




# Pannus versus thrombus: unmasking the cause of mechanical valve obstruction

 Antonija Raguz<sup>1\*</sup>,  
 Marijana Knežević  
 Praveček<sup>1,2</sup>,  
 Katica Cvitkušić  
 Lukenda<sup>1,2</sup>

<sup>1</sup>General Hospital "Dr. Josip Benčević", Slavonski Brod, Croatia

<sup>2</sup>Josip Juraj Strossmayer University of Osijek, Faculty of Dental Medicine and Health Osijek, Osijek, Croatia

**KEYWORDS:** anticoagulants, atrial fibrillation, echocardiography, transesophageal, heart failure, heart valve prosthesis, mitral valve stenosis, risk assessment, thrombosis.

**CITATION:** *Cardiol Croat.* 2026;21(1-2):37. | <https://doi.org/10.15836/ccar2026.37>

**\*ADDRESS FOR CORRESPONDENCE:** Antonija Raguz, Opća bolnica Dr. Josip Benčević, Andrije Štampara 42, HR-35000 Slavonski Brod, Croatia. / Phone: +385-99-678-81-48 / E-mail: [antonija.raguz@yahoo.com](mailto:antonija.raguz@yahoo.com)

**ORCID:** Antonija Raguz, <https://orcid.org/0000-0002-7032-2852> • Marijana Knežević Praveček, <https://orcid.org/0000-0002-8727-7357> Katica Cvitkušić Lukenda, <https://orcid.org/0000-0001-6188-0708>

**Introduction:** Mechanical heart valves are highly thrombogenic and require guided life-long anticoagulation. Their thrombosis is mainly subacute or chronic. Early diagnosis is crucial for preventing life threatening complications like valve obstruction, systemic embolization, cardiogenic shock. Treatment may vary according to patient's clinical status, duration of symptoms, size of thrombus, severity of obstruction, anticoagulation status, operative and bleeding risk. Guidelines are given for optimizing anticoagulation, fibrinolysis and surgical procedures; transcatheter manipulation is an alternative method with promising mid-term results at experienced centers.<sup>1-3</sup>

**Case report:** We present 74-year-old woman admitted with decompensated heart failure (NYHA IV) after unsuccessful diuretic escalation. She is a long-time diabetic, treated for atrial fibrillation, arterial hypertension and hyperlipidemia. 20 years ago, she underwent a procedure composed of ASD patch closure, mitral valve annuloplasty and single bypass grafting (VSM-OM). In 2017 two bare metal stents were implanted due to progressive coronary artery disease. In 2020. routine transthoracic ultrasound control revealed stenotic mitral valve with estimated MVA 1.3-1.4cm<sup>2</sup>, mild MR, heavily dilated left atrium and preserved left ventricular function. Coronary angiography showed diffuse multivessel disease, occluded bypass, strong collateral flow and LVEF 65% on ventriculography. On transesophageal echocardiography abundant fibrotic pannus ingrowth was visualized causing stenosis. Patient was subjected to mechanical mitral valve replacement. In the following years she experiences two ischemic cerebrovascular infarctions. Mitral prosthesis malfunction was not detected; INR was repeatedly 2-2.5 and carotid ultrasound showed intermediate stenosis. At current admission she was hypotensive with pulmonary edema. Acute coronary syndrome was excluded. Striking severe mitral stenosis was seen on transthoracic ultrasound, indicators of severe pulmonary hypertension, dilated RV with preserved contractility interrupting left ventricular systolic function, noticeable SEC in left atrium. Prosthesis thrombosis was suspected and transesophageal ultrasound was performed, thrombi in left atria were visualized with dense SEC, prosthesis itself was surrounded and invaded with pannus without obstructive thrombotic masses, severity of obstruction was confirmed (MVA 0.8cm<sup>2</sup>, mean gradient 22mmHg). Operative risk was deemed too high. She was discharged in NYHA III functional status with enoxaparin 1mg/kg subcutaneous twice daily, aspirin 75mg orally and optimal heart failure medical treatment.

**Conclusion:** Our therapeutic option here is optimal anticoagulation. Heparin treatment is planned for 4 weeks, then reassessment to decide when to reintroduce warfarin with target INR >3 or to use t-PA if indicated.

**RECEIVED:**  
October 22, 2025

**ACCEPTED:**  
November 14, 2025



## LITERATURE

- Soria Jiménez CE, Papolos AI, Kenigsberg BB, Ben-Dor I, Satler LF, Waksman R, et al. Management of Mechanical Prosthetic Heart Valve Thrombosis: JACC Review Topic of the Week. *J Am Coll Cardiol.* 2023 May 30;81(21):2115-2127. <https://doi.org/10.1016/j.jacc.2023.03.412>
- Değirmenci H, Bakirci EM, Hamur H, Arisoy A, Tan M. Current Approach to Mechanical Valve Obstruction. *Glob J Perioperative Med.* 2020;4(1):009-013. <https://orcid.org/0000-0003-0618-7227>
- Saksena D, Choudhary A, Varma S, Shetty S, Jain V. Long-Term Outcomes of Valve Replacement With Mechanical Prosthesis in Patients With Valvular Heart Disease: A Single-Center Retrospective Study. *Cureus.* 2025 May 22;17(5):e84655. <https://doi.org/10.7759/cureus.84655>