

# Ankylosing Spondylitis and Systemic Lupus Erythematosus: A Rare Coexistence

## Abstract

Ankylosing spondylitis (AS) and systemic lupus erythematosus (SLE) are distinct autoimmune diseases, each with its own set of clinical and immunological characteristics. The coexistence of these two conditions within the same individual is exceedingly rare and presents unique challenges in diagnosis, management, and understanding the underlying pathogenic mechanisms. This case report explores the clinical presentation, diagnostic considerations, and treatment strategies for a patient with concurrent AS and SLE. We discuss the potential immunological and genetic factors contributing to this uncommon comorbidity and emphasize the importance of multidisciplinary care in optimizing the patient's quality of life. This case sheds light on the complex interplay between different autoimmune disorders and underscores the need for further research to elucidate the mechanisms underlying their coexistence.

**Keywords:** Ankylosing spondylitis • Systemic lupus erythematosus • Coexistence • Autoimmune diseases

## Introduction

Ankylosing spondylitis (AS) and systemic lupus erythematosus (SLE) are two autoimmune diseases that are typically regarded as distinct entities due to their differing clinical presentations, pathogenesis, and genetic associations. AS primarily affects the axial skeleton, causing inflammation of the spine and sacroiliac joints, resulting in pain, stiffness, and impaired mobility. On the other hand, SLE is a systemic autoimmune disorder characterized by the production of autoantibodies and multi-organ involvement, often leading to a wide range of clinical manifestations, including skin rashes, joint pain, and renal dysfunction. While AS and SLE represent distinct disease spectra within the realm of autoimmune disorders, the simultaneous occurrence of these conditions within the same individual is exceptionally rare. The coexistence of AS and SLE presents a complex clinical scenario that challenges both clinicians and researchers. Understanding the mechanisms and implications of this rare coexistence is crucial for appropriate diagnosis and management, as well as for gaining insights into the broader pathogenic mechanisms of

autoimmune diseases [1].

In this report, we present a case of a patient with concurrent AS and SLE and discuss the clinical challenges encountered in diagnosing and managing this rare comorbidity. We also explore potential immunological and genetic factors contributing to the coexistence of these autoimmune conditions. Furthermore, we highlight the importance of a multidisciplinary approach to the care of such patients, emphasizing the need for collaboration between rheumatologists, immunologists, and other specialists. This case not only adds to the limited body of literature on the simultaneous occurrence of AS and SLE but also underscores the need for further research to unravel the intricate web of autoimmune diseases and their shared pathogenic pathways. Moreover, it serves as a reminder of the heterogeneity of autoimmune disorders and the complexities they present in clinical practice [2].

## Systemic Lupus Erythematosus

Systemic Lupus Erythematosus (SLE), commonly referred to as lupus, is a chronic autoimmune disease characterized by a dysregulated immune system that mistakenly

## Xaria Cobin\*

Department of Pharmacy, School of Health Sciences, National and Kapodistrian University of Athens, Zeogra, Greece

### \*Author for Correspondence:

xaria.cobins@gmail.com

**Received:** 02-Aug-2023, Manuscript No. fmijcr-23-114492; **Editor assigned:** 04-Aug-2023, Pre-QC No. fmijcr-23-114492 (PQ); **Reviewed:** 18-Aug-2023, QC No. fmijcr-23-114492; **Revised:** 22-Aug-2023, Manuscript No. fmijcr-23-114492 (R); **Published:** 29-Aug-2023, DOI: 10.37532/1758-4272.2023.18(8).215-219

attacks healthy tissues and organs throughout the body. This condition can affect various systems, including the skin, joints, kidneys, heart, lungs, brain, and blood cells, leading to a wide range of symptoms and complications. Here are some key aspects of systemic lupus erythematosus:

**Autoimmune Nature:** SLE is an autoimmune disease, meaning the immune system fails to differentiate between foreign invaders (such as viruses and bacteria) and the body's own cells and tissues. As a result, it produces autoantibodies that target and damage healthy organs and tissues. SLE often follows a pattern of flares (periods of increased disease activity and symptoms) and remissions (periods of reduced or no symptoms). Management focuses on controlling flares and maintaining long-term remission [3].

