

Serious consequences of enterococcal endocarditis in an active diving instructor

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A 58-year-old man, diving instructor, after two aortic coarctation surgeries at the age 14 and 37, with a history of mild mitral regurgitation (MR), urolithiasis, and urosepsis caused by *Enterococcus faecalis* 10 months earlier, was admitted with anemia, elevated C-reactive protein, D-dimer and N-terminal pro-B-type natriuretic peptide. He reported of recurring fever, sweats, back pain, and exercise intolerance over the last five months. Antibiotics, such as linezolid, vancomycin, and ampicillin with sulbactam were used for 10–14 days, however, the cause of symptoms was still unexplained.

During the same period, the patient suffered an ischemic stroke in the right posterior cerebral artery and a permanent local visual loss.

Currently, blood cultures have shown *Enterococcus faecalis* growth again. Transthoracic echocardiography performed due to a loud systolic murmur showed severe eccentric MR (Figure 1A; Supplementary material, Video S1) and transoesophageal echocardiography (TOE) confirmed mitral valve (MV) infective endocarditis (IE) (Figure 1B). Three-dimensional TOE visualized bacterial vegetations up to 8–9 mm long, at the posterior mitral leaflet, a smaller one (4.5 mm) at the anterior leaflet, and a large MR jet (Figure 1C [1, 2]; Supplementary material, Video S2). No vegetations were observed at the site of aortic coarctation surgery (Figure 1D).

Contrast-enhanced magnetic resonance of the spine revealed spondylodiscitis infection-related lesions at the levels of

Th10/Th11 and Th11/Th12 and an inflammatory infiltrate in the paravertebral soft tissues (Figure 1E). Targeted ampicillin and ceftriaxone therapy, lasting 6 weeks resulted in clinical improvement and vegetation regression on TOE. On positron emission tomography/computed tomography (PET/CT) after 4 weeks, only post-inflammatory lesions in the spine were described (Figure 1F). The patient was discharged in good condition. He underwent MV repair with implantation of a semi-rigid ring and artificial cords to the posterior leaflet.

Enterococcus faecalis is responsible for over 90% of enterococcal IE, and it has been acknowledged in the 2023 recommendations as a typical IE bacterium [1]. Some new registries indicate an increased IE incidence caused by this pathogen [2].

An early IE diagnosis is essential because *E. faecalis* is highly resistant and requires prolonged therapy (up to 6 weeks) of synergistic bactericidal antibiotics [1].

In the described case, the time to establish the correct diagnosis was almost 6 months, so the previous antibiotic therapy time was too short, which resulted in further complications, such as an ischemic stroke, disc inflammation, severe MR, and the need for repeated cardiac surgery.

It is worth noting, that spondylodiscitis is the most frequent hematogenous osteoarticular septic complication in the IE population, with an enterococcal etiology being one of the most common [1, 3]. In patients with spondylodiscitis and positive blood cultures with typical bacteria, echocardiography is rec-

