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Case Report

Oral Lesions in Systemic Lupus Erythematosus. A Case Series

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ABSTRACT

Systemic lupus erythematosus (SLE) is a chronic autoimmune disease characterized by multi-system involvement and diverse clinical manifestations, including oral lesions. Oral manifestations are often overlooked despite their potential to serve as early indicators of SLE. Identifying these lesions can help in prompt diagnosis and management, significantly improving patient outcomes. This case series presents two patients with distinct oral and systemic manifestations of SLE, emphasizing the pivotal role of dentists in the early detection and comprehensive multidisciplinary care.

Keywords: Antinuclear antibody test, Autoimmune disease, Burning sensation, Photosensitivity, Systemic lupus erythematosus

Introduction

Systemic lupus erythematosus (SLE) is a chronic autoimmune condition with a diverse clinical presentation that primarily affects women of childbearing age.[1] Globally, the prevalence of SLE varies significantly, ranging from 20 to 150 cases/100,000 individuals, with higher rates reported in Afro-Caribbean, Hispanic, and Asian populations compared to Caucasians.[2] The disease predominantly affects women in a 9:1 female-to-male ratio, with hormonal influences, particularly estrogen, playing a critical role in disease pathogenesis. Beyond systemic complications, SLE also has significant implications for quality of life, particularly in sexual health and psychosocial well-being. Over 50% of women with SLE report sexual dysfunction due to a combination of physiological and psychological factors, highlighting the multifaceted nature of this disease.[3]

The disease involves multiple systems, including the joints, skin, kidneys, nervous system, and blood cells. Among the less recognized but clinically significant manifestations are oral lesions, present in 20–50% of SLE patients.[4] Oral lesions are particularly noteworthy as they can either precede systemic symptoms or occur simultaneously, serving as an early diagnostic marker of the disease. These lesions often mimic other conditions, making their recognition both challenging and critical. Dentists play an integral role in identifying these lesions, facilitating early referrals and multidisciplinary collaboration for better patient outcomes. This case series presents two patients with distinct oral lesions

associated with SLE and discusses their diagnostic and management challenges. By comparing these cases to previously reported presentations, we aim to highlight unique diagnostic approaches and the importance of a multidisciplinary strategy in improving patient care.

Case Presentation 1

A 22-year-old Indian female homemaker from Karnataka, India, presented with a 2-month history of persistent burning sensations in her oral cavity, particularly affecting the palate. The discomfort was most pronounced when consuming spicy or hot foods, significantly impacting her daily dietary habits. Initially mild, the symptoms gradually intensified over time, leading the patient to seek medical advice. She was prescribed Tantum mouth rinse by her physician, which provided only minimal relief. Despite this, the burning sensation persisted, prompting further evaluation. In addition to her oral symptoms, the patient reported a series of systemic issues. These included recurrent urinary tract infections, episodes of fever, joint pain, disturbed sleep, tension headaches, weight loss, and persistent itchy skin. These symptoms, along with her oral discomfort, significantly affected her quality of life.

Her medical history revealed that she was diagnosed with SLE 6 months before her presentation. She had been undergoing treatment with hydroxychloroquine (200 mg daily) and prednisolone (16 mg daily) as part of her management plan for SLE. In addition to these, she was prescribed other supportive medications to manage the systemic manifestations of her condition. Despite being on treatment, her symptoms persisted, necessitating further assessment and a tailored approach to her care.

Clinical findings

On clinical examination, the patient exhibited pallor, indicating a possible underlying anemia or systemic involvement. However, her vital signs, including blood pressure (120/80 mmHg) and pulse rate (72 beats/min), were within normal limits, suggesting stable hemodynamic status. During the extraoral examination, bilateral submandibular lymph nodes were found to be palpable, potentially reflecting an inflammatory or immune response associated with her systemic condition. The intraoral examination revealed erythematous lesions on the palate depicting chronic well-defined papules with central erythema [Figure 1a] and erythematous healing lesion on buccal mucosa,

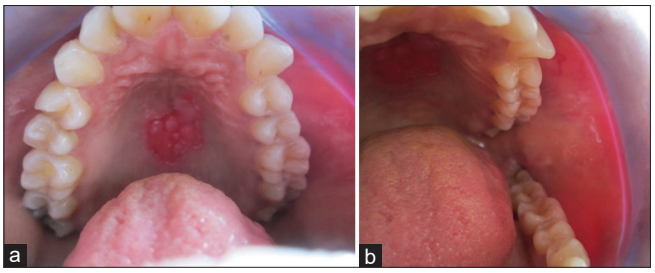

Figure 1: (a) Erythematous lesions on the palate depicting chronic well-defined papules with central erythema and (b) healing erythematous lesion on buccal mucosa

[Figure 1b] correlating with her chief complaint of burning sensation. These findings were indicative of oral involvement in her SLE and warranted further diagnostic evaluation and management.

