



## CASE REPORT

# An atypical presentation of infective endocarditis

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### KEYWORDS

Bacterial  
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Embolism;  
Multiple organ failure

### PALAVRAS-CHAVE

Endocardite  
bacteriana;  
*Staphylococcus  
aureus*;  
Bloqueio  
aurículo-ventricular;  
Insuficiência  
cardíaca;  
Embolia;  
Disfunção  
multi-orgânica

**Abstract** Infective endocarditis is a well-known clinical entity. However, despite improved diagnostic techniques and advances in treatment options, left-sided native valve infective endocarditis remains a serious disease with high morbidity and mortality, especially in cases caused by *Staphylococcus aureus*. The clinical heterogeneity of infective endocarditis sometimes prevents rapid recognition, correct diagnosis and timely treatment, which are essential to reduce the morbidity and mortality associated with this disease.

We report the case of a 62-year-old man, admitted for atrial fibrillation with complete atrioventricular block, which was found to be the result of methicillin-resistant *S. aureus* mitral valve endocarditis, complicated by local extension of the infection, heart failure, systemic embolism and multiple organ failure.

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### Apresentação atípica de uma endocardite infecciosa

**Resumo** A endocardite infecciosa é uma entidade clínica profundamente estudada. Contudo, apesar da melhoria das técnicas de diagnóstico e dos avanços terapêuticos, a endocardite infecciosa de válvula nativa do coração esquerdo, continua a ser uma doença grave, com elevada morbidade e mortalidade, principalmente nos casos de infeção por *Staphylococcus aureus*. A sua heterogeneidade clínica, por vezes, dificulta o rápido reconhecimento, correto diagnóstico e tratamento atempado, elementos fundamentais para a redução da morbi-mortalidade associada a esta doença.

Apresenta-se o caso de um homem de 62 anos, admitido por fibrilhação auricular com bloqueio aurículo-ventricular completo, que se constatou ser resultado de uma endocardite da válvula mitral, por *St. aureus* metilino-resistente, complicada com extensão local da infeção, insuficiência cardíaca, embolização sistémica e disfunção multi-orgânica.

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## Introduction

Bacterial endocarditis is a complex disease, associated with significant morbidity and mortality.

In developed countries, *Staphylococcus aureus* is now the leading cause of left-sided infective endocarditis, and is usually characterized by an acute presentation, without the classic physical findings. Its course is frequently fulminant when it involves the mitral or aortic valve, with widespread metastatic infection, and death in 25–30% of cases. For this reason, many patients present with advanced disease and multiple complications.

We present the case of a 62-year-old man admitted for atrial fibrillation with complete atrioventricular block, which was found to be the result of methicillin-resistant *S. aureus* mitral valve endocarditis, complicated by local extension of the infection, heart failure, systemic embolism and multiple organ failure.

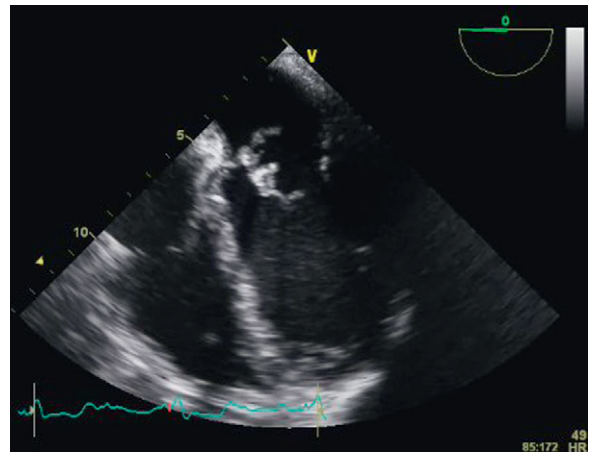
## Case report

A 62-year-old man presented to our hospital because of altered state of consciousness with profound asthenia for the previous two days. His medical history included hypertension, type 2 diabetes, obesity, hyperthyroidism, peptic ulcer disease and paroxysmal atrial fibrillation. He was taking amiodarone 200 mg bid, warfarin, an angiotensin-converting enzyme inhibitor and oral hypoglycemic agents.

