

Case Report

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Febrile Atrioventricular Block Revealing a Trigone Abscess: A Misleading Presentation of Mitral Endocarditis

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ABSTRACT

Introduction: Infective Endocarditis (IE) is a life-threatening infection, often affecting damaged valves but occasionally occurring in patients without known cardiac history. Atypical presentations may delay diagnosis.

Observation: We present the case of a 68-year-old man with no known heart disease, admitted for respiratory symptoms. Initial work-up suggested pneumonia. Persistent fever and symptomatic bradycardia revealed a high-grade Atrioventricular Block (AVB). Echocardiography identified mitral valve vegetation. Transesophageal echocardiography confirmed an aorto-mitral trigonal abscess.

Discussion: Perivalvular abscesses, especially in the aorto-mitral region, are severe IE complications and frequently cause conduction disorders. AVB should prompt urgent evaluation with transesophageal echocardiography. Despite appropriate antibiotics and urgent surgery (mitral valve replacement, abscess drainage, pacing), the patient died from septic shock and multiorgan failure.

Conclusion: This case emphasizes the need for high suspicion of IE in atypical presentations. Early imaging, multidisciplinary management, and timely surgery are key to improving outcomes in complicated IE.

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Introduction

Infective Endocarditis (IE) is a serious infection of the endocardial structures, mainly the heart valves, and remains a major cause of morbidity and mortality in cardiology despite advances in diagnosis and treatment [1,2]. Its incidence is estimated at between 3 and 10 cases per 100,000 inhabitants per year, with a hospital mortality rate of up to 15–30%, depending on the series [3,4].

IE on native valves accounts for the majority of cases and can occur in patients with pre-existing heart disease as well as in those with no known cardiac history [5].

Perivalvular complications, particularly abscesses, occur in approximately 10–40% of IE cases and are associated with a poor prognosis [6]. Among these abscesses, those involving the aorto-mitral fibrous trigone represent a particularly dangerous location due to anatomical complexity and proximity to critical cardiac structures, including the electrical conduction system [7]. Extension of the infection to this region can lead to conduction disorders, particularly high-grade atrioventricular block (AVB), which is a major clinical warning sign and requires rapid, multidisciplinary management [8].

We present a case of infective endocarditis on a native mitral valve complicated by an abscess of the aorto-mitral fibrous trigone and a complete AVB, illustrating the diagnostic and therapeutic challenges associated with this severe complication.

Medical Observation

We report the case of a 68-year-old patient, a chronic smoker, type 2 diabetic, and hypertensive, with no known history of heart disease, who presented with respiratory symptoms of purulent bronchial syndrome that had been evolving for several days.

On admission, he had a fever of 38.5°C, NYHA stage III dyspnoea, and pulmonary auscultation revealed unilateral crackles. The chest X-ray showed a focus of parenchymal condensation, suggestive of pneumonia. Empirical antibiotic therapy was initiated.

In the absence of clinical improvement and with the onset of symptomatic bradycardia, an electrocardiogram was performed, demonstrating a high-grade Atrioventricular Block (AVB) (Figure 1). The patient was transferred to intensive care.

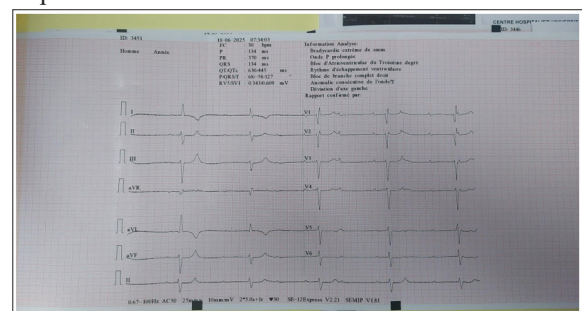


Figure 1: 12-lead ECG Showing High-Degree AV Block

On admission, the patient was in Acute Pulmonary Edema (APE) with a blood pressure of 90/60 mmHg and crackles at the lung apices. Transthoracic echocardiography revealed a mobile vegetation measuring 12×13 mm, located on the atrial side of the mitral leaflet (Figure 2). This vegetation caused partial mitral obstruction, with an increased transmitral gradient of 6 mmHg, as well as severe mitral regurgitation. There were no obvious signs of paravalvular leakage or abscess at this stage on TTE.



Figure 2: Parasternal Long-Axis Echocardiogram Image Showing Vegetation on the Atrial Side of the Mitral Valve

Blood tests showed a marked inflammatory response (CRP 178 mg/L, leukocytes 23,000 /mm³, predominantly neutrophils). Blood cultures were taken before initiating targeted antibiotic therapy. A transesophageal echocardiogram (TEE) was scheduled to assess the extent of perivalvular involvement and detect any complications, and it revealed a trigonal abscess (Figure 3).