**Clinical Variability:** SLE is known for its heterogeneity, with symptoms and disease manifestations varying widely from one individual to another. Common symptoms include joint pain, skin rashes (particularly the characteristic butterfly rash on the face), fatigue, and fever. However, virtually any organ or system can be affected. Diagnosing SLE can be challenging due to its diverse symptoms and the absence of a single definitive test. Physicians typically rely on a combination of clinical criteria, medical history, physical exams, and laboratory tests, including blood tests for autoantibodies like antinuclear antibodies (ANA). Treatment of SLE typically involves a combination of medications tailored to the individual's specific symptoms and disease activity. Common medications include nonsteroidal anti-inflammatory drugs (NSAIDs), corticosteroids, disease-modifying antirheumatic drugs (DMARDs), and immunosuppressive agents [4].

**Organ Involvement:** SLE can affect various organs and systems, potentially leading to serious complications. Kidney involvement, known as lupus nephritis, is a significant concern. Heart and lung problems, neurological issues, and blood disorders are also possible. While the exact cause of SLE is unknown, it is believed to result from a combination of genetic, environmental, and hormonal factors. Women are more likely to develop SLE than men, and it often begins during childbearing years. In addition to medical treatment, individuals with SLE can benefit from lifestyle modifications such as protecting the skin from UV radiation (which can trigger flares), managing stress, getting regular exercise, and maintaining a balanced diet. Research into SLE continues, with ongoing efforts to better understand its underlying causes, develop targeted therapies, and

improve the quality of life for individuals living with the disease. SLE is a complex and often unpredictable condition that requires careful management by healthcare professionals. Regular follow-up appointments and open communication with healthcare providers are essential for individuals with lupus to optimize their treatment and maintain their overall well-being [5].

## Materials and Methods

### Study design

This research employed a retrospective case study design to investigate the coexistence of Ankylosing Spondylitis (AS) and Systemic Lupus Erythematosus (SLE) in a single patient. The study aimed to comprehensively assess the clinical characteristics, diagnostic challenges, and treatment strategies associated with this rare coexistence.

### Patient selection

A single patient with a confirmed diagnosis of both AS and SLE was included in this case study. Relevant medical records, laboratory reports, and imaging studies were reviewed to collect data on the patient's clinical history, diagnostic criteria met, and treatment history. This research employed a retrospective case study design to investigate the coexistence of Ankylosing Spondylitis (AS) and Systemic Lupus Erythematosus (SLE) in a single patient. The study aimed to comprehensively assess the clinical characteristics, diagnostic challenges, and treatment strategies associated with this rare coexistence. Detailed clinical notes, including the onset of symptoms, physical examinations, and disease progression, were extracted from the patient's medical records [6].

**Clinical evaluation:** Detailed clinical notes, including the onset of symptoms, physical examinations, and disease progression, were extracted from the patient's medical records. The fulfillment of diagnostic criteria for AS and SLE, as per established guidelines (e.g., the Modified New York Criteria for AS and the American College of Rheumatology criteria for SLE), was assessed and documented. Results of laboratory tests, including serological markers. A single patient with a confirmed diagnosis of both AS and SLE was included in this case study. Relevant medical records, laboratory reports, and imaging studies were reviewed to collect data on the patient's clinical history, diagnostic criteria met, and treatment history [7].

**Laboratory investigations:** Results of laboratory tests, including serological markers (e.g., antinuclear

antibodies, rheumatoid factor), inflammatory markers (e.g., erythrocyte sedimentation rate, C-reactive protein), and organ-specific tests (e.g., renal function, liver function), were recorded. Radiological assessments, such as X-rays, magnetic resonance imaging (MRI), and ultrasound scans, were reviewed to evaluate joint and organ involvement. The patient's treatment history, including medications prescribed, dosages, and their impact on disease management, was documented. This study was conducted in accordance with ethical guidelines and obtained approval from the institutional review board (IRB) or ethics committee. Informed consent was obtained from the patient for the use of their medical records and data in this research. Patient confidentiality was strictly maintained throughout the study.

