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SYSTEMIC LUPUS ERYTHEMATOSUS PRESENTING AS FEVER OF UNKNOWN ORIGIN IN PREGNANCY: A CASE REPORT

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Abstract

Systemic lupus erythematosus (SLE) is a chronic autoimmune disease that primarily affects women of reproductive age. Pregnancy in women with SLE is often complicated by disease flares, posing significant maternal and fetal risks, such as preeclampsia, lupus nephritis, miscarriage, preterm birth, and intrauterine growth restriction. Diagnosing SLE during pregnancy is particularly challenging due to overlapping symptoms with pregnancy-related conditions. Literature on new-onset SLE in pregnancy is limited, highlighting the need for more case reports to improve understanding and management.

We report the case of a 28-year-old primigravida, presenting at 29 weeks of gestation with fever, pancytopenia, and fatigue. Initial investigations ruled out infectious causes, and subsequent autoimmune testing confirmed new-onset SLE. Prompt treatment with corticosteroids and immunosuppressants resulted in the patient's recovery and successful delivery at 39 weeks without complications. This case underscores the diagnostic challenges of SLE during pregnancy and emphasizes the importance of early recognition and a multidisciplinary approach to management to prevent adverse maternal and fetal outcomes.

Keywords: Systemic lupus erythematosus (SLE), Pregnancy, Autoimmune disorder, New-onset SLE, Maternal-fetal outcomes, Multidisciplinary management, Fever of unknown origin

Introduction

Systemic lupus erythematosus (SLE) is a chronic multisystem autoimmune disorder that predominantly affects women of reproductive age. Pregnancy in women with SLE is often

complicated by disease flares, which can lead to significant maternal and fetal risks, including hypertension, preeclampsia, lupus nephritis, miscarriage, preterm birth, neonatal death, and intrauterine growth restriction. Early diagnosis and management through a multidisciplinary approach are crucial in reducing both morbidity and mortality (1, 2).

Diagnosing SLE during pregnancy can be particularly challenging due to the overlapping symptoms and laboratory abnormalities that mimic other pregnancy-related conditions. Despite this, there is currently limited literature on the diagnosis and management of new-onset SLE during pregnancy. In this report, we present a case of new-onset SLE during pregnancy, highlighting the diagnostic challenges encountered. Our aim is to provide valuable insights into the timely recognition of SLE in pregnancy, helping to prevent delays in treatment and reduce the risk of adverse maternal and fetal outcomes in such complex cases.

Case Presentation

A 28-year-old primigravida, with no significant past medical history, presented to the hospital at 29 weeks of gestation, complaining of fever, headaches, and fatigue persisting for 10 days. She denied any additional symptoms. Her vital signs revealed a temperature of 102°F, blood pressure of 130/80 mmHg, and a heart rate of 110 bpm. Physical examination, including abdominal, respiratory, neurological, and rheumatological assessments, was unremarkable.

Initial laboratory investigations showed pancytopenia, a high reticulocyte count, raised inflammatory markers, and negative findings for viral profiles, malarial parasites, dengue serology, and urinalysis (Table 1). Blood and urine cultures were also negative. Given the elevated reticulocyte count and pancytopenia, we suspected an autoimmune etiology for her fever and cytopenia after ruling out infectious causes. Chest X-ray and abdominal ultrasonography were normal.

Supportive treatment was initiated, including blood transfusions for low hemoglobin, acetaminophen for fever, and hydration. ANA and ENA panels were sent to screen for autoimmune conditions. Despite transfusions, the patient's anemia showed minimal improvement, and her fever persisted. Consequently, we started injectable dexamethasone 4 mg once daily, which led to partial improvement in both fever and blood counts after two days, heightening our suspicion of an autoimmune disorder.

Rheumatology consultation was sought, and further autoimmune testing revealed a high-titer positive ANA with a homogeneous pattern, positive anti-dsDNA, a positive direct Coombs test, and low complement levels, while other autoimmune panels were negative (Table 1). Based on these findings, a diagnosis of systemic lupus erythematosus (SLE) was established as the underlying cause of her fever of unknown origin, a rare presentation during pregnancy.

Following rheumatology recommendations, we initiated methylprednisolone 1 gram daily for three days, which led to a marked improvement in her blood counts and resolution of fever. She was discharged on the fifth day without any active complaints, transitioning to oral prednisolone (1 mg/kg/day) with a tapering dose, along with hydroxychloroquine 400 mg daily and azathioprine 50 mg daily.

On follow-up, the patient remained symptom-free, with normal fetal development. She successfully delivered at 39 weeks of gestation via spontaneous vaginal delivery, without any maternal or fetal complications. Postpartum, the patient was referred to rheumatology for ongoing follow-up.

Labs	Normal range	Results
Hemoglobin	g/dl (11.5 – 17.5)	7.8
Total leukocyte count (TLC)	$x10^3$ /µl (4 - 11)	3.12
Platelet count	$x10^3$ /µl (150 – 450)	125

