

## Challenging Case of Systemic Lupus Erythematosus in a Young Woman

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### KEYWORDS

Systemic Lupus Erythematosus, chronic autoimmune disease, fatigue, joint pain, skin rashes, and fever.

### ABSTRACT

This abstract is devoted to the description of a rather complicated clinical case of a 28-year-old woman with systemic lupus erythematosus (SLE). The patient came to our attention with become-fatigue, arthralgia, and intermittent low-grade fever without much improvement for several months. Blood tests appeared to be abnormal and showed antinuclear antibodies (ANA), anti-double-stranded DNA (anti-dsDNA) antibodies and low complement level indicative of SLE. However, hallmarks in diagnostic utility was interfered by the presence of overlapping clinical features with other autoimmune and inflammatory diseases; this led to delayed detection of definitive diagnosis.

Additional clinical assessment including renal biopsy revealed lupus nephritis and fueled clinical management challenges. Management is a combination of rheumatoid, nephrological and immunological care with the major treatment strategy being immunosuppression to manage disease activity and avoid organ dysfunction. In the beginning, diagnosis and management of the disease was a little problematic but the patient eventually had favorable response to corticosteroids and cyclophosphamide; his renal function improved and all his systemic symptoms regressed.

This case re-emphasises the need for repeated clinical examination, initial and follow up laboratory evaluation and histological confirmation, in making therapeutic management of patients with autoimmune disorders such as SLE. Hypothesis: Because L(n) [lupus nephritis] and SLE [systemic lupus erythematosus] have many potential late effects if not diagnosed early and treated appropriately, multifaceted approach is necessary.

### 1. Introduction

SLE is a complex immune system illness with multiorgan manifestations of clinical presentation that may manifest symptoms from simple arthralgia and skin lesion to organ dysfunction. This paper presents a clinically representative case of SLE in a 28-year-old woman which may be diagnostic and management dilemma to many practitioners. SLE primarily involves women of childbearing age around the fourth decade, and has got broad clinical spectrum that closely resembles other autoimmune disorders leading to diagnostic challenges in many cases (1).

In the beginning stages of the disease, the patient complained of general fatigue, arthralgias, and even low-grade temperatures that increased over some months. Serological examinations further confirmed increased titer of ANA and anti ds DNA and decreased complement level that is related to SLE criteria (1). Though, the diagnostic process was interfered by clinical similarities of the RA with the other connective tissue disorders, which caused further delay in achieving the final diagnosis and starting effective treatment.

Clinical assessment particularly a renal biopsy finalized the diagnosis of lupus nephritis indicating that patient with SLE require a Malaysia team approach comprising of rheumatologists, nephrologist and immunologist(1). The management using antipsychotic medications also involved the use of corticosteroids and cyclophosphamide in regard to their ability to suppress the immune system while avoiding exacerbation of other renal complications (1). This case underlines the reason for early diagnosis, detailed clinical evaluation, and histopathologic validation of such patients to help in therapeutic management of SLE and prevent long-term morbidity related to multisystem involvement of this autoimmune disease(2).

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## **2. Case Presentation**

A 28-year-old woman went to the ER because she was having trouble breathing, a high temperature (38°C), chills, chest pain, and stomach discomfort. Musculoskeletal discomfort, exhaustion, anorexia, a 15-kilogram weight loss, extreme hair thinning, and recurring mouth ulcers were her symptoms throughout the last two months. She was treated for hypothyroidism with Eltroxin 100 mg daily for 18 months and had a severe medical history of immune thrombocytopenic purpura (ITP) five years ago, which necessitated blood transfusions for anemia. She did not mention any additional drugs or a history of rheumatic disorders in her family.

She had pitting edema (grade 3-4), raised jugular venous strain, palpable carotid pulsations, pulsus paradoxus, and seemed pale, exhausted, and dyspneic throughout the examination. The patient's vitals were as follows: BP 90/70 mm Hg, temperature 39°C, HR 140/60 bpm, and SpO2 93%. Heart auscultation revealed diminished sounds, and chest examination showed reduced bilateral air entry.