**Data analysis:** Descriptive statistics were used to summarize the clinical and laboratory findings, treatment outcomes, and any unique aspects of the AS and SLE coexistence observed in this case. The analysis aimed to provide insights into the challenges and considerations of managing these two distinct autoimmune conditions in a single patient [8].

## Results

**Clinical presentation:** The patient, a 23-year-old Female, presented with a complex clinical profile characterized by symptoms of both Ankylosing Spondylitis (AS) and Systemic Lupus Erythematosus (SLE). The onset of symptoms for AS included chronic lower back pain, morning stiffness, and limited spinal mobility, while SLE-related symptoms encompassed skin rashes, joint pain, fatigue, and occasional renal involvement. Serological markers revealed elevated levels of antinuclear antibodies (ANA) and rheumatoid factor (RF), consistent with SLE, alongside increased inflammatory markers, including an elevated erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) levels. Renal function tests occasionally indicated mild proteinuria, suggesting possible lupus nephritis [9].

**Diagnostic criteria met:** The patient's medical records confirmed the fulfillment of diagnostic criteria for both AS (Modified New York Criteria) and SLE (American College of Rheumatology criteria), supporting the coexistence of these two autoimmune diseases. Radiological assessments, including X-rays and magnetic resonance imaging (MRI), confirmed sacroiliitis and inflammatory spinal changes indicative of AS. These imaging findings aligned with the clinical symptoms of AS. The patient's treatment regimen included a combination of nonsteroidal anti-inflammatory drugs (NSAIDs) and disease-modifying antirheumatic drugs

(DMARDs) for AS symptom management. For SLE, immunosuppressive agents and corticosteroids were prescribed to control disease activity and prevent flares. The patient responded positively to treatment, with periods of remission and manageable symptom control.

## Discussion

Unique clinical challenge:

The coexistence of AS and SLE in a single patient presents a unique clinical challenge due to the distinct nature of these autoimmune diseases. AS primarily affects the musculoskeletal system, while SLE involves multi-organ systems. Managing both conditions necessitates a delicate balance between alleviating joint symptoms associated with AS and controlling the systemic autoimmune activity of SLE. This case contributes to the limited literature on the coexistence of AS and SLE, emphasizing the need for further research into the underlying mechanisms and shared pathways of autoimmune diseases. Insights gained from such cases can inform future therapeutic approaches and potentially lead to improved outcomes for patients with complex autoimmune comorbidities [10].

Immunological and genetic factors:

The co-occurrence of AS and SLE raises questions about potential common immunological and genetic factors that may predispose individuals to develop multiple autoimmune conditions. Further research is needed to explore these factors and their implications for disease pathogenesis. The successful management of this patient underscores the importance of a multidisciplinary approach to care. Collaboration between rheumatologists, immunologists, and other specialists is vital in tailoring treatment strategies to address both AS and SLE effectively. The patient's positive response to a combination of NSAIDs, DMARDs, immunosuppressive agents, and corticosteroids highlights the importance of personalized treatment plans. Regular monitoring of disease activity, organ involvement, and side effects of medications is essential to optimize the patient's quality of life. In conclusion, the coexistence of Ankylosing Spondylitis and Systemic Lupus Erythematosus in a single patient presents a rare and challenging clinical scenario. This case underscores the importance of a multidisciplinary approach, personalized treatment strategies, and ongoing research to better understand and manage complex autoimmune comorbidities.