SODIUM (mEq/L)	135 – 145	139
CHLORIDE (mEq/L)	96 - 112	105
POTASSIUM (mEq/L)	3.5 – 5.3	4.5
BUN (mg/dL)	18 – 46	28
Creatinine (mg/dL)	0.3 – 1.1	0.5
Retic Count (%)	0.5-2.5	3.1
ALP (mg/dL)	40-145	84
Total Bilirubin (mg/dL)	0.1 – 1.2	0.9
ALT (IU/L)	10 – 50	41
RBS (mg/dL)	70 - 140	88
ESR (mm/ 1st hr)	0-20	51
CRP(mg/dL)	<0.5	2.5
Direct Coombs		Positive
Indirect Coombs		Negative
R Factor (RF)		Negative
Anti-CCP		Negative
Malarial Parasite		Negative
Dengue IgG & IgM		Negative
Anti-Nuclear Antibody	<1:80	1:1280 Homogenous
Anti-dsDNA	<1.5	5.3
Anti-Jo-1	<1.5	Negative
Anti-SS-B (La)	<1.5	Negative
Ant-SS-A (Ro)	<1.5	Negative
Anti-Sm	<1.5	Negative
Anti-Scl-70	<1.5	Negative
Anti-RNP	<1.5	Negative
Anti- Phospholipid Antibody	<1.5	Negative
Complement 3 (mg/dL)	70-160	55
Complement 4 (mg/dL)	8-40	5

Table 1: Lab investigations during hospital admission

Discussion

SLE is often referred to as "the great imitator," a fact exemplified by the complexities encountered in this case. Thanks to a timely diagnosis and appropriate management, the outcome in our case was remarkable. However, delayed diagnosis significantly raises the risk of maternal and fetal complications (2). Identifying SLE during pregnancy remains particularly difficult due to its overlapping symptoms with other conditions and the limited literature addressing new-onset SLE during pregnancy. Most existing studies focus on managing disease flares and evaluating maternal and fetal outcomes.

Diagnosing SLE in non-pregnant patients is already a challenge due to several factors. First, the disease's onset is often gradual, taking years to become apparent. Its early symptoms are nonspecific and can resemble other conditions such as infections or hematological disorders, often leading patients to specialists unfamiliar with SLE diagnosis and management. In pregnancy, this challenge is compounded by the fact that many SLE symptoms—such as fatigue, myalgia, skin changes, and hair loss—overlap with normal physiological changes in pregnancy (3).

Some clinical features, however, can help distinguish new-onset SLE. It tends to manifest in the first or second trimester (4). Compared to non-pregnant women with SLE, pregnant women with new-onset SLE are less likely to experience symptoms like fever, arthralgia, hair loss, Raynaud's phenomenon, and oral ulcers (5). Retrospective analyses from China have shown that women with new-onset SLE during pregnancy tend to have higher disease activity, more hematological abnormalities (especially thrombocytopenia and anemia), renal involvement, and increased pregnancy loss compared to those with preexisting SLE (5,6). However, hematological and renal abnormalities are also seen in hypertensive disorders of pregnancy, such as preeclampsia and HELLP syndrome, making diagnosis more challenging (5).

Despite these challenges, laboratory findings such as low complement levels and inactive urine sediment can help differentiate SLE from conditions like preeclampsia and HELLP syndrome (5). Clinical signs such as new-onset lymphadenopathy, arthritis, fever, or rash can also aid in distinguishing the conditions (6). In unclear cases, a renal biopsy may be necessary for diagnosis. Early and accurate diagnosis is critical since the management of SLE differs significantly from that of preeclampsia, which often requires prompt delivery (7).

SLE during pregnancy is associated with numerous adverse maternal and fetal outcomes. In 2008, the maternal mortality rate in women with SLE during pregnancy was reported to be 20 times higher than in non-pregnant women (7). However, maternal mortality has significantly decreased. A study by Mehta et al. found a five-fold reduction in mortality rates among pregnant women with SLE in the United States (8). Despite these improvements, complications such as preterm delivery, low birth weight, and fetal loss remain more frequent in pregnancies complicated by SLE. The risk of pregnancy loss is particularly high in women with new-onset SLE (62.4%) compared to those with preexisting disease (27.1%), with most losses occurring in the first and second trimesters (4).

A multidisciplinary approach is crucial to monitor and manage obstetric and neonatal complications in pregnant women with SLE. The mainstays of treatment during pregnancy are hydroxychloroquine and azathioprine. Hydroxychloroquine, an antimalarial drug, should be initiated or continued during pregnancy, as it reduces flare-ups and the risk of neonatal lupus and congenital heart block without causing fetal harm. Azathioprine is considered safe in pregnancy, though the dose should be limited to a maximum of 2 mg/kg/day to avoid fetal cytopenias and immune suppression. Immunosuppressive drugs like cyclophosphamide, methotrexate, and mycophenolate are contraindicated in pregnancy and should be discontinued three months before conception. Corticosteroids should also be used cautiously, at the lowest effective dose, due to their association with maternal diabetes, preeclampsia, and hypertension (9).

In conclusion, new-onset SLE during pregnancy is a complex condition with a broad spectrum of presentations. While rare, a high index of suspicion is necessary, especially in challenging cases like the one presented. Prompt recognition and appropriate management are essential to avoid adverse outcomes. Therefore, reporting and disseminating specific cases of SLE during pregnancy, along with the methods of diagnosis, are crucial to improving outcomes in such cases.

Conclusion

In conclusion, this case report highlights the complexity and diagnostic challenges of new-onset systemic lupus erythematosus (SLE) during pregnancy, underscoring the importance of maintaining a high index of suspicion for autoimmune disorders in pregnant women presenting with unexplained cytopenia, fever, and persistent symptoms. Early and accurate diagnosis is critical for improving maternal and fetal outcomes, as SLE can mimic other pregnancy-related conditions like preeclampsia and HELLP syndrome. Multidisciplinary management, including the judicious use of corticosteroids, hydroxychloroquine, and azathioprine, can lead to favorable outcomes, as seen in this case, where timely intervention resulted in the successful delivery of a healthy infant and recovery of the mother. This case emphasizes the need for heightened awareness and prompt recognition of new-onset SLE in pregnancy to reduce the risk of complications.

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