### **Laboratory Tests Revealed:**

Hemoglobin: 7.5 g/dL

White blood cell count: 4,500/ $\mu$ L

Platelet count: 90,000/ $\mu$ L

Prothrombin time (PT): 16 seconds

Activated partial thromboplastin time (aPTT): 40 seconds

ANA: positive

Anti-dsDNA: positive

Serum complement levels (C3, C4): low

A chest X-ray revealed pleural effusion and an elevated cardiopulmonary index. The results of the ECG revealed sinus tachycardia. The computed tomography (CT) scans of the neck, chest, and mid-region showed several abnormalities, including a small amount of fluid around the heart (about 20-22 mm), some liver swelling (>18 cm), some substantial fluid buildup (ascites), and swollen lymph nodes in the arms and legs (<15 mm) on both sides. Cardiac tamponade was detected via echocardiography.

The results of the emergency pericardiocentesis showed 70% lymphocytes in the pericardial fluid, 4 g/dL of protein, and 2519 U/L of lactate dehydrogenase (LDH). Cytology showed no signs of cancer, while polymerase chain reaction and bacterial cultures had no evidence of tuberculosis.

In order to rule out infectious and cancerous conditions, the patient was hospitalized to the coronary

consideration unit for further examinations. Breast mammography and bone biopsy came back normal, and the COVID-19 PCR came back negative. Her significant stomach discomfort began three days after her admittance. A bloated belly, widespread soreness, and spasm in the abdominal wall were all seen during the examination. Ultrasound of the abdomen revealed significant ascites.

A substantial quantity of clear fluid was found during the exploratory laparotomy, which did not indicate any aberrant pathology or perforation. Upon examination of the peritoneal fluid, it was found that there were 3000/ $\mu$ L leukocytes (67% lymphocytes), 3.2 g/dL protein, 1.2 g/dL albumin, and 0.8 g/dL serum-ascites albumin gradient (SAAG). A peritoneal biopsy revealed nonspecific inflammation, and bacteriology and cytology came out negative for cancer.

So, consultation with rheumatologist was made, thus confirming the presence of SLE. They began intravenous methylprednisolone, and azathioprine and hydroxychloroquine at a dose of 200 mg each per day. This patient also showed a favorable outcome: reduction in the severity of symptoms, as well as the stabilization of the laboratory indicators within three months.

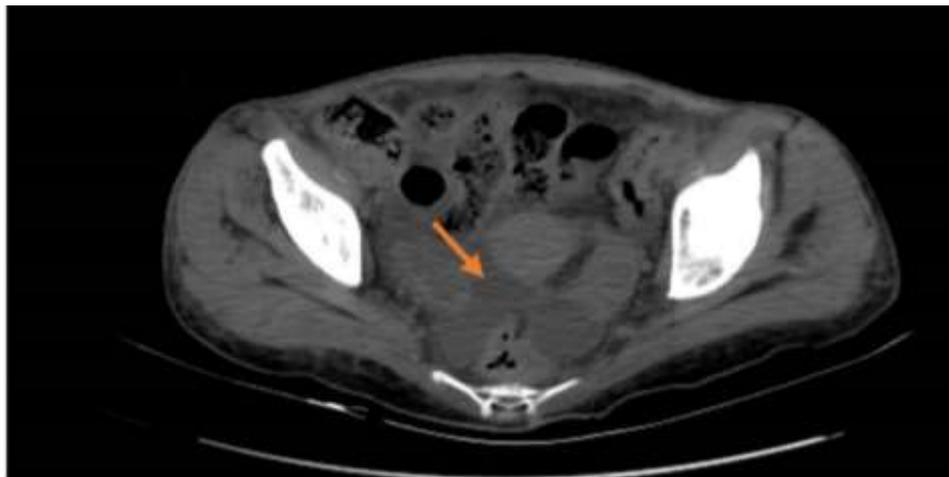
### **3. Discussion**

SLE is a chronic and poorly understood autoimmune disorder comprising autoantibodies against nuclear antigens and myriad clinical manifestations involving various organs. Diagnostic criteria for SLE and the ideas of the disease pathophysiology progressed a lot during the years, affecting the issues of the disease's very detection and the management strategies (1). Originally, diagnostic criteria were dominated by clinical signs, while today additional serological and immunological markers, such as ANA and anti-dsDNA are successfully used to strengthen the diagnosis and evaluate the severity of the process (Man & Mok, 2005).