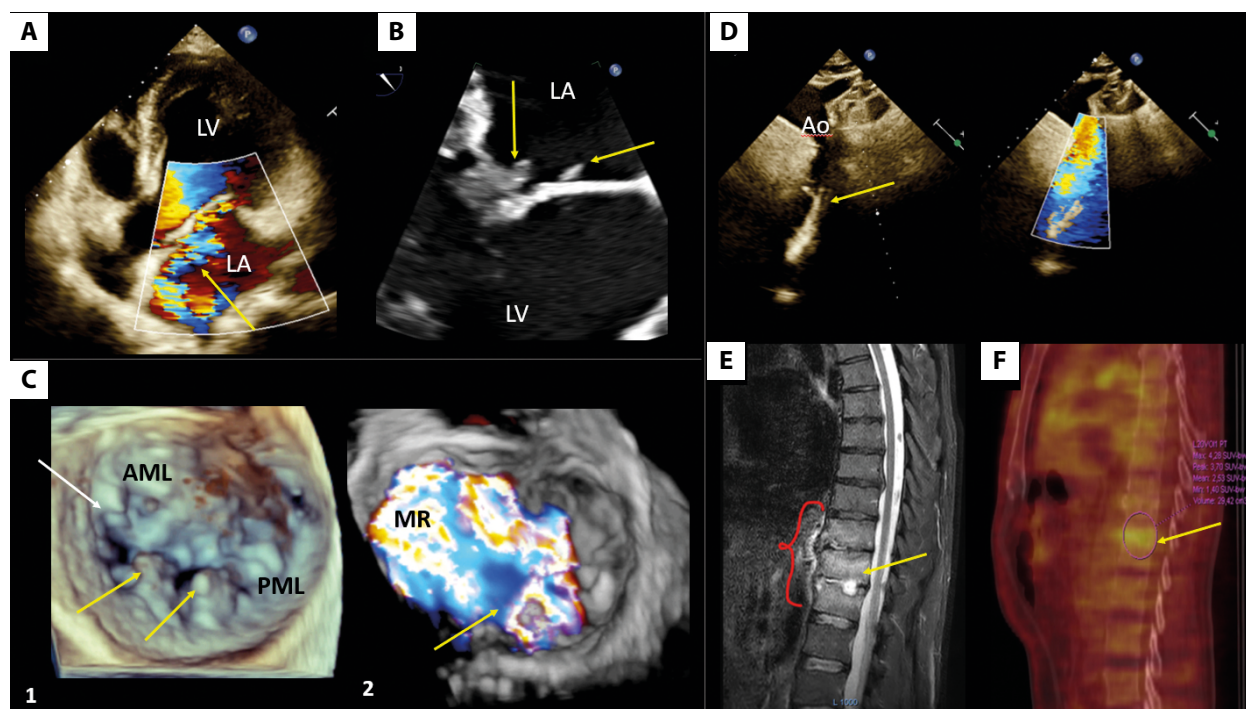


Figure 1. Echocardiography, magnetic resonance of the spine and PET/CT in a patient with mitral valve endocarditis. **A.** Eccentric jet of severe mitral regurgitation (arrow); two-dimensional transthoracic echocardiography, color Doppler (Supplementary material, *Video S 1*). **B.** Mitral valve infective endocarditis; bacterial vegetations attached to the mitral leaflets (arrows); 2-dimensional transoesophageal echocardiography; **C.** Bacterial vegetations attached to the posterior mitral leaflet (yellow arrows) and the anterior leaflet (white arrow) (1) and a wide jet of mitral regurgitation on color Doppler (arrow) (2); 3-dimensional transoesophageal echocardiography (Supplementary material, *Video S2*); **D.** Descending aorta at the level of the previous coarctation surgery (arrow); 2-dimensional transthoracic echocardiography (left panel), color Doppler (right panel). **E.** Spondylodiscitis: infectious lesions at the levels of Th10/Th11 and Th11/Th12 (arrow) and an inflammatory infiltrate in the paravertebral soft tissues (red brace); contrast-enhanced magnetic resonance. **F.** Post-inflammatory lesions in the spine (arrow); positron emission tomography/computed tomography

Abbreviations: AML, anterior mitral leaflet; Ao, aorta; LA, left atrium; LV, left ventricle; MR, mitral regurgitation; PML, posterior mitral leaflet

ommended to rule out IE [1]. The role of three-dimensional TOE in diagnosing IE is indispensable, especially in precise MV assessment [4]. PET/CT is recommended in symptomatic IE patients to detect peripheral lesions [1] and is useful in monitoring their response to therapy.

A significant delay in establishing the diagnosis leads to serious consequences and contributes to higher mortality [5], therefore, we should urgently perform an echocardiogram in patients with recurrent fever and a heart murmur, back pain, or patients after previous heart surgery.

Supplementary material

Supplementary material is available at https://journals.viamedica.pl/kardiologia_polska.

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