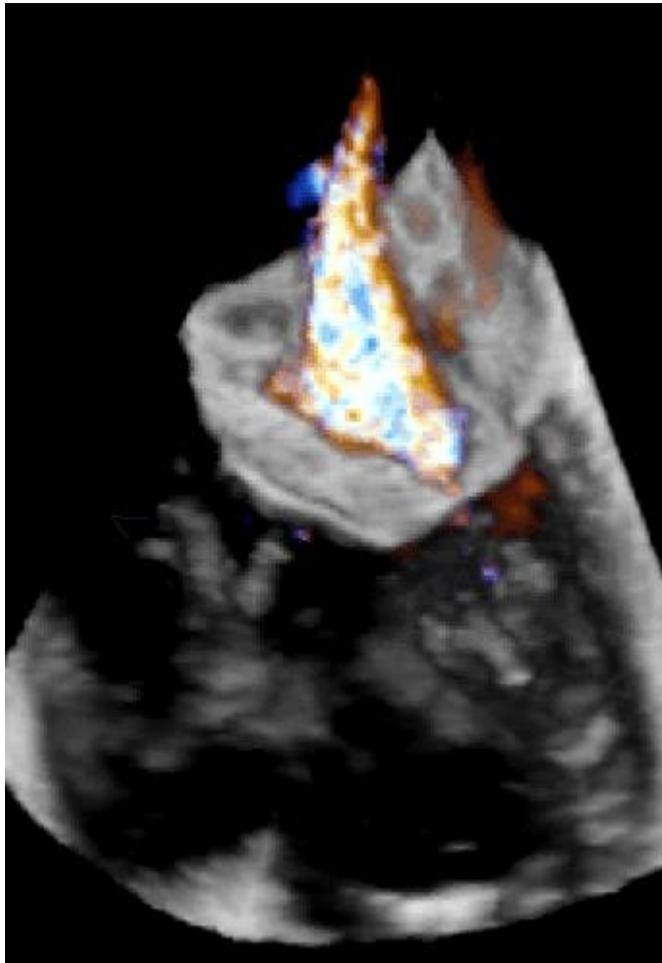


MitraClip – treatment of Mitral regurgitation

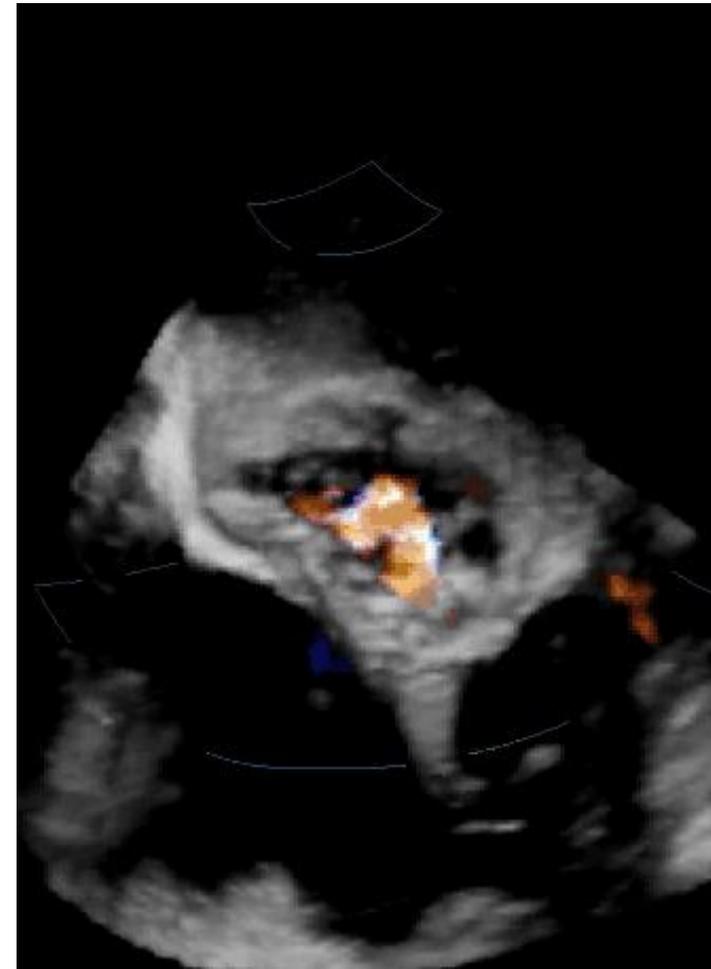


MitraClip – treatment of Mitral regurgitation

Before MC implantation



After MC implantation



#1: TMVI - Tendyne Valve

**LEFT VENTRICULAR
APICAL PAD/TETHER**

- Repositionable / retrievable
- Adjustable tether tension
- Controlled deployment

