

Recurrent endocarditis causing severe obstruction of bioprosthetic tricuspid valve

Nawrót infekcyjnego zapalenia wsierdza skutkujący zablokowaniem bioprotezy zastawki trójdzielnej

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A 24-year-old woman, intravenous drug user, was admitted to the hospital with severe dyspnoea, fluid retention, and high fever lasting for a week. Five months prior to admission the patient underwent tricuspid valve replacement with a 31-mm Edwards Lifesciences bioprosthesis due to staphylococcal endocarditis and severe tricuspid valve regurgitation. The symptoms had aggravated for the previous two days. Inflammatory markers were elevated and increased during the hospitalisation. Combined empiric antibiotic therapy was immediately initiated. Blood culture confirmed methicillin-sensitive *Staphylococcus aureus* infection. Transthoracic echocardiography revealed large vegetations on bioprosthesis and in the right ventricular cavity protruding into the right ventricular outflow tract (Fig. 1A–C). The bioprosthesis was stenotic with peak velocity 2.4 m/s and mean transvalvular pressure gradient 14 mm Hg (Fig. 2A, B). Three-dimensional image acquisition was challenging because of respiratory instability, however feasible. It confirmed the presence of large pathologic masses and impaired motion of bioprosthetic leaflets (Fig. 2C). Computed tomography (CT) pulmonary angiogram excluded pulmonary embolism, and a CT scan of the brain and abdomen showed no evidence of systemic embolism. The patient was immediately referred to cardiac surgery and underwent tricuspid valve replacement. Intraoperative inspection revealed that not only tricuspid bioprosthesis and adjacent endocardium but also parietal endocardium was involved in the inflammatory process with vegetations. Extensive debridement without the necessity of reconstruction was performed. A Labcor 33 mm bioprosthesis was implanted. Due to third-degree atrioventricular block during the operation epicardial leads with external pacemaker were implanted. However, complete heart block persisted and the patient was qualified for transthoracic implantation of an epicardial screw-in electrode and permanent single-chamber pacemaker system. The postoperative course was uneventful. Replacement of a tricuspid valve is an infrequent cardiac surgery procedure. The majority of right-sided endocarditis cases are diagnosed in intravenous drug users. The mortality is lower than in left-sided localisation (5–10%). The decision about re-implantation of the prosthesis is a challenge because most addicts usually resume drug use after discharge. Recurrences of endocarditis in injection drug addiction are reported as relatively often. In the literature there is a lack of controlled studies assessing the prognosis after valve replacement in that group of patients. This fact makes the decision difficult and requires an individual approach. Another subject of debate remains the choice between mechanical or bioprosthetic valve. Injury of the conduction system is a possible complication, especially in the case of debridement, and some patients need permanent pacing. To the best of our knowledge, our patient represents the first reported case of severe bioprosthetic tricuspid valve obstruction caused by staphylococcal vegetations.

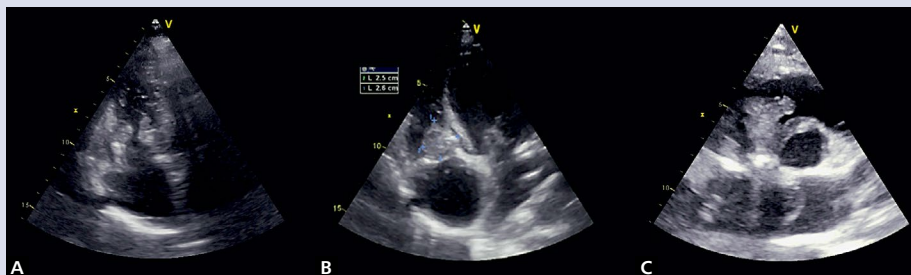


Figure 1. A, B. Two-dimensional transthoracic echocardiography, modified apical four-chamber view showing large vegetations on tricuspid bioprosthesis; C. Modified parasternal short-axis view showing the vegetations on tricuspid bioprosthesis and in right ventricular outflow tract

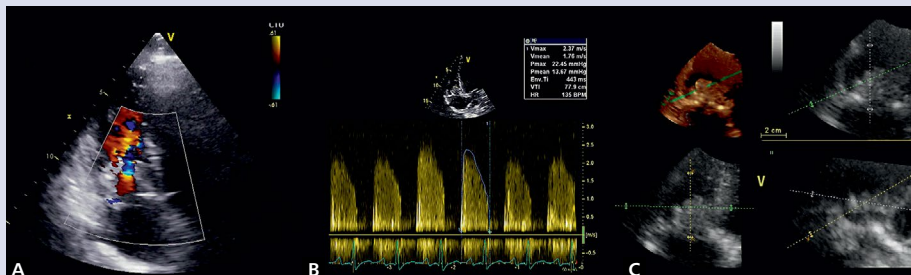


Figure 2. A. Transthoracic echocardiography with colour Doppler; B. Continuous Doppler showing high-velocity flow and high transvalvular gradient because of severe tricuspid stenosis; C. Three-dimensional echocardiography displaying severe obstruction of bioprosthesis

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