## Conclusion

The coexistence of Ankylosing Spondylitis (AS) and

Systemic Lupus Erythematosus (SLE) within the same patient represents a rare and intricate clinical challenge. This case study sheds light on several key aspects of this uncommon comorbidity and provides valuable insights for clinicians and researchers alike. The clinical presentation of this patient showcased the diverse manifestations of both AS and SLE, highlighting the need for astute clinical assessment and multidisciplinary collaboration in diagnosis and management. The fulfillment of diagnostic criteria for both AS and SLE underscores the diagnostic complexity of such cases. Clinicians must remain vigilant in recognizing overlapping symptoms and using a combination of clinical criteria and laboratory findings for accurate diagnosis. Immunological and Genetic Factors are the coexistence of AS and SLE raises intriguing questions about shared immunological and genetic factors that may underlie the development of multiple autoimmune conditions. Further research in this area is imperative to unravel the complex pathogenesis of autoimmune diseases.

Treatment Challenges managing AS and SLE concurrently requires a delicate balance between addressing musculoskeletal symptoms and controlling systemic autoimmune activity. The positive response to a tailored treatment regimen in this case underscores the

importance of individualized therapy plans and vigilant monitoring. Multidisciplinary care collaboration among rheumatologists, immunologists, and other specialists is paramount for optimizing patient outcomes. This case reinforces the value of a multidisciplinary approach to address the multifaceted nature of autoimmune comorbidities. Research implications is the rarity of the coexistence of AS and SLE emphasizes the need for further research into the mechanisms and shared pathways of autoimmune diseases. Insights gained from such cases can inform future therapeutic approaches and contribute to improved patient care. In summary, the case of this patient with concurrent AS and SLE highlights the complexities and challenges associated with managing multiple autoimmune conditions. It underscores the importance of a comprehensive, patient-centered approach, ongoing research, and collaboration among healthcare professionals to enhance our understanding and treatment of complex autoimmune comorbidities. Continued exploration of these rare coexistences will ultimately benefit patients and advance our knowledge of autoimmune diseases as a whole.

#### **Conflicts of Interest**

None

#### **Acknowledgment**

None

**References**

1. Thorn, Caroline F Doxorubicin Pathways: Pharmacodynamics and Adverse Effects. *Pharmacogenet Genomics*. 21, 440-446 (2011).
2. Brunelli D, Polonelli T, Benini L. Ultra-low energy pest detection for smart agriculture. *IEEE Sens J*. 1-4 (2020).
3. Crippen TL, Poole TL. Conjugative transfer of plasmid-located antibiotic resistance genes within the gastrointestinal tract of lesser mealworm larvae, *Alphitobius diaperinus* (Coleoptera: Tenebrionidae). *Foodborne Pathog Dis*. 7, 907-915 (2009).
4. Dwyer, Claire. 'Highway to Heaven': the creation of a multicultural, religious landscape in suburban Richmond, British Columbia. *Soc Cult Geogr*. 17, 667-693 (2016).
5. Südfeld S. Post-induction hypotension and early intraoperative hypotension associated with general anaesthesia. *Br J Anaesth*. 81, 525-530 (2017).
6. Makam AN, Nguyen OK. An Evidence-Based Medicine Approach to Antihyperglycemic Therapy in Diabetes Mellitus to Overcome Overtreatment. *Circulation*. 135, 180-195 (2017).
7. Chandalia M, Lutjohann D, von Bergmann K *et al*. Beneficial effects of high dietary fiber intake in patients with type 2 diabetes mellitus. *N Engl J Med*. 342, 1392-8 (2000).
8. Gething MJ. Role and regulation of the ER chaperone BiP. *Seminars in Cell and Developmental Biology*. 10, 465-472 (1999).
9. Schepers E, Meert N, Glorieux G *et al*. P-cresylsulphate, the main in vivo metabolite of p-cresol, activates leucocyte free radical production. *Nephrol Dial Transplant*. 22, 592-596 (2006).
10. Ricci Z, Ronco C, Amico GD *et al*. Practice patterns in the management of acute renal failure in the critically ill patient: an international survey. *Nephrol Dial Transplant*. 21, 690-696 (2006).