

Case Report

Lupus pericardial effusion successfully treated with methylprednisolone pulse

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Abstract

Pericardial effusion is a rare complication of SLE-related serositis (1). We are presenting a case of lupus pericardial effusion that was successfully managed with methylprednisolone pulse therapy. The patient, a 22-year-old diagnosed with SLE, presented with symptoms and signs suggestive of pericarditis. Transthoracic echocardiography showed mild pericardial effusion. Investigations, including elevated ESR and C-reactive protein, were high with normal procalcitonin, were indicative of SLE-related serositis. TSH was within the normal range and tuberculosis screening was negative. The patient was treated with an intravenous methylprednisolone pulse. Following the treatment, the patient's pericardial effusion resolved, and inflammatory markers returned to the normal range. There are various treatment options for acute pericarditis in SLE, and methylprednisolone pulse therapy can be used in patients with associated pericardial effusion.

Key Words

SLE, Pericarditis, pericardial effusion

Introduction

Pericardial effusion in SLE is associated with SLE-related serositis. If left untreated, it can lead to high morbidity. We are presenting a case of lupus pericardial effusion that was successfully managed with methylprednisolone pulse therapy.

Case

A 22-year-old female patient with a history of systemic lupus erythematosus (SLE) on hydroxychloroquine

200mg presented with fever and chest pain for one week. The chest pain was confined to the anterior chest and increased with inspiration but was reduced by leaning forward. On admission, she was dyspneic and febrile but had no malar rash or oral ulcers. Respiratory examination showed a respiratory rate of 24, oxygen saturation of 96% in room air, and normal breath sounds without added sounds. Her blood pressure was 100/70 and her pulse rate was 130, with good volume and regularity. Heart sounds were normal, with no murmurs or pericardial friction rub. Other clinical examinations were unremarkable.

A complete blood count showed Lymphopenia with absolute lymphocyte count was 824 (WBC- $10.18 \times 10^3/\mu\text{L}$, N-86.5%, L-8.1%), anemia (Hb-9.4g/dL, MCV-83fL, MCH-25.1pg), and normal platelet count (PLT- $368 \times 10^3/\mu\text{L}$). ESR (108mm/1st hour) and CRP (106.2 mg/L) were elevated, while serum procalcitonin (0.05) was within the normal range. A 12-lead ECG showed sinus tachycardia. Chest X-ray showed an increased cardiothoracic ratio with a mildly globular-shaped heart but no significant carinal widening. An initial transthoracic echocardiogram showed good left ventricular function with mild pericardial effusion. Blood and urine cultures were negative, as were Trop I and D-dimer tests. Sputum for acid-fast bacilli was negative and Mantoux test was less than 5mm. Serum complement levels (C-3: 126 mg/dL [83-177], C-4: 16 mg/dL [12-36]) were within the normal range, as were VDRL and retroviral studies. Serum TSH was also within the normal range.

The patient was treated for lupus-induced pericardial effusion with intravenous methylprednisolone 1g daily for three days, followed by prednisolone 50mg (1mg/

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kg) daily. Her hydroxychloroquine dose was increased to 300mg orally daily and methotrexate 10mg weekly was added. Following the methylprednisolone pulse, her fever subsided, her hemodynamic parameters improved, and her inflammatory markers returned to normal (ESR-28mm/1st hour, CRP-23.5mg/L). A repeat echocardiogram showed no pericardial effusion.



Figure 1: Chest X-ray shows an increased cardiothoracic ratio with a mild globular-shaped heart but no significant carinal widening. This appearance is suggestive of the pericardial effusion

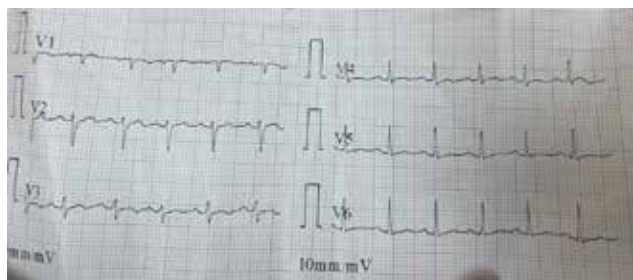


Figure 2 ECG : Limb leads of this patient show sinus tachycardia.

Discussion

Pericardial effusion in SLE is associated with SLE-related serositis (1). If left untreated, it can lead to high morbidity (2). Pericardial effusion can be an initial presentation of SLE and is included in the diagnostic criteria for SLE (3). In this case, a 22-year-old patient diagnosed with systemic lupus erythematosus presented with acute mild pericardial effusion. In tuberculosis-endemic areas, tuberculosis must be excluded as a cause of pericarditis (1). In this case, tuberculosis-related pericardial effusion was ruled out by negative procalcitonin and Mantoux tests. High C-reactive protein levels with normal procalcitonin levels support

the diagnosis of lupus-related serositis. Although pericardial fluid analysis is essential for a definitive diagnosis of pericardial effusion, it was not attempted in this case due to the lack of diagnostic uncertainty and the mild nature of the effusion. Various treatment options for lupus-related pericardial effusion include NSAIDs, colchicine, and systemic steroids (4). Intravenous methylprednisolone therapy is reserved for patients with moderate to severe clinical presentation in SLE (5). In this case, the patient was treated with an intravenous methylprednisolone pulse, which resulted in the complete resolution of the pericardial effusion.

Conclusion

Pericardial effusion is a rare manifestation of SLE-related serositis. If left untreated, it can be associated with high mortality. There are various treatment options for lupus pericardial effusion, and methylprednisolone pulse therapy is reserved for moderate to severe presentations.

Consent

Written consent was obtained from the patient for publication of this study.

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