Perspective

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# A Rare Presentation of Systemic Lupus Erythematosus with Concurrent Rheumatoid Arthritis in a Young Adult

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## Abstract

Systemic lupus erythematosus (SLE) and rheumatoid arthritis (RA) are both autoimmune diseases that commonly affect the joints, but their co-occurrence is rare. We report a case of a young adult who presented with symptoms of both SLE and RA, posing diagnostic challenges. The patient's initial presentation and subsequent investigations highlighted the need for a multidisciplinary approach in diagnosing and managing such rare overlapping autoimmune diseases. The complexity of treatment strategies, particularly concerning the use of immunosuppressive drugs, is discussed.

**Keywords:** Systemic lupus erythematosus • Rheumatoid arthritis • Overlapping syndrome • Autoimmune diseases • Methotrexate • hydroxychloroquine • Diagnosis • Case report

## Introduction

Systemic lupus erythematosus (SLE) is a chronic autoimmune disorder characterized by multi-organ involvement, including skin, joints, kidneys, and the central nervous system. Rheumatoid arthritis (RA), on the other hand, primarily affects the synovial joints, leading to pain, swelling, and potential deformities. While both diseases share some clinical features, such as joint inflammation, their co-occurrence is infrequent. This case report describes a young adult with concurrent SLE and RA, highlighting the diagnostic challenges, treatment considerations, and the need for individualized care in such complex presentations [1-3].

## Case Presentation

A 28-year-old female with no significant medical history presented to the rheumatology clinic with complaints of joint pain, swelling, and fatigue that had been progressively worsening over the past six months. She reported experiencing symmetric joint involvement, particularly in the wrists, knees, and metacarpophalangeal joints, which was associated with morning stiffness lasting for more than an hour. She also described a butterfly-shaped rash across her cheeks and nose, which had appeared two months prior, along with photosensitivity and occasional oral ulcers [4].

On physical examination, the patient exhibited tender, swollen joints in both hands, wrists, and knees. A malar rash was evident on her face, along with erythematous patches on the extensor surfaces of her forearms. There was no evidence of joint deformities or subcutaneous nodules. Systemic examination revealed no signs of active systemic involvement beyond the musculoskeletal and dermatologic findings [5].

### Initial Investigations

Laboratory tests were ordered to investigate the etiology of the patient's symptoms. Her blood tests revealed:

- Positive antinuclear antibody (ANA) titer of 1:1280, with a speckled pattern
- Positive anti-double-stranded DNA (anti-dsDNA) antibodies

- Elevated erythrocyte sedimentation rate (ESR) of 45 mm/hr (normal range: 0-20 mm/hr)
- C-reactive protein (CRP) of 18 mg/L (normal range: <5 mg/L)
- Rheumatoid factor (RF) positive at 40 IU/mL (normal range: <14 IU/mL)
- Anti-citrullinated peptide antibodies (anti-CCP) positive
- Mild anemia (hemoglobin 11.4 g/dL) and thrombocytosis (platelets 480,000/μL)

These results raised the suspicion of both systemic lupus erythematosus and rheumatoid arthritis. To further evaluate the extent of organ involvement, the following investigations were carried out:

- Chest X-ray: Normal
- Echocardiogram: No evidence of pericardial effusion or valvular disease
- Urinalysis: No proteinuria or hematuria
- Joint X-rays: Mild soft tissue swelling in the hands and wrists, with no erosions or deformities

### Diagnosis

Given the combination of a positive ANA, anti-dsDNA, and the presence of a characteristic malar rash, the patient met the classification criteria for SLE, as defined by the American College of Rheumatology (ACR). The positive rheumatoid factor and anti-CCP antibodies, along with the symmetrical joint involvement, suggested the possibility of rheumatoid arthritis. After careful consideration of her clinical presentation and laboratory findings, a diagnosis of overlapping syndrome of systemic lupus erythematosus and rheumatoid arthritis was made. This rare presentation required a comprehensive approach to management, as the treatment strategies for these two diseases could differ [6-8].

### Management

The patient was started on a treatment regimen aimed at controlling both the inflammatory processes and preventing organ damage. Given the complexity of treating both conditions simultaneously, the following approach was taken:

**Non-Steroidal Anti-Inflammatory Drugs (NSAIDs):** The patient was prescribed ibuprofen for relief of joint pain and inflammation.

**Hydroxychloroquine:** As first-line therapy for SLE, hydroxychloroquine was initiated at a dose of 200 mg twice daily. This drug is known to provide symptomatic relief and reduce the frequency of flare-ups in lupus, as well as offering some benefit in managing joint symptoms.

**Methotrexate:** Considering the diagnosis of RA and the lack of significant improvement with NSAIDs alone, methotrexate (15 mg weekly) was introduced. Methotrexate is the cornerstone treatment for RA, and it can help control joint inflammation and prevent structural damage.

**Prednisolone:** A low dose of oral corticosteroids (prednisolone 10 mg daily) was started to control inflammation and prevent disease flare-ups. The patient was closely monitored for any adverse effects of long-term corticosteroid use, such as osteoporosis and hyperglycemia.

**Follow-up Monitoring:** Regular follow-up visits were scheduled to assess the patient's response to therapy. Laboratory tests, including complete blood count (CBC), liver function tests, and renal function, were monitored regularly, as both hydroxychloroquine and methotrexate have known potential side effects.

### Outcome

Over the next three months, the patient showed significant improvement in her symptoms. The joint pain and swelling were markedly reduced, and the malar rash resolved completely. Her ESR and CRP levels decreased, indicating a reduction in systemic inflammation. The patient reported a significant improvement in her quality of life, with better mobility and less fatigue.

At the six-month follow-up, the patient remained stable with no major disease flares. Her treatment regimen was maintained, with occasional adjustments in the corticosteroid dose to minimize side effects. A repeat chest X-ray and echocardiogram showed no signs of systemic involvement, and renal function remained normal.

## Discussion

The co-occurrence of systemic lupus erythematosus and rheumatoid arthritis is rare, and its diagnosis can be challenging due to overlapping clinical features such as joint inflammation. The presence of both anti-dsDNA and anti-CCP antibodies in this patient was particularly notable. While anti-dsDNA antibodies are highly specific for SLE, anti-CCP antibodies are considered specific for RA [9]. This suggests that in rare cases, patients may harbor the serological markers for both diseases, leading to an overlapping autoimmune disease phenotype.

The treatment of patients with overlapping autoimmune conditions requires a tailored approach. In this case,

the use of hydroxychloroquine and methotrexate was effective in managing both the lupus and rheumatoid arthritis components of the disease. It is crucial to monitor for potential adverse effects from immunosuppressive therapy, especially in patients with overlapping diseases, as these patients may have an increased risk of infections or other complications [10].

## Conclusion

This case highlights the importance of considering the possibility of overlapping autoimmune diseases in patients presenting with multiple autoimmune features. The diagnosis of concurrent SLE and RA requires a multidisciplinary approach, including rheumatologists, dermatologists, and immunologists, to ensure appropriate management. Tailored treatment with immunosuppressive agents such as methotrexate and hydroxychloroquine, along with careful monitoring for side effects, can lead to significant improvement in clinical outcomes for these complex patients. Further studies are needed to understand the pathophysiology of overlapping autoimmune diseases and optimize treatment strategies.

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