

# Rossova operace ve světle nové evidence a doporučených postupů

XXXIV. Sjezd České kardiologické společnosti

Jan Vojáček

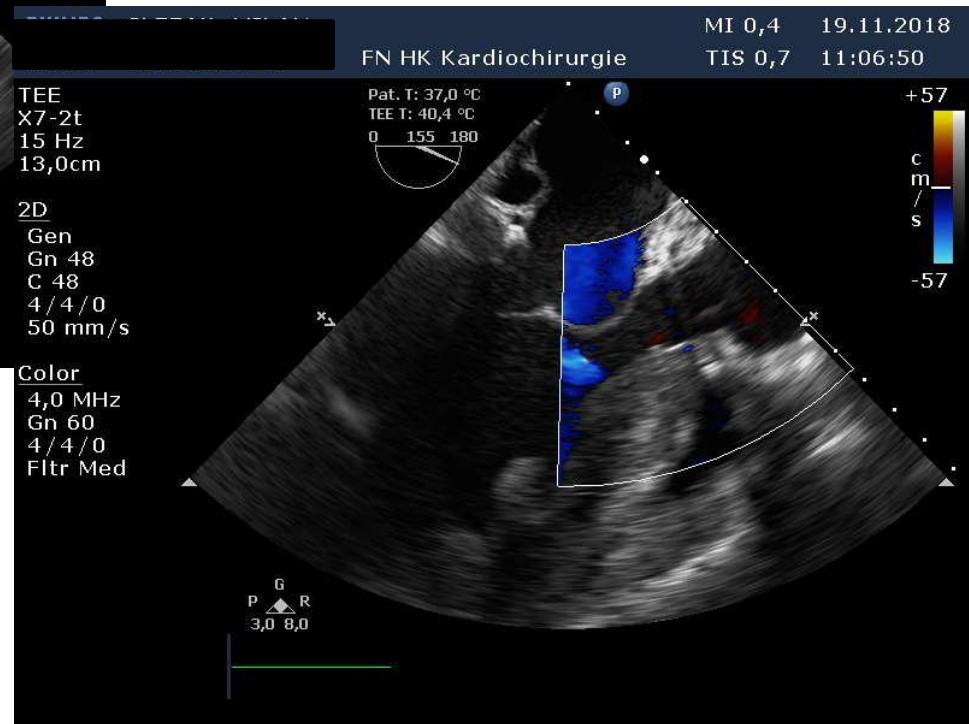
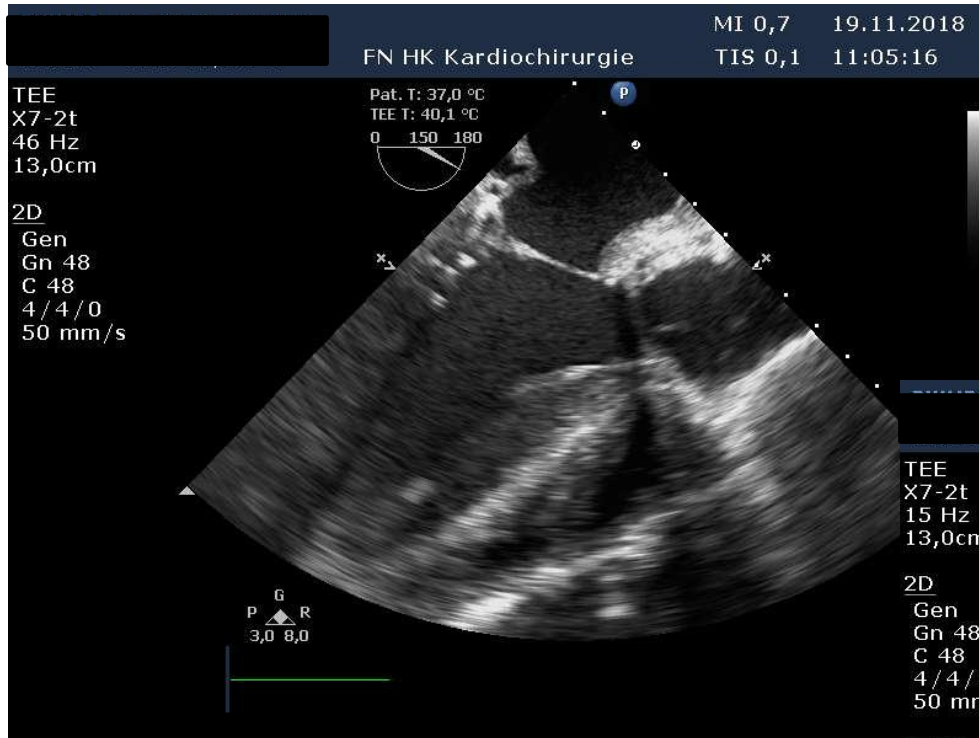
Kardiochirurgická klinika

