Journal of Case Reports and Scientific Images

E-ISSN: 2708-0064
P-ISSN: 2708-0056
JCRSI 2025; 7(1): 25-27
www.allcasereports.com
Received: 28-11-2024
Accepted: 02-01-2025

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Case report: Lupus myocarditis in a 34-year-old female

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DOI: https://doi.org/10.22271/27080056.2025.v7.i1a.106

Abstract
Systemic lupus erythematosus (SLE) is a chronic autoimmune disease that can affect multiple organs, including the heart. Cardiac involvement in SLE is common, with myocarditis being a rare but significant complication that can present with nonspecific symptoms. This case report describes a 34-year-old female diagnosed with lupus myocarditis after presenting with heart failure symptoms, including fever, dyspnea, and lower limb edema. Diagnostic workup, including elevated cardiac troponin, electrocardiographic abnormalities, and cardiac MRI findings, confirmed myocarditis. The patient showed significant clinical improvement with corticosteroids, immunosuppressive agents, and supportive care. This case highlights the importance of early recognition and aggressive treatment to improve outcomes in lupus myocarditis.

Keywords: Systemic lupus erythematosus, lupus myocarditis, autoimmune disease

Introduction
Systemic lupus erythematosus (SLE) is a chronic, multisystem autoimmune disorder characterized by widespread inflammation and tissue damage. Cardiac involvement is observed in up to 50% of SLE cases, manifesting as pericardial disease, myocardial dysfunction, valvular abnormalities, conduction system disturbances, or accelerated atherosclerosis [1, 2].

Myocarditis, though an uncommon manifestation of SLE, is clinically significant, occurring in approximately 9% of patients. Notably, it can serve as the initial presentation of SLE in 28% of individuals with lupus myocarditis [3]. Patients often present with nonspecific symptoms such as fever, malaise, fatigue, chest pain, palpitations, dyspnea, orthopnea, presyncope, or syncope. The chest pain associated with acute myocarditis may mimic pericarditis (due to concurrent myopericarditis in at least 35% of cases) or, in severe instances, resemble the pain of acute coronary syndrome [4].

This report presents the case of a 34-year-old female who presented with heart failure symptoms and was subsequently diagnosed with lupus myocarditis. Her condition improved significantly following treatment with corticosteroids, immunosuppressive agents, and supportive measures.

Case Presentation
Clinical History
A 34-year-old female with a history of well-controlled primary hypertension (managed with oral bisoprolol and hydrochlorothiazide) presented to the emergency department with complaints of fever, dyspnea, and progressive lower limb edema. She denied cough, sputum production, hemoptysis, orthopnea, paroxysmal nocturnal dyspnea (PND), palpitations, syncope, or chest pain. There were no associated gastrointestinal or genitourinary symptoms, nor any reports of night sweats, anorexia, or unintentional weight loss.

Physical Examination
On examination, the patient appeared acutely ill and was in significant respiratory distress. Vital signs revealed tachypnea (respiratory rate: 30 breaths per minute), pyrexia (39.0°C), and hypoxemia (oxygen saturation: 86% on room air). Cardiovascular and pulmonary examinations were unremarkable, except for bilateral pitting edema of the lower extremities.

Diagnostic Worku

Initial Investigations: Elevated cardiac troponin levels (96 ng/L) and electrocardiographic abnormalities, including inverted T waves in leads II, III, V2, and V4-6 (Figure 1)

Fig 1: Electrocardiogram showing inverted T waves in leads II, III, V2, and V4-6, suggestive of myocardial injury

Table 1: Laboratory

Test	Result	Normal Range	Interpretation
White Blood Cell Count (WBC)	9.7 ($10^3/\mu L$)	4.0–11.0 ($10^3/\mu L$)	Within normal range
Hemoglobin (Hb)	8.1 g/dL	12.0–16.0 g/dL (F), 13.5–17.5 g/dL (M)	Low
C-reactive Protein (CRP)	55.20 mg/L	<10 mg/L	Elevated
Antinuclear Antibodies (ANA)	436 IU/mL	<20 IU/mL	Elevated
Complement C3	0.57 g/L	0.90–1.80 g/L	Low
Complement C4	0.11 g/L	0.10–0.40 g/L	Low
Anti-Smith Antibodies	>7 U/mL	Negative (<7 U/mL)	Positive
Anti-SSA Antibodies	>200 U/mL	Negative (<20 U/mL)	Positive
Anti-SSB Antibodies	7 U/mL	Negative (<20 U/mL)	Positive

Imaging

- **Coronary angiography:** Normal, ruling out coronary artery disease.
- **Transthoracic echocardiogram:** Left ventricular ejection fraction (LVEF) of 55-60%, moderate mitral regurgitation (MR), bicuspid aortic valve with moderate aortic regurgitation (AR) and stenosis, and mild tricuspid regurgitation (TR)

Cardiac MRI

Impression

There is hypokinesia of the mid and to a lesser extent apical inferolateral myocardium with myocardial edema and transmural delayed gadolinium enhancement. The findings cope with the clinical concern of acute myocarditits, with areas of inflammatory necrosis. Yet, the transmural pattern of enhancement with involvement of the subendocardial layer and the presence of linear hypontense subendocardial rim suggest the presence of ischemic element, microthrombi and microvascular occlusion. As shown in (Figure 2).

