



Case report

An Indonesian pregnant woman with systemic lupus erythematosus and cardiac tamponade: A case report

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ABSTRACT

Background: Systemic lupus erythematosus (SLE) during pregnancy with cardiac tamponade is a rare case.**Case presentation:** A 33-year-old pregnant woman complained of worsening shortness of breath, hair loss, and joint pain. Laboratory investigation revealed the poor condition of the patient so therapeutic abortion was recommended. Transthoracic echocardiography confirmed cardiac tamponade and pericardiocentesis was performed. The ANA test showed a flare SLE and she was given immunosuppressant therapy. Repeat echocardiography demonstrated minimal pericardial effusion. The patient refused cyclophosphamide. Follow-up echocardiography evaluation at fifth-month revealed minimal pericardial effusion. However, patient refused to be hospitalized.**Discussion:** A combination of pericardiocentesis and immunosuppressant therapy is an effective strategy to treat cardiac tamponade in pregnancy with SLE.**Conclusion:** Immunosuppressants and pericardiocentesis followed by cyclophosphamide are the cornerstones of management of SLE and cardiac tamponade in pregnant patients.

1. Introduction

Systemic lupus erythematosus (SLE) is a disease that appears at reproductive age, with the potential to cause impaired physical appearance, morbidity, and mortality [1]. Pregnancy affects the mother's immune system in various ways to ensure the survival of the baby. Most patients with SLE will experience worsening during pregnancy. Patients may experience flare-ups during pregnancy and have a higher incidence of pregnancy-related complications. Many studies agree that patients with active disease in the 6 months prior to conception are at high risk for flares during pregnancy [2].

Pericarditis, with or without effusion, is the most common cardiac manifestation of SLE, occurring in more than 50% of patients. It is usually mild and asymptomatic and is frequently detected on echocardiography for other indications. Pericarditis is common in the setting of active SLE in various organ systems. Although rare, pericarditis can lead to severe effusion and cardiac tamponade [3]. Based on the description above, we are reporting case of an Indonesian pregnant woman with SLE and cardiac tamponade. The case is reported in line with the SCARE 2020 guidelines [4].

2. Case presentation

A 33-year-old pregnant woman complained of shortness of breath for 4 days with swollen legs. The patient also complained of hair loss and joint pain for 1 month. The patient had a history of hypertension that was discovered 4 days before going to the hospital. Vital sign results obtained blood pressure = 150/100 mmHg, pulse rate = 105 ×/min, respiratory rate = 28 ×/min, and body temperature = 36.7 °C. Physical examination revealed dyspnea, increased jugular venous pressure, respiratory muscle retraction, crackling lung breath sounds, distant heart sounds, and lower extremity edema. The patient has an 11-year-old child and is currently in her third pregnancy. The patient's current gestational age was 22–23 weeks and the patient had a history of hypertension. 2 years ago, the patient had an abortion at 8 weeks gestation (second pregnancy).

Laboratory examination showed hemoglobin (9.4 mg/dL), white blood cells (11,400/μL), lymphocytes (10.3%), and proteinuria (+3). X-ray showed cardiomegaly, left pleural effusion, and a reticular pattern on the right lung (Fig. 1). The electrocardiogram showed a sinus rhythm, 90 ×/min with a normal axis, low voltage in all leads (Fig. 2). The

