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mimicking polymyalgia rheumatica**

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A rare clinical presentation of enterococcal aortic valve endocarditis mimicking polymyalgia rheumatica

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A 71-year-old woman with type 2 diabetes, mild aortic stenosis and degenerative spine disease was admitted to the connective tissue disease clinic due to symptoms suggestive of polymyalgia rheumatica (PMR). For 2–3 months she had been complaining of progressive weakness and pain in the shoulder girdle, pelvic girdle, neck, proximal limb muscles and lumbar spine.

In addition, there were low-grade fever, periodic chills, weight loss of 9 kg, slowed speech, and problems with lifting the upper and lower limbs.

The physical examination revealed a systolic murmur, tenderness of the shoulder joints, pain over the greater trochanters, limited mobility in the shoulder joints and hip joints, tenderness of the skin of the lower legs.

Inflammatory parameters were elevated (CRP 111 mg/L; reference range <5mg/L; WBC $16 \times 10^3/\mu\text{L}$; reference range $3.7\text{--}9.2 \times 10^3/\mu\text{L}$), hemoglobin was decreased (10.3 g/dL; reference range 11.8–15.2 g/dL) and rheumatoid factor (RF) was detected at a low, clinically insignificant titer (1:80).

The correct diagnosis was made following the first projections of transthoracic echocardiogram. It showed mobile vegetation 25mm long attached to the aortic valve (Figure 1A, B) and a moderate aortic regurgitation as a consequence of the valvular inflammation (Figure 1C).

The diagnosis of infective endocarditis (IE) was established. *Enterococcus faecalis* was isolated from blood cultures, and intravenous ampicillin (12 g/day) and ceftriaxone (4 g/day) were administered. Two days after the diagnosis cardiac surgeons removed infected aortic valve leaflets (Figure 1D) and an aortic bioprosthesis was implanted with a good result (Figure 1E, F). The culture of the excised valve tissue was negative, however molecular testing confirmed the presence of *E. faecalis*. After the treatment was completed, inflammatory parameters normalized and all musculoskeletal symptoms resolved completely.

The probable source of bacteremia was an inflammatory-dysplastic lesion in the large intestine detected during colonoscopy, which was then surgically removed.

Infective endocarditis may mimic rheumatic disease [1,2]. The pathogenesis of rheumatological symptoms in IE is not well understood, but most likely related to an immunological-inflammatory etiology. Muscle pain and back pain are reported in 12%–15% and arthralgia in approx. 10% of cases [1].

A syndrome resembling PMR with pain and morning stiffness in the shoulders and hips, and weakness of the proximal muscles is a very rare manifestation of IE, and affects 0.9% of cases [1]. PMR is a clinical diagnosis that requires the exclusion of mimicking diseases, especially infections and cancers. It can be supported by response to glucocorticosteroids therapy [3,4].

The differential diagnosis includes other rheumatic diseases involving muscles and large joints, systemic infectious diseases, drug-induced myopathies, endocrine diseases associated with myalgia and depressive syndrome [4].

Echocardiography is a crucial tool to exclude endocarditis and should be considered early in patients with PMR-like symptoms accompanied by fever or low-grade fever, chills, a heart murmur, a history of valvular disease and prosthetic valves, or a severe inflammatory response [2,5]. The use of steroids or other immunosuppressive drugs in a case of unrecognized infection may be a serious mistake, resulting in the spread of infection, sepsis and even death.

It is also important to be aware that PMR-like syndrome may accompany cancer, and special oncological vigilance is recommended [4].

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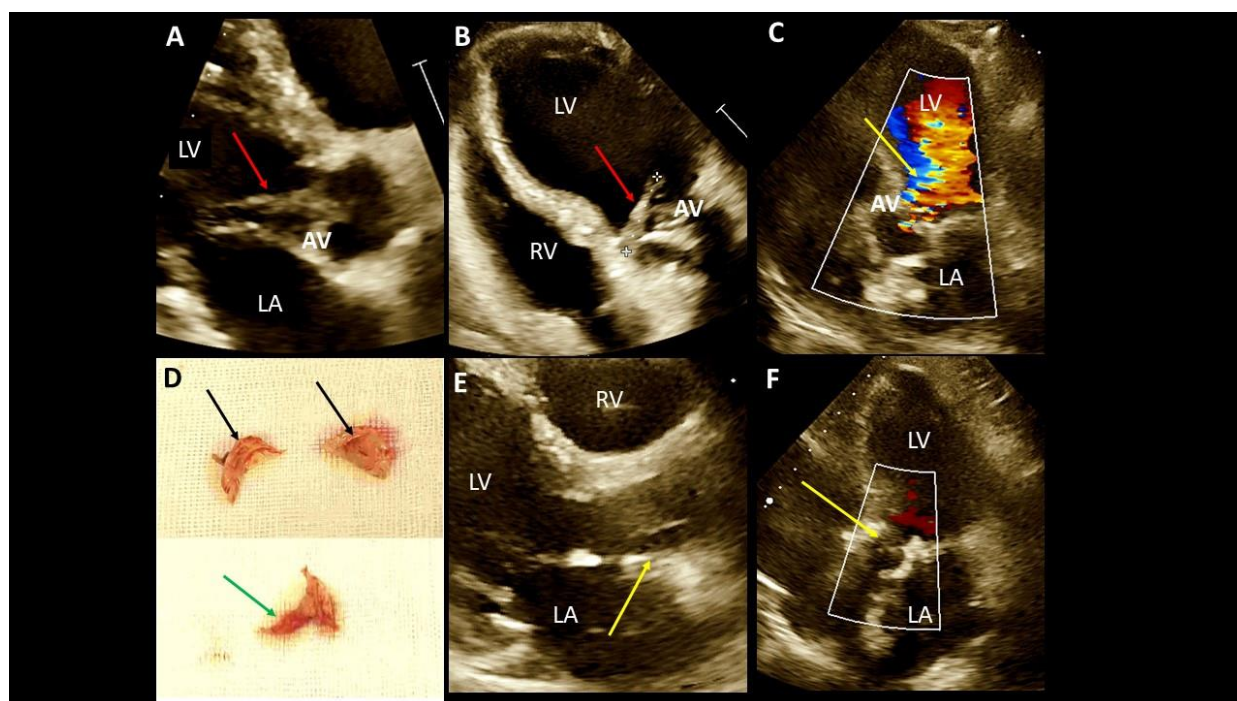


Figure 1 Transthoracic echocardiography in a patient with aortic valve endocarditis: **A** – long bacterial vegetation attached to the aortic valve (arrow); parasternal long axis view; **B** –

vegetation on the aortic valve visible in the apical five-chamber view (arrow); **C** – moderate aortic regurgitation (arrow) resulting from destruction of the aortic leaflets; color Doppler, apical five-chamber view; **D** – damaged aortic valve leaflets (black arrows) and a vegetation shown in pictures A and B (green arrow); **E, F** – correct image of the the bioprosthetic valve (Perimount Magna Ease, 21 mm) in the aortic position (arrows); parasternal long axis view, apical five-chamber view

Abbreviations: AV, aortic valve; LA, left atrium; LV, left ventricle; RV, right ventricle

Short title: Aortic valve endocarditis mimicking polymyalgia rheumatica