

Case report

Suspected Lupus Myocarditis Revealed by Global Heart Failure: A Case Report

ABSTRACT

Context

Myocarditis is a rare but potentially life-threatening complication in patients with systemic lupus erythematosus (SLE). It involves inflammation of the cardiac muscle, which can lead to heart failure, arrhythmias, and myocardial dysfunction. Early recognition and appropriate management are crucial for improving outcomes.

Introduction

SLE is a systemic autoimmune disorder that can affect multiple organs, including the heart. While pericarditis is the most common cardiac manifestation, lupus myocarditis remains rare but poses significant risks. Its clinical presentation can overlap with other causes of heart failure, making diagnosis challenging. Imaging and biomarker evaluation are essential in ruling out other potential causes of cardiomyopathy.

Case Presentation

We report the case of a 51-year-old female with a 10-year history of SLE who presented with progressive dyspnea, peripheral edema, and global heart failure. Transthoracic echocardiography revealed severe hypokinetic cardiomyopathy with a left ventricular ejection fraction of 15%. Electrocardiogram (ECG) showed Q waves in the anteroseptal region and a left anterior fascicular block. Coronary angiography excluded significant obstructive coronary disease, and cardiac magnetic resonance imaging (MRI) suggested myocarditis. Lupus myocarditis was suspected based on the clinical findings and the exclusion of other causes.

Conclusion

Lupus myocarditis is a rare but important consideration in SLE patients presenting with heart failure. Early diagnosis, using noninvasive imaging and clinical exclusion of other causes, is essential for initiating timely treatment. Aggressive immunosuppressive therapy can stabilize the patient's condition, although residual cardiac dysfunction may persist. Further research is needed to refine diagnostic criteria and optimize therapeutic approaches for this condition.

Keywords: Suspected Lupus Myocarditis, Global Heart Failure, A Case Report

1. INTRODUCTION

Systemic lupus erythematosus (SLE) is a systemic autoimmune disease that can affect various organs, including the heart. Cardiac manifestations of SLE include pericarditis, myocarditis, endocarditis, and coronary artery disease. Lupus myocarditis is rare but can lead to severe heart failure, arrhythmias, and cardiac dysfunction. This case report highlights the diagnostic and therapeutic challenges of lupus myocarditis in a patient with severe hypokinetic cardiomyopathy.

2. CASE PRESENTATION

A 51-year-old female, with a 10-year history of systemic lupus erythematosus, presented to the emergency department with progressive dyspnea and peripheral edema. Clinical examination revealed global congestive heart failure with bilateral pulmonary crackles, tachycardia, and a blood pressure of 100/70 mmHg. The ECG showed anteroseptal Q waves and a left anterior fascicular block (Figure 1).

