



Medical Imagery

Progression of *Lactobacillus plantarum* prosthetic valve endocarditis followed by transesophageal echocardiogram

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ABSTRACT

Endocarditis due to *Lactobacillus* species is extremely rare. We report an uncommon case of *Lactobacillus plantarum* bioprosthetic aortic valve endocarditis, presenting with severe aortic steno-regurgitation, which responded to conventional medical and surgical treatment. This case provides a better understanding of the disease process of *L. plantarum* and highlights the role of transesophageal echocardiography in following the entire course of endocarditis.

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Medical imagery

Endocarditis caused by *Lactobacillus* represents <0.5% of all endocarditis cases (Borriello et al., 2003) and is associated with structural heart diseases, antibiotic and probiotic use, recent surgery, and immunodeficiency (Cannon et al., 2005).

Transesophageal echocardiography (TEE) performed on a 48-year-old male with an aortic surgical bioprosthesis who presented with fever (38.3 °C), revealed marked fibro-plastic thickening of the cusps (Figure 1A), mobile vegetations adhering to the anterior aortic cusp, and commissural fusion, causing severe steno-regurgitation (Supplementary Material Video S1). ¹⁸F-fluorodeoxyglucose positron emission tomography/computed tomography (¹⁸F-FDG-PET/CT) showed tracer accumulation close to the prosthetic aortic valve (Figure 1B). *Lactobacillus plantarum* was

isolated from blood cultures, and targeted therapy with intravenous penicillin G (18 million U/day) and intravenous gentamicin (3 mg/kg/day) was started and continued for 6 weeks. TEE performed at weeks 3 and 6 (negative cultures) showed a reduction of the cusp thickening and disappearance of the commissural fusion (Figure 1C–E). In the last TEE, no vegetations were described, cusp mobility had improved, and the mean gradient was reduced; however, severe regurgitation persisted (Figure 1F). The patient was discharged on oral antibiotic therapy (amoxicillin/clavulanic acid 875/125 mg every 12 h) and 6 months later he underwent redo valve replacement. Histological analysis of the explanted prosthesis showed fibromyxoid valve degeneration, calcifications, and chronic granulomatous inflammation.

The progression of *L. plantarum* endocarditis was followed by TEE, showing findings congruent with the evolution of

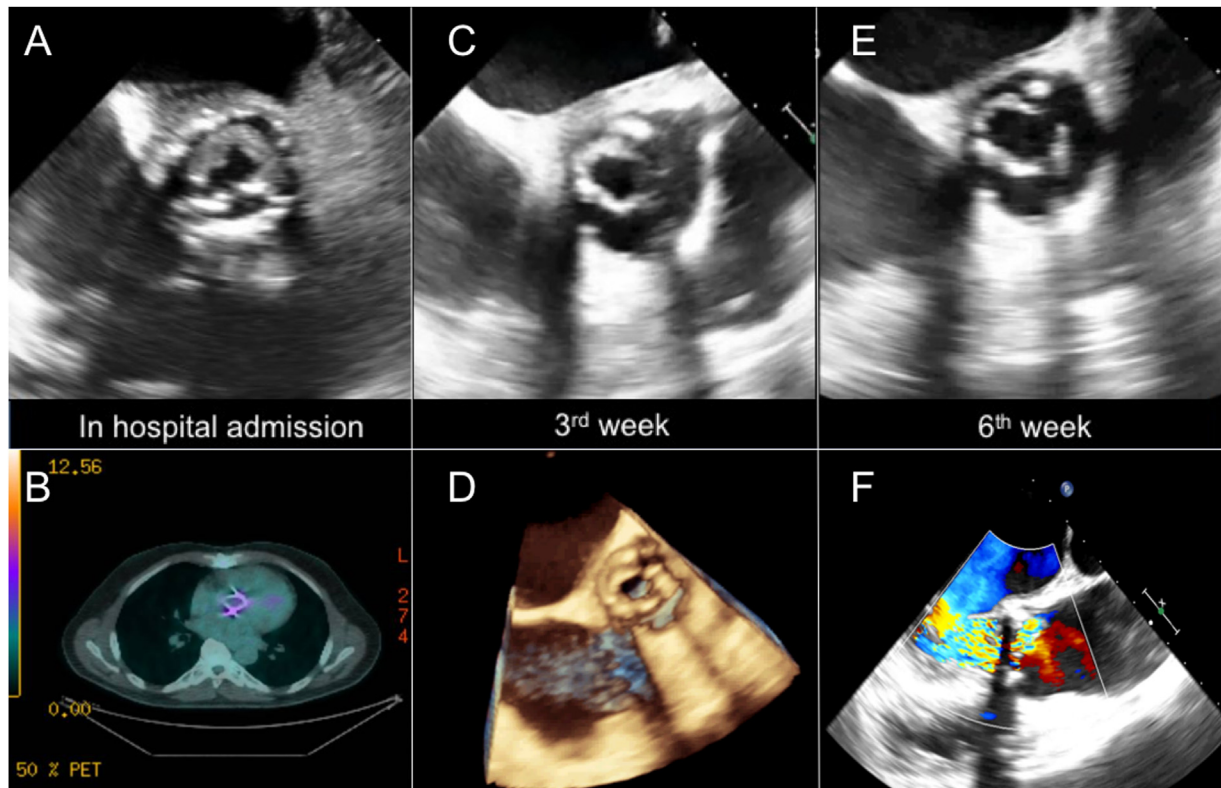


Figure 1. Step-by-step imaging of aortic prosthetic *Lactobacillus plantarum* endocarditis. (A) Baseline two-dimensional transesophageal echocardiogram showing marked fibro-plastic thickening of the cusps (free edges), commissural fusion, and reduced opening in systole causing severe stenosis. (B) ^{18}F -FDG-PET/CT showing tracer accumulation close to the aortic valve. (C) Reduction of the cusp thickening, improvement of commissural opening, and moderate stenosis. (D) Three-dimensional echocardiogram confirming the two-dimensional findings. (E) Further reduction of the cusp thickening and disappearance of commissural fusion. (F) Severe aortic regurgitation due to marked fibrotic retraction of cusps and degeneration.

inflammation and its resolution, leaving the valve severely damaged (Supplementary Material Video S2).

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Ethical approval

The work described was conducted in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki). Informed consent was obtained for all medical procedures and for publication of the data.

Conflict of interest

None.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.ijid.2020.05.067>.

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