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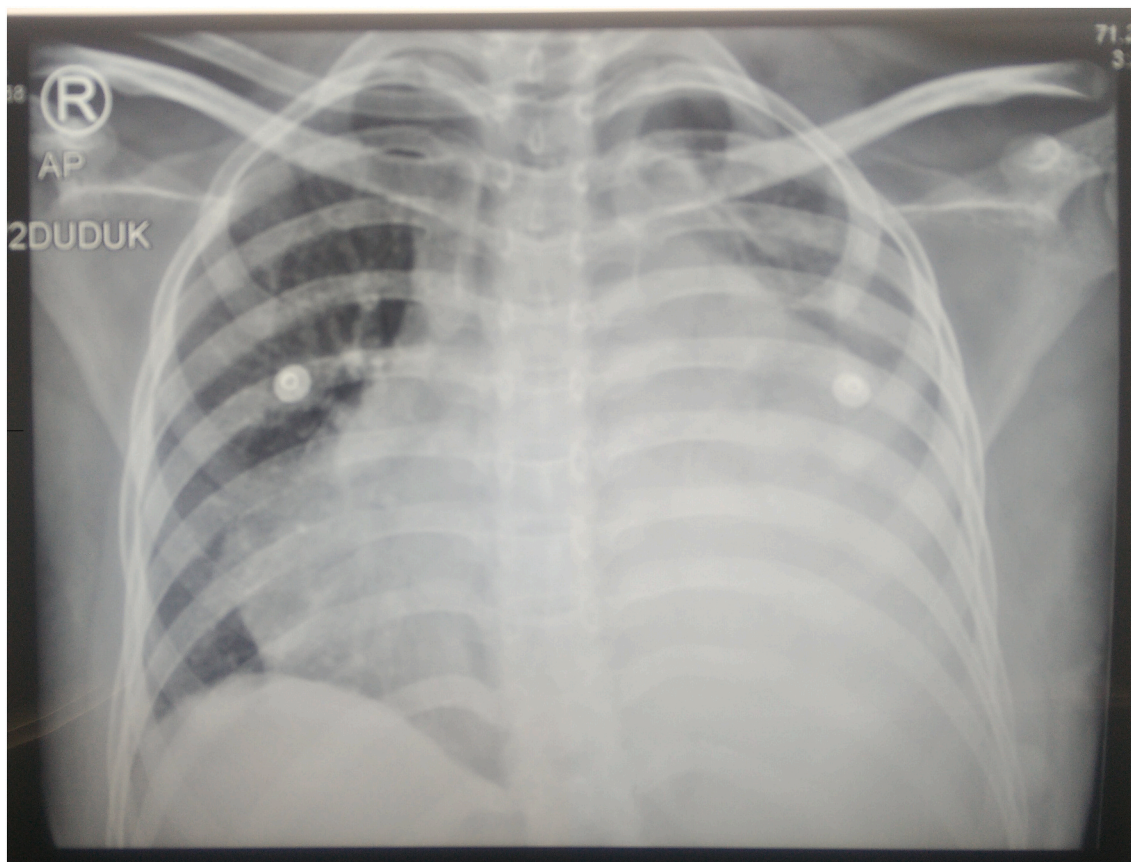


Fig. 1. Chest X-ray anterior posterior.

patient agrees to the therapeutic abortion recommended. The results of echocardiography showed several conclusions including normal left ventricular (LV) systolic function (ejection fraction by Teich of 61%), LV diastolic function abnormal relaxation, segmental LV normokinetic, concentric left ventricular hypertrophy; decreased right ventricle (RV) systolic function (tricuspid annular plane systolic excursion of 1.4 cm); and massive pericardial effusion on the left lateral 2.8 cm, anterior 2.3 cm moderate on the right lateral 1.2 cm, inferior 1.2 cm, and right atrium-right ventricle collapse (Fig. 3). The patient was diagnosed with cardiac tamponade.

Management of cardiac tamponade was pericardiocentesis, which was based on the 2015 ESC Guidelines [5]. Pericardiocentesis was performed under ultrasound guidance using local anesthesia [6]. The fluid volume on the first day was 1300 cc/24 h, on the second day of 288 cc/24 h, on the third day of 14 cc/24 h, and on the four days of 11 cc/24 h. Analysis of fluid were antinuclear antibodies (ANA) test = 107.92 AU/mL, C3 = 25 mg/dL, and C4 = 19 mg/dL, indicating SLE based on the European League Against Rheumatism (EULAR) and the American College of Rheumatology (ACR) [7]. In addition, the patient was assessed on the lupus activity index in pregnancy (LAI-P) scale with a score of 1.67 (exacerbation) [8]. In early hospitalization, the patient-derived 750 mg methylprednisolone for 3 days, which was followed by maintaining methylprednisolone at 1 mg/kg/day. On the 15th day, the shortness of breath was significantly reduced and based on the echocardiography, there was minimal pericardial effusion on the apex. The patient improved and was continued for outpatient treatment.

On an outpatient basis, the patient refused to use cyclophosphamide.

In the fifth month after initial treatment, the patient represented with worsening cardiac tamponade. However, she refused hospital admission. The patient remained outpatient and was given methylprednisolone of 3×16 mg/day, mycophenolate mofetil of 2×360 mg/day, lansoprazole of 1×30 mg/day, and calcium lactate of 1×500 mg/day.