**SELF-EXPANDING
TRI-LEAFLET PORCINE
PERICARDIUM
BIOPROSTHESIS**

- Circular inner valve with two sizes, EOA of 2.2cm² and 3.0cm²

**MULTIPLE OUTER
FRAMES**

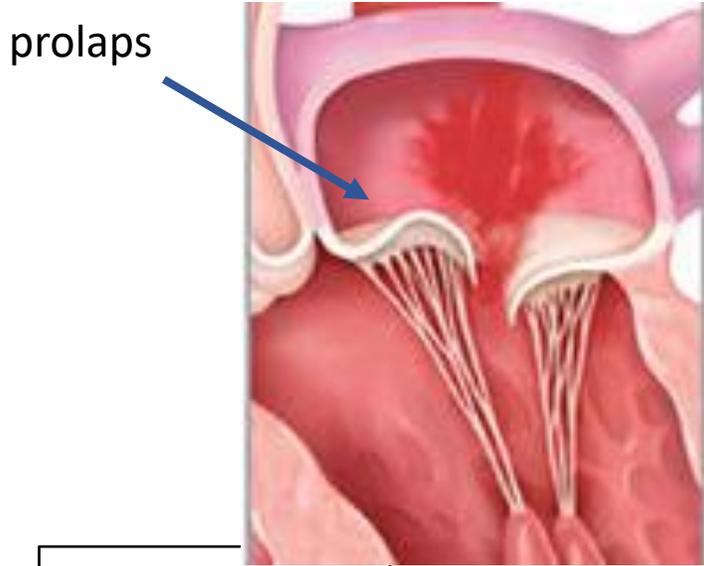
- Broad annulus size range
- Matched to native annulus geometry



Tendyne TMVI Valve & Tether

Tendyne product is currently in clinical studies at Abbott. Neither approved or available for sale.

Primární mitrální regurgitace - asymptomatická



2021

Surgical mitral valve repair should be considered in low-risk asymptomatic patients with LVEF >60%, LVESD <40 mm^d and significant LA dilatation (volume index ≥ 60 mL/m² or diameter ≥ 55 mm) when performed in a Heart Valve Centre and a durable repair is likely. ^{285,288}

IIa

B

2025

Indications for intervention in severe primary mitral regurgitation

Surgical MV repair is recommended in low-risk asymptomatic patients with severe PMR without LV dysfunction (LVESD <40 mm, LVESDi <20 mm/m², and LVEF >60%) when a durable result is likely, if at least three of the following criteria are fulfilled:

- AF
- SPAP at rest >50 mmHg
- LA dilatation (LAVI ≥ 60 mL/m² or LA diameter ≥ 55 mm)
- Concomitant secondary TR \geq moderate.