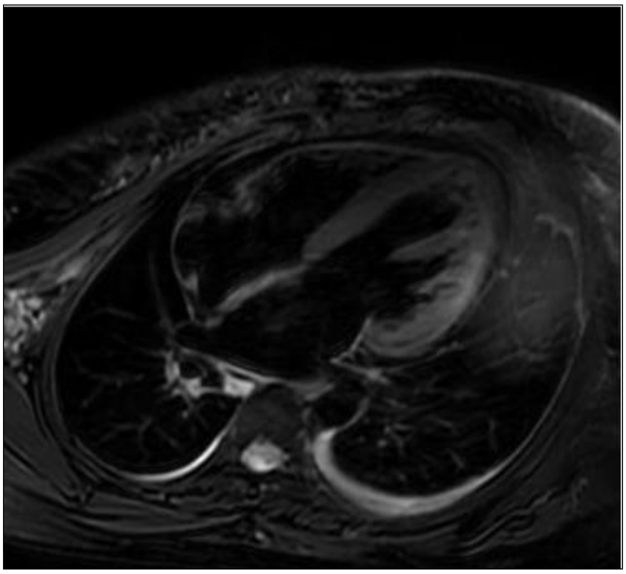

Fig 2:

Renal Biopsy: Membranous glomerulopathy consistent with immune- complex-mediated nephritis and plasma cell-predominant interstitial inflammation.

Management

After excluding acute coronary syndrome and considering the abnormal laboratory findings suggestive of an autoimmune disorder, the patient was initiated on pulse steroid therapy, which resulted in significant clinical and biochemical improvement. Maintenance therapy included mycophenolate mofetil (MMF) and hydroxychloroquine.

Discussion

Systemic lupus erythematosus (SLE) is a heterogeneous autoimmune disease with a broad spectrum of clinical manifestations, ranging from mild mucocutaneous involvement to severe multiorgan and central nervous system disease. The diagnosis of SLE remains challenging, necessitating the use of established classification criteria. The American College of Rheumatology (ACR) criteria, first introduced in 1971 and subsequently revised in 1982 and 1997, were further refined by the Systemic Lupus International Collaborating Clinics (SLICC) criteria. In 2019, the European League Against Rheumatism (EULAR) and ACR jointly proposed updated classification criteria, which offer improved sensitivity while maintaining specificity, though their clinical applicability continues to be debated [5].

Lupus myocarditis (LM) is a rare but life-threatening complication of SLE, with a reported mortality rate of up to 20% [6, 7]. There is no definitive diagnostic test for LM; the diagnosis is primarily clinical, supported by evidence of myocardial injury on biomarker testing and cardiac imaging [6]. In this case, the diagnosis of SLE was confirmed based on elevated ANA, anti-Smith antibodies, hypocomplementemia, and renal biopsy findings consistent with membranous glomerulopathy. Myocarditis was diagnosed based on cardiac MRI findings, elevated troponin levels, and the exclusion of coronary artery disease via angiography.

The patient was initially treated with pulse corticosteroids, followed by maintenance therapy with mycophenolate mofetil (MMF) and hydroxychloroquine. While there are no randomized controlled trials guiding the treatment of lupus myocarditis, expert consensus recommends the use of systemic glucocorticoids, intravenous cyclophosphamide, or mycophenolate mofetil, often in combination with hydroxychloroquine, as first-line therapy [8].

Conclusion

Lupus myocarditis, though a rare manifestation of systemic lupus erythematosus (SLE), represents a potentially life-threatening complication that demands prompt recognition and aggressive management. This case highlights the diagnostic challenges associated with lupus myocarditis, particularly when it serves as the initial presentation of SLE. The integration of clinical findings, biomarker elevation, advanced cardiac imaging, and histopathological evidence was instrumental in establishing the diagnosis in this patient. Early initiation of immunosuppressive therapy, including pulse corticosteroids and mycophenolate mofetil, led to significant clinical improvement, underscoring the importance of timely intervention in altering the disease course and reducing morbidity and mortality. This case reinforces the need for heightened clinical suspicion of lupus myocarditis in patients with unexplained myocardial dysfunction, particularly in the context of autoimmune disease. Multidisciplinary collaboration and adherence to evidence-based treatment guidelines remain pivotal in optimizing outcomes for these patients.

Conflict of Interest
Not available

Financial Support
Not available

References

1. Systemic lupus erythematosus (SLE) is a multisystem autoimmune disease with cardiac involvement in up to 50% of cases.
2. National Center for Biotechnology Information. Systemic lupus erythematosus. [Internet]. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9358056/
3. National Center for Biotechnology Information. Systemic lupus erythematosus and cardiovascular disease. [Internet]. Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10280490/
4. National Center for Biotechnology Information. Lupus - Pathophysiology. [Internet]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK441847/
5. National Center for Biotechnology Information. Lupus Myocarditis. [Internet]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK535405/
6. Tselios K, Gladman DD, Su J, Urowitz MB. Lupus myocarditis: review of current diagnostic modalities and their application in clinical practice. [Internet]. Available from: https://www.researchgate.net/publication/362189138_Lupus_myocarditis_review_of_current_diagnostic_modalities_and_their_application_in_clinical_practice
7. Tanwani J, Tselios K, Gladman DD, Su J, Urowitz MB. Lupus myocarditis: a single center experience and a comparative analysis of observational cohort studies. Lupus. 2018;27(12):1296–302.
8. Muangchan C, van Vollenhoven RF, Bernatsky SR, *et al*. Treatment Algorithms in Systemic Lupus Erythematosus. Arthritis Care Res (Hoboken). 2015;67(9):1237.
9. Biomed Central. Medical Case Reports. [Internet]. Available from: https://jmedicalcasereports.biomedcentral.com/articles/10.1186/s13256-019-2242-1

How to Cite This Article
Al Sulaiman ZT, Alreefi F, Alrufayi AH, Almossabeh MJ, Alkhalifah S. Case report: Lupus myocarditis in a 34-year-old female. Journal of Case Reports and Scientific Images. 2025; 7(1): 25-27.