3. Discussion

Patients with SLE often experience disease exacerbations (flares) with varying severity [9]. In pregnant SLE patients, about 25% reported having preeclampsia [10,11] and a study in the USA reported a similar finding as around 13–35% of SLE pregnant patients had preeclampsia [12]. The conditions of preeclampsia in pregnancy with SLE are very difficult to distinguish because they occur at the same time [11,13]. During flare conditions in pregnancy with SLE, pericarditis is the most common, because based on a study, as many as 62% of SLE patients had pericarditis [14].

Management of pericarditis is pericardiocentesis, which is followed by the process of finding the cause of the condition to be treated [5]. Meanwhile, the patient's SLE was treated according to the recommendations including immunosuppressant therapy (methylprednisolone) intravenously (IV). Pulse dose corticosteroids 500–1000 mg IV per day is given for 3–5 days in severe disease activity for faster disease control. Cyclophosphamide is given 500 mg every 2 weeks, 6 doses, or 500–1000 mg/m² monthly for 6 months, while cyclophosphamide is given in severe lupus [15,16].

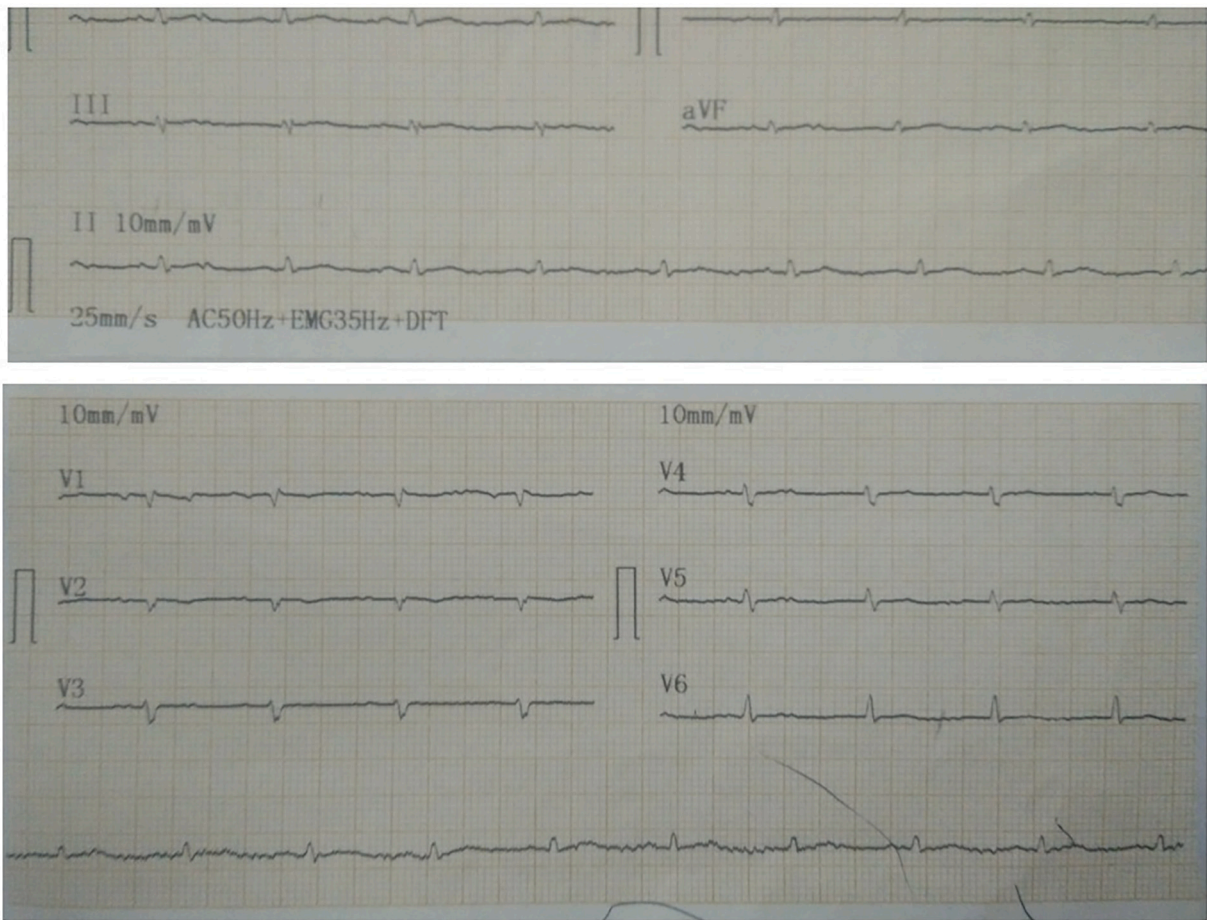


Fig. 2. Electrocardiogram.