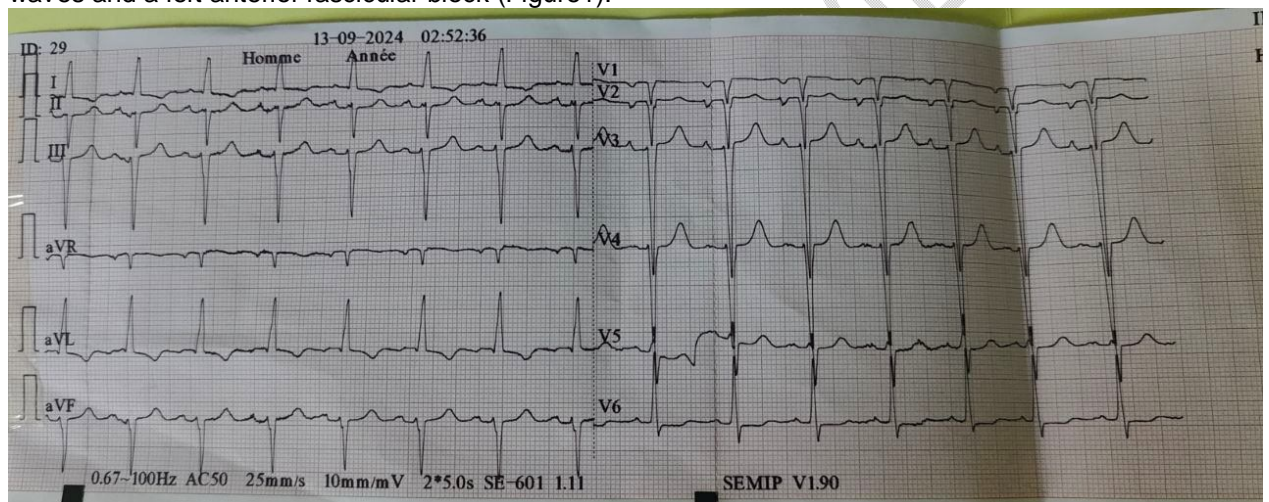


Figure 1: The ECG showed anteroseptal Q waves and a left anterior fascicular block.

Transthoracic echocardiography demonstrated hypokinetic cardiomyopathy with a left ventricular ejection fraction (LVEF) of 15%, indicating severe systolic dysfunction. Coronary angiography ruled out significant obstructive coronary artery disease.

Cardiac biomarkers were elevated, with troponin levels at 1600, suggesting active myocardial injury. Viral serologies commonly associated with myocarditis were negative, and autoimmune tests showed no new abnormalities beyond those related to SLE. Cardiac MRI revealed findings consistent with myocarditis, including non-systematized late gadolinium enhancement. While endomyocardial biopsy remains the gold standard for diagnosing myocarditis, it was not performed due to the associated risks in this patient.

3. DISCUSSION

Lupus myocarditis is a rare but serious complication of SLE, often presenting with nonspecific signs and symptoms. The diagnosis is typically based on a combination of clinical manifestations, advanced cardiac imaging, and exclusion of other causes of cardiac dysfunction. In this patient, the absence of other apparent etiologies for heart failure, along

with cardiac MRI findings of myocardial inflammation, supported the diagnosis of probable lupus myocarditis (1).

Cardiac manifestations in SLE are variable, ranging from pericarditis, the most common, to rarer conditions such as myocarditis and valvular disease . The pathogenesis of lupus myocarditis is multifactorial, involving immune complex deposition and inflammation of the myocardium(2.3) .

Delayed diagnosis can lead to irreversible myocardial damage and poor outcomes. A high index of suspicion is critical, especially when routine investigations, such as coronary angiography, fail to reveal an alternative cause of heart failure(4.5).

Cardiac MRI plays a pivotal role in diagnosing myocarditis, as it can noninvasively detect inflammation and myocardial injury through the late gadolinium enhancement technique. While endomyocardial biopsy remains the definitive diagnostic tool, it is often not feasible due to its invasive nature and potential complications. In this case, the combination of imaging and clinical exclusion of other causes led to the diagnosis(6.7) .

The treatment of lupus myocarditis typically involves high-dose corticosteroids and immunosuppressive agents to control the underlying autoimmune inflammation(8).

In this patient, treatment with high-dose corticosteroids followed by immunosuppression with mycophenolate mofetil resulted in moderate clinical improvement. Diuretics were used to manage fluid overload, and positive inotropic agents were given to support cardiac function. Despite aggressive treatment, the patient's LVEF remained severely compromised at 20%, highlighting the chronic impact of lupus myocarditis on cardiac function. This case underscores the need for timely intervention to prevent further myocardial damage(9.10) .

4. CONCLUSION

Lupus myocarditis is a rare but important cause of heart failure in patients with systemic lupus erythematosus. Rapid and accurate diagnosis is essential to initiate appropriate treatment and potentially improve outcomes. In this case, a high clinical suspicion, supported by noninvasive investigations and aggressive treatment, allowed stabilization of the patient despite severely compromised residual cardiac function. Further studies are needed to better define the diagnostic criteria and optimal therapeutic approaches for lupus myocarditis.

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