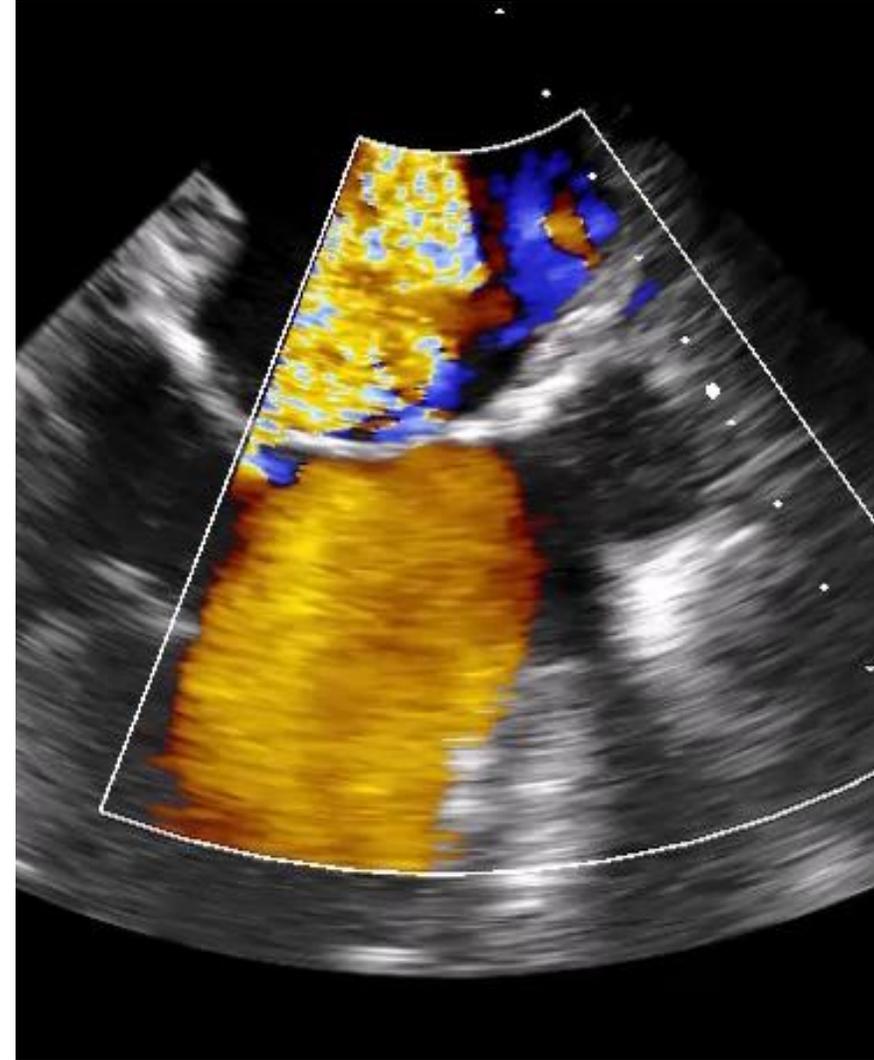
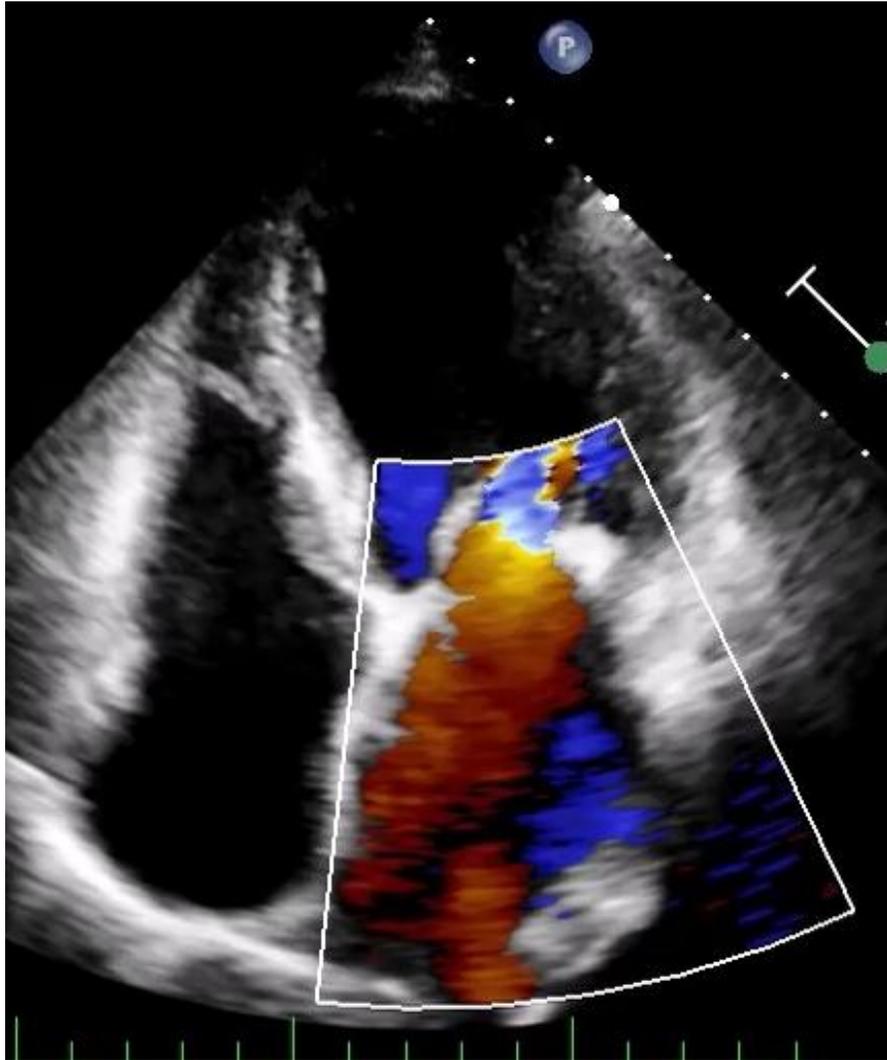
Class

Level

I

B

Mitrální regurgitace - Echo



Tendyne

Tendyne – průběh hospitalizace

- 2 dny na JIP
- 3. den drén ex
- Odlehčovací punkce fluidothoraxu vpravo
- Nastaven na terapii Warfarin + Trombex
- 8. den dimise