FN a LF v Hradci Králové



# The Ross procedure

## Perioperative TEE





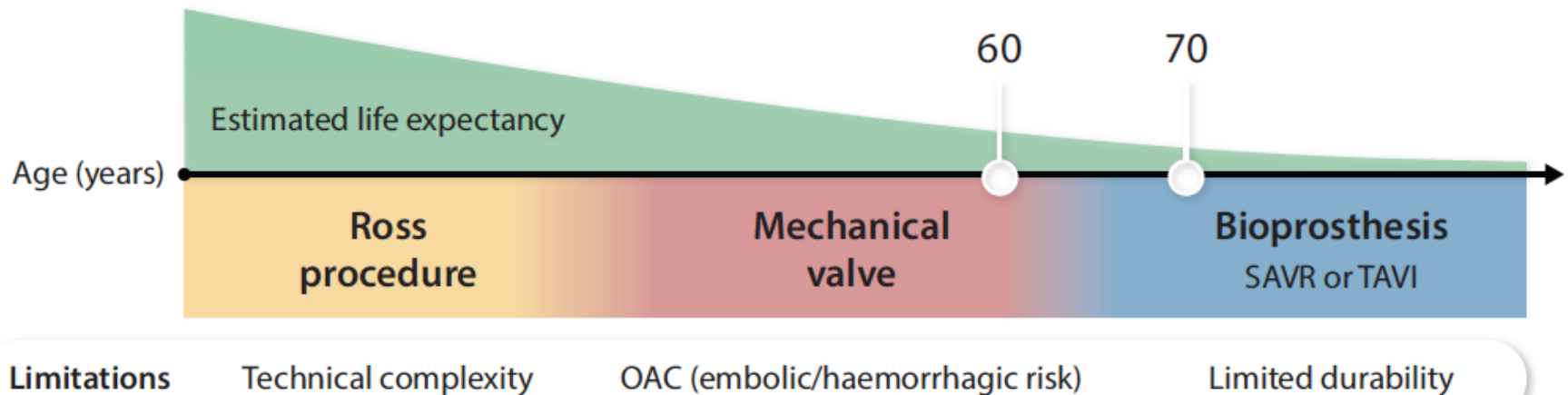
ESC

European Society  
of Cardiology

European Heart Journal (2025) **00**, 1–102  
<https://doi.org/10.1093/eurheartj/ehaf194>