Investigations

Laboratory investigations revealed significant abnormalities consistent with SLE. The patient's hemoglobin level was markedly low at 8.3 g/dL, indicating anemia, while her red blood cell count was reduced to 2.98 million/mm^3. The platelet count was 1.29 lakh/mm^3, falling at the lower end of the normal range. An elevated erythrocyte sedimentation rate (ESR) of 120 mm/h pointed toward ongoing systemic inflammation. Liver enzyme levels were elevated, with serum glutamic oxaloacetic transaminase at 153 U/L and serum glutamate pyruvate transaminase at 48 U/L, suggesting hepatic involvement or systemic inflammation. Hypoproteinemia was evident, with a total protein level of 4.6 g/dL, reflecting potential nutritional deficits or systemic disease. Serological findings showed a positive antinuclear antibody (ANA) test with a homogeneous pattern and elevated anti-double-stranded DNA (anti-dsDNA) antibody levels, both of which are hallmark indicators of active SLE.

Provisional diagnosis

The findings were consistent with SLE, presenting with chronic generalized gingivitis and erythematous oral lesions.

Management

The patient was prescribed topical corticosteroids to alleviate oral lesions and underwent oral prophylaxis and restoration of dental caries. Continuation of systemic therapy with hydroxychloroquine and corticosteroids was emphasized to manage her SLE effectively.

Case Presentation 2

A 35-year-old Indian female from Karnataka, India, presented with a 4-month history of intermittent pain and swelling in her oral cavity, particularly affecting the gingiva. She described recurrent episodes of oral discomfort, characterized by painful erythematous ulcerations primarily involving the buccal mucosa and tongue. Along with these oral symptoms, the patient reported generalized fatigue, hair loss (alopecia), and sensitivity to sunlight (photosensitivity), significantly impairing her overall quality of life. The persistence and severity of these symptoms prompted her to seek medical attention, raising concerns about a potential systemic condition.

Clinical findings

On clinical examination, a butterfly-shaped erythematous rash was observed across the malar region, a classic hallmark of SLE. This finding, combined with the patient's photosensitivity, strongly suggested systemic involvement. Vital signs, including blood pressure and pulse rate, were within normal limits, indicating stable general health despite the systemic condition. Extraoral examination revealed preauricular chronic cutaneous lupus resembling transient non-scarring hyperpigmentation [Figure 2a].

Intraoral examination revealed, non-specific gingival erythema [Figure 2b]. Palate depicts chronic well-defined papules with central erythema [Figure 2c], buccal mucosa depicted white plaque with lace-like striae interspersed with pigmentation with hyperkeratotic margins on the buccal mucosa and tongue [Figure 2d], corroborating the patient's complaints of oral pain and swelling. These findings were consistent with significant oral manifestations of SLE.

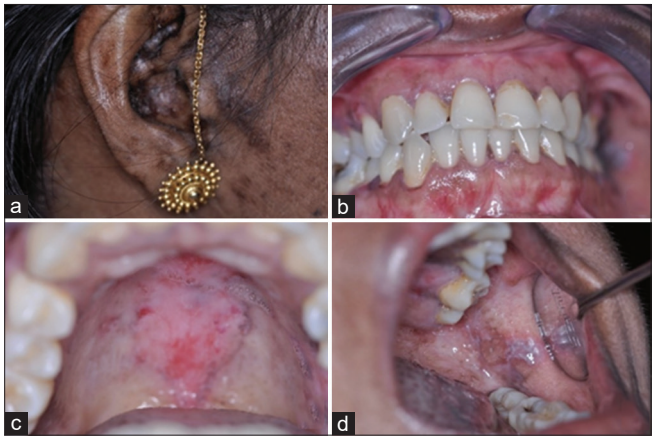

Figure 2: (a) Preauricular chronic cutaneous transient non-scarring hyperpigmentation, (b) non-specific gingival aerythema, (c) palate depicts chronic well-defined papules with central erythema, and (d) buccal mucosa reveals white plaque with lace-like striae interspersed with pigmentation with hyperkeratotic margins

Investigations

Laboratory investigations confirmed active SLE. The patient's hemoglobin level was reduced to 9.2 g/dL, indicating anemia, while an elevated ESR of 90 mm/h suggested ongoing systemic inflammation. Serological tests demonstrated a positive ANA test and elevated anti-dsDNA antibodies, hallmark indicators of SLE. Complement levels (C3 and C4) were found to be reduced, reflecting immune complex consumption and supporting the diagnosis of active disease.

Provisional diagnosis

The findings were consistent with SLE presenting with oral ulcerations and systemic manifestations.