Physical examination on presentation revealed marked prostration, mild polypnea, apyrexia, normal blood pressure and a bradyarrhythmic pulse of 30 bpm. Auscultation of heart and lungs revealed no major abnormalities. An electrocardiogram was performed and atrial fibrillation with complete atrioventricular block was detected. Significant laboratory results included normochromic normocytic anemia, relative neutrophilia, acute renal failure, mild hyperkalemia (5.3 mEq/l), and elevated BNP (827 pg/ml) and C-reactive protein (52 mg/l). The bradyarrhythmia was considered to be related to amiodarone and a temporary pacemaker was implanted, without apparent immediate complications and with progressive clinical improvement.

Around six weeks before admission the patient had been seen in the emergency department after a car accident; he had had minor lesions and was discharged on NSAIDs. Three weeks later, he was admitted to the surgical department due to a bleeding upper gastrointestinal ulcer treated effectively with endoscopic therapy. During this hospitalization he was diagnosed with hyperthyroidism; he also had phlebitis in his right arm and methicillin-sensitive *S. aureus* (MSSA) bacteremia. The patient was advised to discontinue amiodarone because of hyperthyroidism, but he continued to take the drug.

One day after admission, he presented with fever and leukocytosis with additional elevation of inflammatory markers, and remained dependent on pacemaker rhythm. Blood cultures were collected and ceftriaxone was initiated. The next day, multiple separate blood cultures were positive for Gram-positive clustered cocci (eventually identified as methicillin-resistant *S. aureus* [MRSA]), and vancomycin was added.



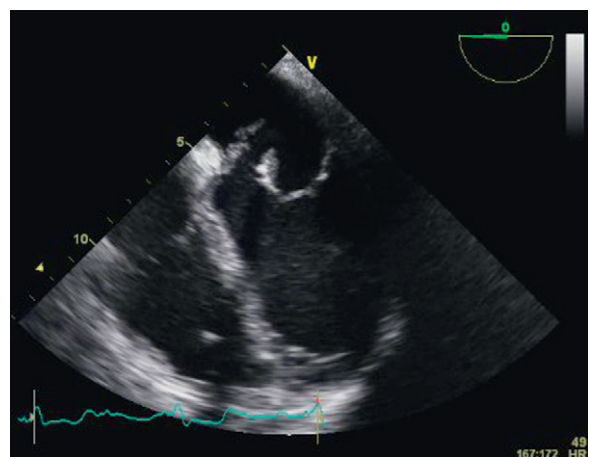
**Figure 1** Transesophageal echocardiography showing large vegetations on the anterior mitral valve leaflet.

On the fourth day, the site of pacemaker insertion, in the right femoral vein, presented a purulent drainage. As the patient remained pacemaker-dependent, the lead was removed and another was implanted on the left side.

Meanwhile, the patient presented an unfavorable evolution, with progressive sepsis, worsening renal function and refractory acute pulmonary edema. Invasive mechanical ventilation and renal replacement therapy were required and he was transferred to the intensive care unit.

Transesophageal echocardiography (TEE) showed large vegetations on the atrial face of the anterior leaflet of the mitral valve (Figure 1; Video 1). The anterior mitral valve leaflet was perforated (Figure 2), causing severe mitral regurgitation (Video 2). Vegetations were also seen in the septal tricuspid leaflet, adjacent to the mitral valve (Figures 3 and 4; Videos 3 and 4).

Since the major affected valve was on the left side and the echocardiographic findings were so pronounced within a few days after pacemaker insertion, the endocarditis was considered to have resulted from the bacteremia detected in the previous hospitalization, with primary involvement of the mitral valve and extension of the infectious process to the mitral-aortic junction and tricuspid valve, with damage



**Figure 2** Transesophageal echocardiography showing anterior mitral valve leaflet rupture.

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