ESC GUIDELINES

# 2025 ESC/EACTS Guidelines for the management of valvular heart disease





("Ross procedure"[Title/Abstract] OR "Ross operation"[Title/Abstract] OR

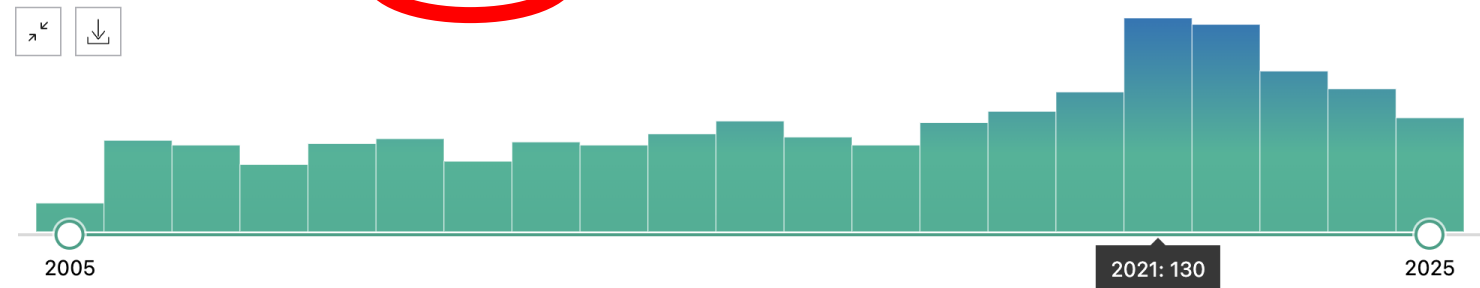
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**Propensity-Matched Comparison of the Ross Procedure and Prosthetic Aortic Valve Replacement in Adults.**  
1  
Cite El-Hamamsy I, Toyoda N, Itagaki S, Stelzer P, Varghese R, Williams EE, Erogova N, Adams DH.  
J Am Coll Cardiol. 2022 Mar 1;79(8):805-815. doi: 10.1016/j.jacc.2021.11.057.  
PMID: 35210036 [Free article](#)

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# Improved Survival After the Ross Procedure Compared With Mechanical Aortic Valve Replacement

When is the Ross operation a good choice?

Tirone E. David, MD, Anna W...

## Long-Term Outcomes of Patients Undergoing the Ross Procedure

JACC 2021

German Ross Registry





Aug 14, 2016

Outcomes of the Ross Procedure Compared With Mechanical Aortic Valve Replacement: A Matched Cohort Study

T. DAVID, Circulation, August 2016

Cite this article as: Gofus J, Fila P, Drabkova S, Zacek P, Ondrasek J, Nemecek P *et al.* Ross procedure provides survival benefit over mechanical valve in adults: a propensity-matched nationwide analysis. *Eur J Cardiothorac Surg* 2022; doi:10.1093/ejcts/ezac013.

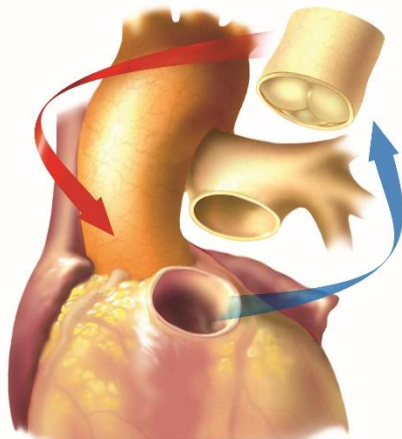
## Ross procedure provides survival benefit over mechanical valve in adults: a propensity-matched nationwide analysis

Jan Gofus <sup>a</sup>, Petr Fila <sup>b,\*</sup>, Svetlana Drabkova<sup>c</sup>, Pavel Zacek <sup>a</sup>, Jiri Ondrasek<sup>b</sup>, Petr Nemecek <sup>b</sup>, Jan Sterba<sup>b</sup>, Martin Tuna<sup>a</sup>, Jiri Jarkovsky<sup>c</sup> and Jan Vojacek<sup>a</sup>

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Dept. of Cardiac Surg, UH HK; CKTCH, Brno

**296** Ross adult patients



All cardiac centers in Czech Republic

**5120** mechanical AVR

Cite this article as: Gofus J, Fila P, Drabkova S, Zacek P, Ondrasek J, Nemecek P *et al.* Ross procedure provides survival benefit over mechanical valve in adults: a propensity-matched nationwide analysis. *Eur J Cardiothorac Surg* 2022; doi:10.1093/ejcts/ezac013.