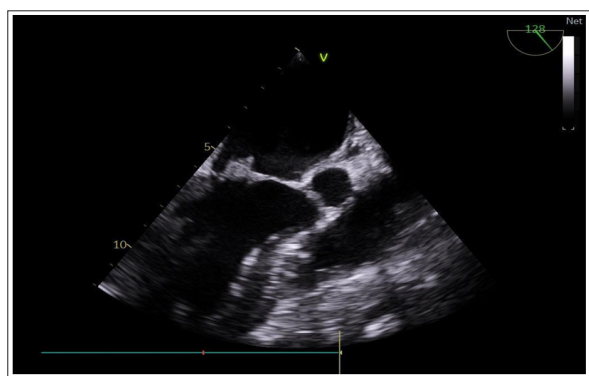


Figure 3: ME 3-Chamber View Showing an abscess of the Trigone as well as Vegetation

Targeted antibiotic therapy was continued for 4 weeks, with good tolerance and normalization of biological parameters. High-dose diuretics were used to control cardiac decompensation. The patient's clinical condition remained stable, with no recurrence of infection or signs of valvular dysfunction.

Surgical management was indicated (Figure 4). The patient underwent mitral valve replacement, drainage of the abscess, debridement of infected tissue, and epicardial pacing.

The postoperative course was unfavorable. The patient developed multiple organ failure with Disseminated Intravascular Coagulation (DIC) and died of septic shock.



Figure 4: Intraoperative Visualization of Mitral Valve Replacement with Abscess Debridement Via Sternotomy and Cardiopulmonary Bypass Assistance

Discussion

Infective Endocarditis (IE) on native valves remains a serious condition, the incidence of which is stable, but the clinical profile is evolving, increasingly affecting elderly, polymorbid patients, sometimes with no known heart disease [1]. It can occur even in the absence of prior heart disease, as our case highlights [1,2].

The initial clinical presentation can be misleading, as in our case, where the patient presented with respiratory symptoms, potentially delaying the diagnosis of IE. This mode of presentation, although non-specific, is described in approximately 10–20% of IE cases, particularly in mitro-aortic forms with pulmonary involvement due to septic embolism or adjacent inflammation [2].

This atypical form highlights the importance of maintaining a high level of vigilance in the face of any persistent febrile infection, particularly in patients with risk factors such as diabetes and smoking [5].

Perivalvular abscesses, particularly in the aorto-mitral fibrous trigone, are a severe manifestation of IE. In a series reported by Yeo et al., high-grade AVB was associated with perivalvular abscesses in 76% of cases [3]. This well-established pathogenic link makes it a critical warning sign, requiring emergency TEE.

Trigonal abscesses are often responsible for rhythm disorders, particularly atrioventricular block (AVB), as observed in our patient. The occurrence of a high-grade AVB is a clinical warning sign, suggesting deep extension of the infection and requiring rapid intervention [8].

Transoesophageal Echocardiography (TEE) remains the key examination for confirming the presence of a perivalvular abscess and assessing the extent of involvement, although transthoracic echocardiography (TTE) may detect vegetations [9]. In our case, TEE confirmed the precise location of the abscess, justifying the urgent surgical decision.

This complex anatomical location makes surgical management difficult, given its proximity to the electrical conduction system and adjacent valvular structures [6,7]. Treatment of IE complicated by abscess is based on prolonged antibiotic therapy combined with aggressive surgical management to eradicate the infection and restore valvular function. Mitral valve replacement with drainage of the abscess and debridement of infected tissue is the recommended strategy for trigonal abscesses, although this surgery is technically demanding [10]. A permanent pacemaker may be required in cases of persistent AVB, indicating irreversible

destruction of conduction tissue, with a direct impact on long-term prognosis and an increased risk of rhythm dependence and device-related complications [9].

The prognosis of these patients depends on the speed of diagnosis, the severity of complications, and the quality of multidisciplinary management, despite the high mortality reported in the literature [4].

Conclusion

Infective endocarditis of a native valve may occur in the absence of pre-existing heart disease and initially present with non-specific symptoms, delaying diagnosis. Our case illustrates a severe form of mitral endocarditis, complicated by an abscess of the aorto-mitral fibrous trigone and complete atrioventricular block, requiring urgent surgical management.

This case highlights the importance of early multidisciplinary management, including diagnosis through advanced imaging, appropriate antibiotic therapy, and targeted surgery. Long-term follow-up, including monitoring of the prosthetic valve and pacemaker, is essential to prevent complications and improve prognosis.

Disclosure of any Conflict of Interest

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