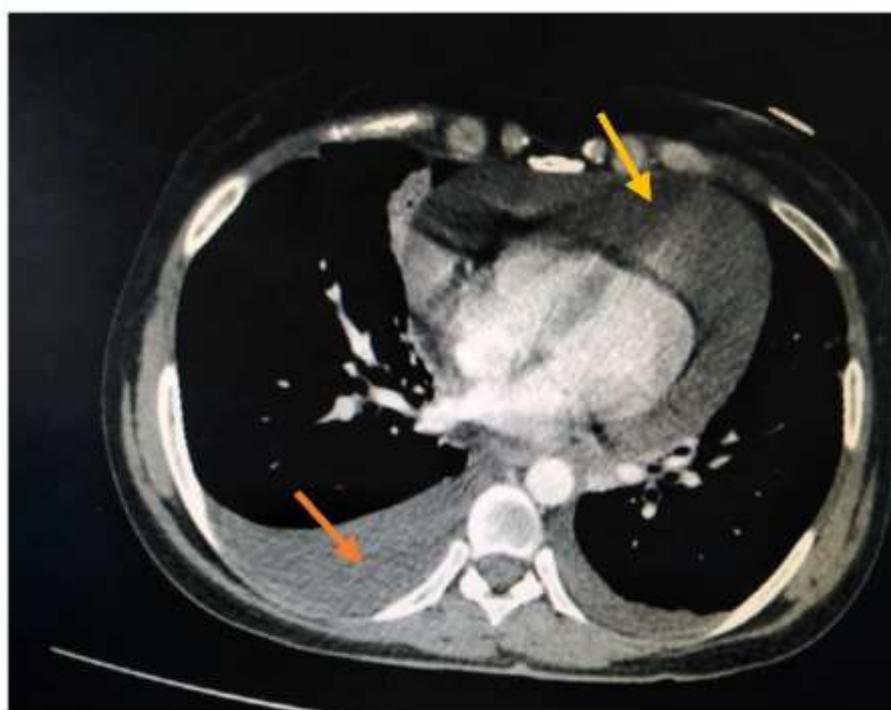
While serositis affecting the pleura or peritoneum of the abdomen is common in SLE, it often has symptoms that may resemble acute cholecystitis or peritonitis (3)(5). These manifestations make it difficult for the clinicians to distinguish serositis that is associated with SLE and other causes of abdominal or chest pain and may require extensive clinical assessment follow up by imaging studies for accurate diagnosis.

Also, this SLE often shows atypical presentations, which includes lupus erythematosus tumidus or massive ascites which can occur before other classically cardinal symptoms appear (Ago et al., 2014; Hammami et al., 2017). Such varying manifestations demonstrate the need for an increased the patient was hospitalized to the coronary consideration unit clinical features especially in situations where starting immunosuppressive therapy can help slow disease progression and enhance prognosis (4).

In the discussion of this introduction, we delve into the changes in current diagnostic hallmarks of SLE and clinical presentation of SLE, referencing contemporary shifts in these diagnostic features and new articles that describe diverse and at times subtle symptoms of SLE. Overall by implementing these insights, the management of SLE is improved which will in turn improve patients' care and outcomes among this complex autoimmune disease group.



Moderate ascites (arrow)



A minor pleural effusion (orange arrow) with a large pericardial effusion (yellow arrow)

#### **4. Conclusion**

A chronic multifocal autoimmune illness, SLE manifests itself over time and causes a wide range of symptoms. This case demonstrates why SLE should be considered for any woman with unexplained multi-system involvement and or presenting with such complications like cardiac tamponade and acute peritonitis. Thus, early diagnosis and the use of a team approach form the cornerstone of the management of and better results in patients with the condition. It is however relevant to conduct more research to be able to explain the underlying factors of SLE and therefore find the correct approaches to treat it.

**Conflict of Interest:** Nil.

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