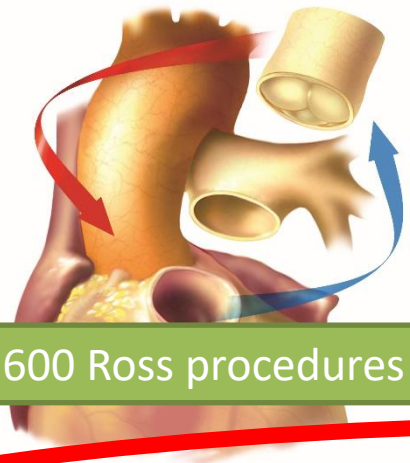
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Public



More than 600 Ross procedures

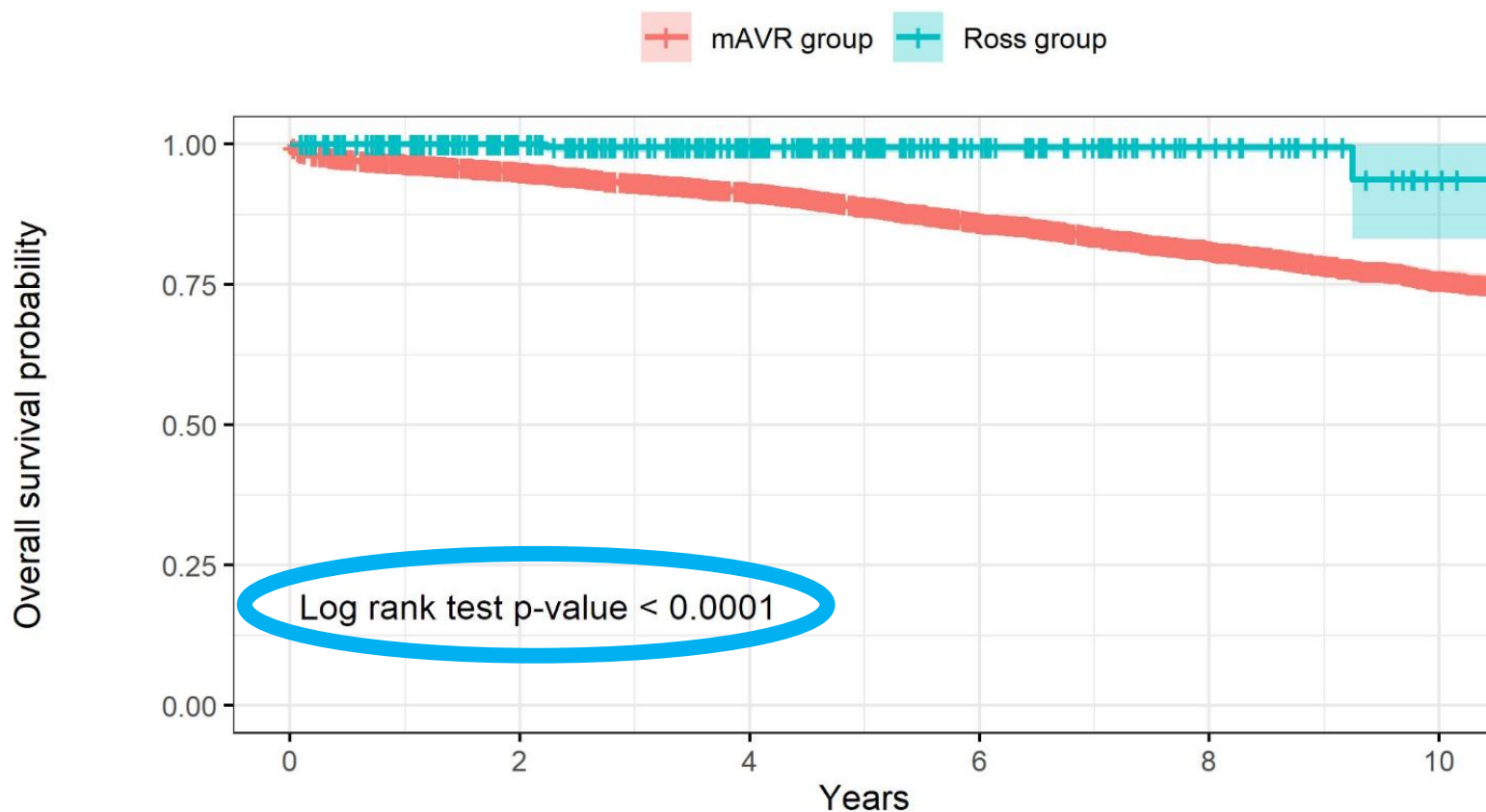
**291** Ross adult patients

**291** mechanical AVR

0% In-hospital mortality

Cite this article as: Gofus J, Fila P, Drabkova S, Zacek P, Ondrasek J, Nemecek P *et al.* Ross procedure provides survival benefit over mechanical valve in adults: a propensity-matched nationwide analysis. *Eur J Cardiothorac Surg* 2022; doi:10.1093/ejcts/ezac013.

## Ross procedure provides survival benefit over mechanical valve in adults: a propensity-matched nationwide analysis



Cite this article as: Vojacek J, Gofus J, Andreas M, Bavaria JE, Berdajs D, Casselman FPA *et al.* EACTS Expert Consensus Statement on the Ross Procedure in Adult Patients. *Eur J Cardiothorac Surg* 2025; doi:10.1093/ejcts/ezaf295.

## EACTS Expert Consensus Statement on the Ross Procedure in Adult Patients

Jan Vojacek<sup>ID\*1</sup>; Jan Gofus<sup>ID1</sup>; Martin Andreas<sup>ID2</sup>; Joseph E. Bavaria<sup>3</sup>; Denis Berdajs<sup>4</sup>; Filip P. A. Casselman<sup>5</sup>; Ismail El-Hamamsy<sup>6</sup>; Tomas Holubec<sup>ID7</sup>; Laurent de Kerchove<sup>ID8</sup>; Milan Milojevic<sup>ID9,10</sup>; Leonardo Mulinari<sup>11</sup>; Maral Ouzonian<sup>ID12</sup>; Peter Skillington<sup>13</sup>; Johanna J. M. Takkenberg<sup>14</sup>; Peter Verbrughe<sup>15</sup>; EACTS Scientific Document Group

26 pages and 24 Expert Statements

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# Ross Procedure in Adults- EACTS Expert Statement

## Rationale

- Restoration of long-term life expectancy to the level of age- and sex-matched general population
- Superior hemodynamic performance compared to all prosthetic aortic valve replacement options
- Improved freedom from valve-related complications



## Patient selection

- Age < 60 years and life expectancy > 15 years, minimum comorbidities
- Optimal indication is aortic valve stenosis or mixed disease with non-dilated annulus
- In pure aortic regurgitation and/or annulus dilation, surgical technique must be adjusted



## Surgical technique

- Tailored free standing root replacement with stabilization of aortic annulus and sinotubular junction if necessary
- Autologous inclusion technique
- Prosthetic inclusion technique