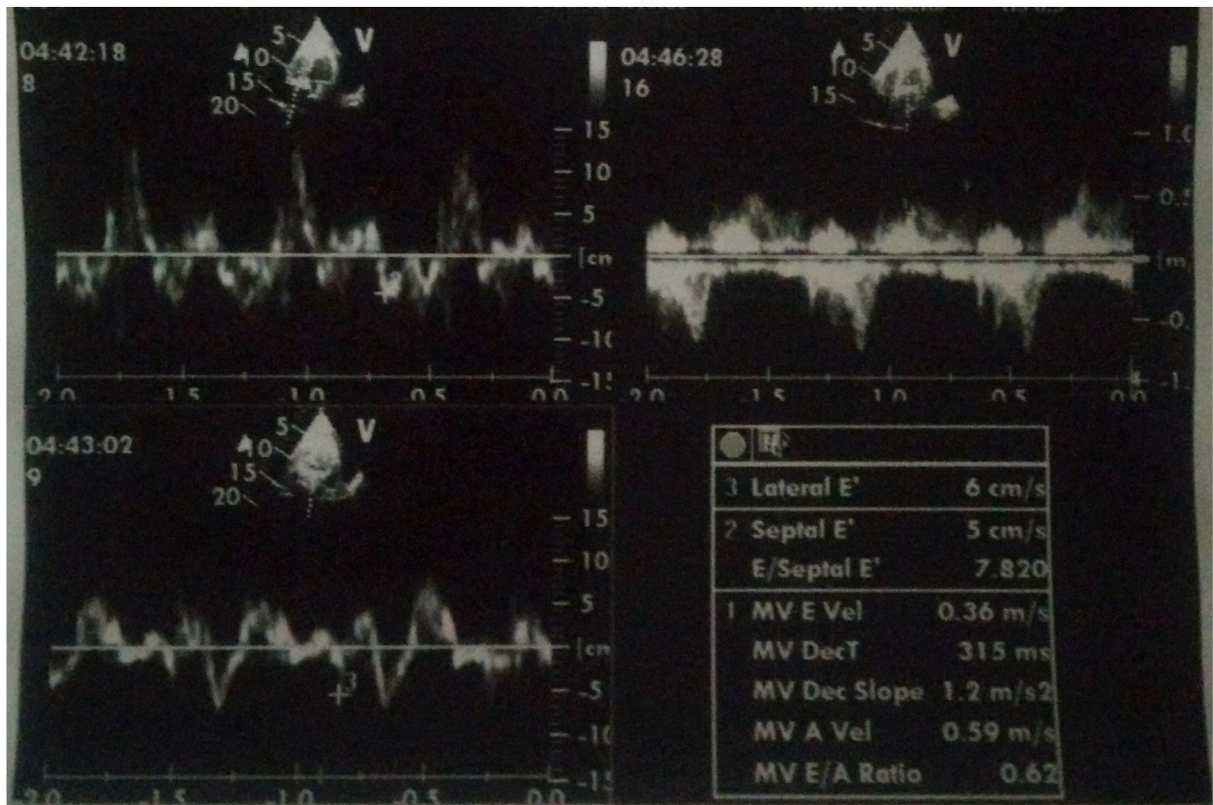


Fig. 3. Echocardiography of the patient on the first day of hospital admission.

4. Conclusion

Cardiac tamponade is a common feature of flares in SLE afflicted pregnant patients. Pericardiocentesis followed by treatment with immunosuppressant therapy is the mainstay of management of this condition.

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Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Guarantor

Awalia is the person in charge of the publication of our manuscript.

Credit authorship contribution statement

All authors contributed toward data analysis, drafting, and revising the paper, gave final approval of the version to be published, and agree to be accountable for all aspects of the work.

Declaration of competing interest

Resa Felani and Awalia declare they have no conflict of interest.

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