## Centralization and Ross Centres of Excellence

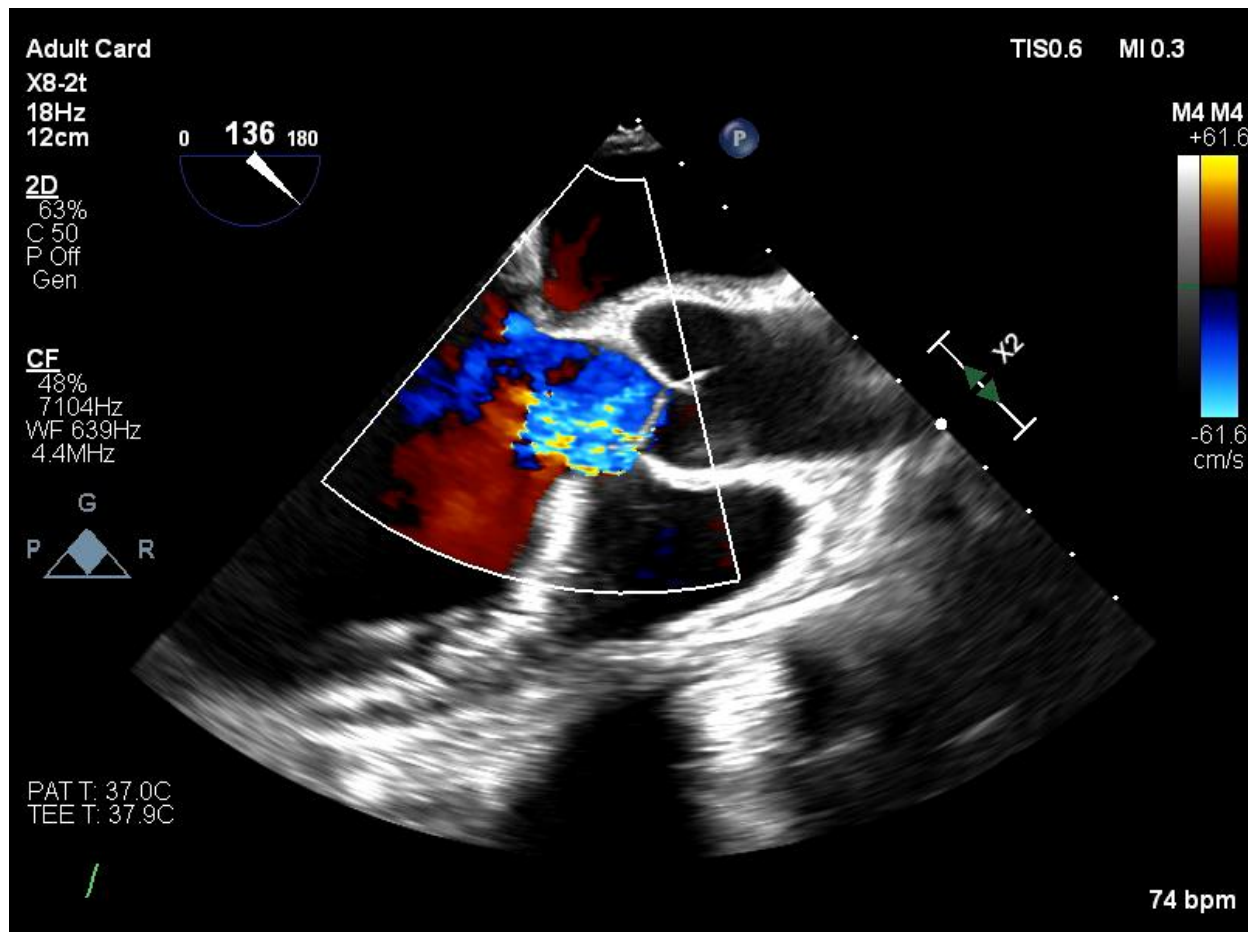
- Strong positive volume-outcome association for the outcomes of Ross procedure at surgeon- and centre-level
- Centres of Excellence defined by case volume, mortality, clinical and echocardiographic outcomes
- Longitudinal postoperative clinical and echocardiographic follow-up



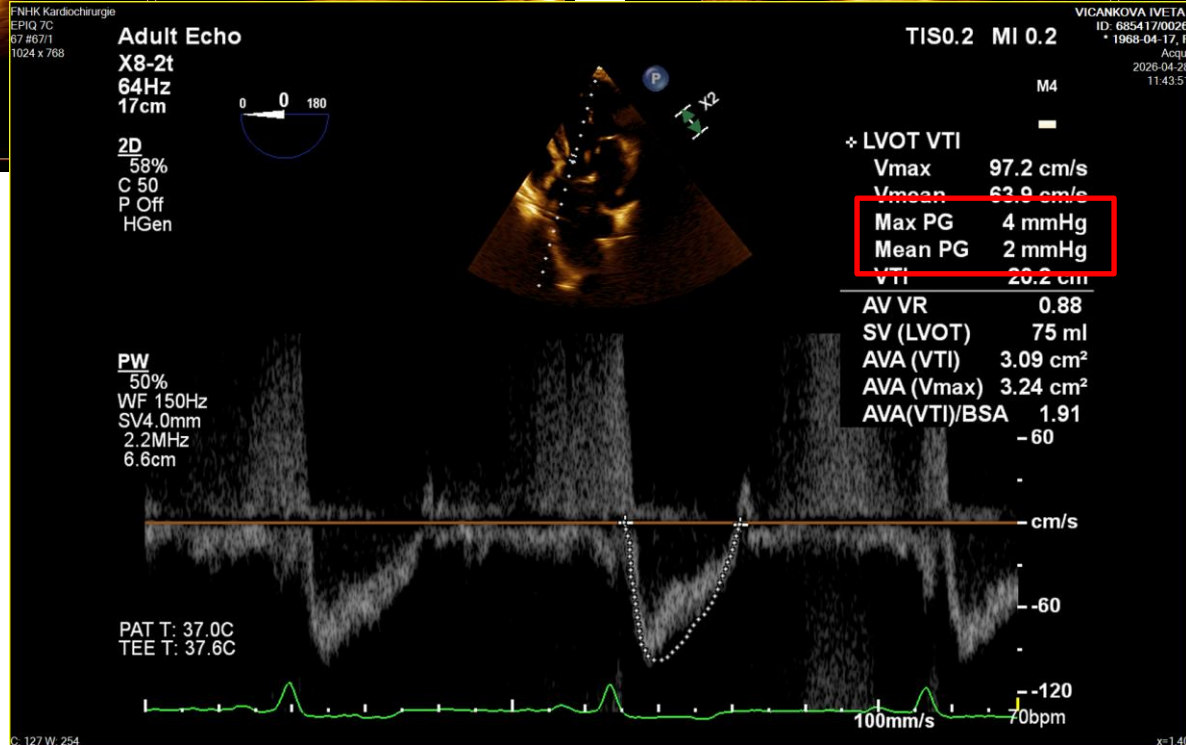
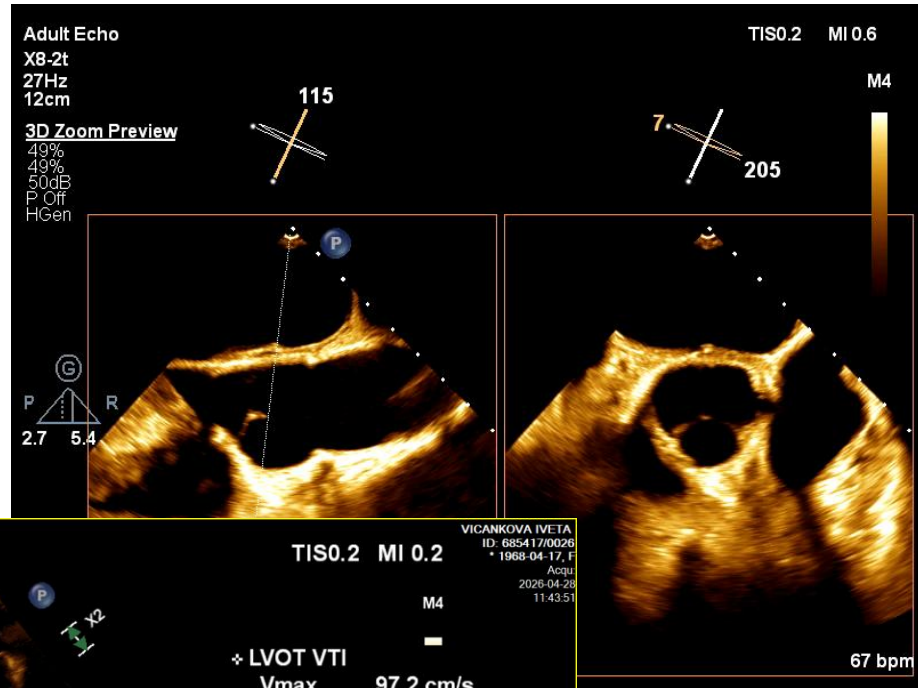
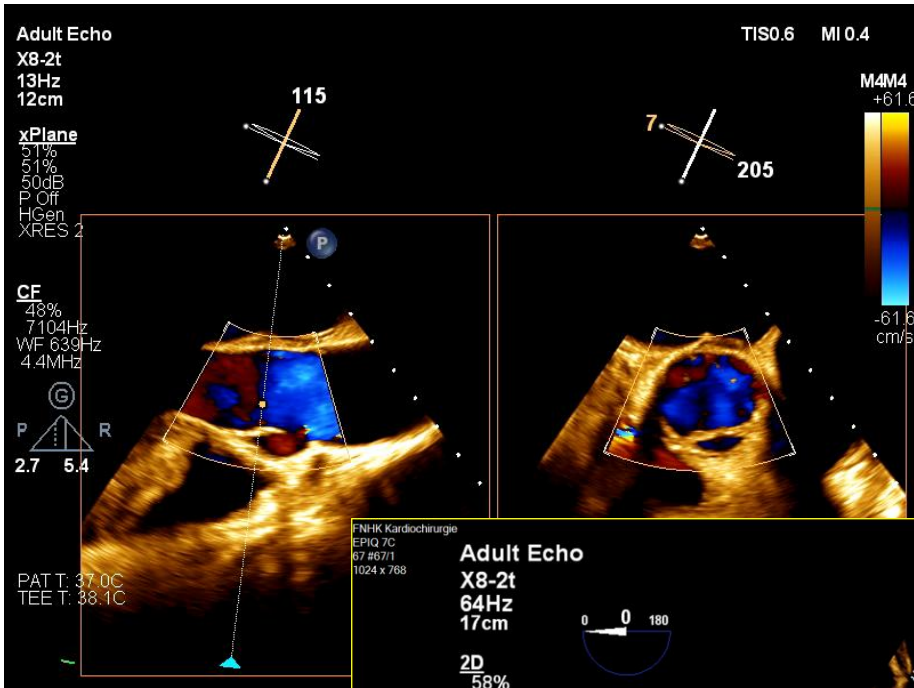
## Consensus Table 2. Patient Selection

- The Ross procedure should be considered in adult patients aged less than 60 years with minimal comorbidities, following a shared decision-making process.
- In women of childbearing age requiring AVR, the Ross procedure is the preferred option.
- Coronary anomalies should be approached with caution in patients being considered for the Ross procedure.
- The optimal indication for the Ross procedure is AS or mixed disease with predominant stenosis, particularly when associated with a non-dilated aortic annulus.
- Patients with pure AR who are not eligible for AVR are good candidates for the Ross procedure if the appropriate surgical technique is used.
- The Ross procedure may be considered in selected patients with rheumatic heart disease or with infective endocarditis.
- The Ross procedure should be avoided in patients with genetically confirmed syndromic aortopathy, such as Marfan syndrome.
- The Ross procedure should be avoided in patients with autoimmune disorders.

Pacientka 57 let; 155cm/80kg; BMI 35  
Ø aortálního anulu: 20mm



# Ross procedure: TEE 1 year after the procedure



THE HOMOGRAFT

RETURN

IN