Management

The patient was treated with topical analgesics and corticosteroids to alleviate the oral lesions. An antiseptic mouthwash containing chlorhexidine was prescribed to maintain oral hygiene and manage secondary infections. The patient was referred to a rheumatologist for comprehensive systemic management of SLE, ensuring a multidisciplinary approach to her care. Regular follow-ups were recommended to monitor the progression of symptoms and the effectiveness of the treatment plan.

Discussion

Oral manifestations are prevalent in SLE, with reported frequencies ranging from 8% to 45% in patients with SLE and from 4% to 25% in patients with discoid lupus erythematosus.[4] These lesions can present as erythematous patches, hyperkeratotic plaques, or ulcerations, often mimicking conditions such as lichen planus, leukoplakia, erythema multiforme, and pemphigus vulgaris.[5] The classic presentation is the oral discoid lesion, characterized by a well-demarcated zone of erythema, atrophy, or ulceration surrounded by white, radiating striae.[6] In the two cases presented, oral lesions were distinct, with one showing chronic erythematous papules and another presenting with white plaque interspersed with pigmentation, reflecting a spectrum of oral involvement in SLE. This highlights

the diverse clinical manifestations and the diagnostic challenges these lesions pose.

Accurate diagnosis of oral lesions is crucial, as these manifestations may not only precede systemic symptoms but also serve as early markers of disease activity, guiding timely management decisions. Recognizing such lesions requires a thorough differential diagnosis, which includes histopathological evaluation and serological testing, such as ANA and anti-dsDNA assays.

SLE treatment often includes medications such as hydroxychloroquine, corticosteroids, and immunosuppressants, which are associated with various side effects and drug interactions. Hydroxychloroquine, a mainstay of SLE management, can cause photosensitivity, retinopathy, and gastrointestinal discomfort. Corticosteroids, commonly used to control inflammation, carry risks of immunosuppression, weight gain, hypertension, and osteoporosis. The cases discussed here emphasize the need for individualized treatment approaches, considering both the systemic and oral manifestations to minimize adverse effects while maximizing therapeutic efficacy. Photosensitivity is a particularly common adverse effect, as both the disease and its treatments can heighten sensitivity to ultraviolet (UV) radiation. This poses a significant challenge for patients, as UV exposure can exacerbate skin lesions and systemic symptoms.

Strategies to mitigate these effects include the consistent use of broad-spectrum sunscreens with high SPF ratings, protective clothing, and minimizing UV exposure during peak sunlight hours. Regular ophthalmologic monitoring is recommended to detect early signs of retinopathy in patients on hydroxychloroquine, and dose adjustments may be necessary to minimize risk. These management strategies must be complemented by patient education, which plays a pivotal role in ensuring adherence to preventative measures and mitigating complications. Multidisciplinary coordination among healthcare providers is key to addressing both systemic and oral symptoms comprehensively.

Early detection of oral lesions is crucial, as they may precede other systemic manifestations of SLE.[7] Dentists play a pivotal role in identifying these early signs, facilitating prompt referral for comprehensive medical evaluation. The importance of a multidisciplinary approach cannot be overstated. Collaboration between dentists, rheumatologists, and other specialists ensures that both systemic and oral symptoms are managed effectively, improving patient outcomes.[8] This approach also underscores the need for regular dental assessments to monitor disease progression and reduce complications arising from oral manifestations.

Conclusion

Oral lesions are significant clinical markers in SLE and can serve as early indicators of the disease. Recognizing these lesions is critical for facilitating prompt diagnosis and initiating timely management, which can significantly improve disease outcomes and enhance the quality of life for patients. Dentists, as frontline healthcare providers, play a pivotal role in identifying these oral manifestations and referring patients for further evaluation. This case series highlights the necessity of a multidisciplinary approach in managing SLE, emphasizing the collaboration between dentists, rheumatologists, and other specialists to address both systemic and oral manifestations comprehensively. Early detection of oral lesions, coupled with coordinated care, is essential to optimizing patient outcomes. Oral lesions should never be overlooked in patients presenting with systemic complaints. Their identification and evaluation can be the first step toward diagnosing SLE, underscoring the need for a multidisciplinary and proactive approach to patient care.

Key Learning Points

- Early detection: Oral lesions can be early clinical markers of SLE and may precede systemic symptoms. Prompt recognition of these manifestations is critical for early diagnosis and intervention.
- Diagnostic challenges: The diverse presentation of oral lesions, often mimicking other conditions such as lichen planus or leukoplakia, underscores the importance of thorough differential diagnosis using clinical, histopathological, and serological evaluations.
- Role of dentists: Dentists play a pivotal role in identifying oral lesions, especially in patients with unexplained systemic symptoms. Timely referrals to medical specialists can facilitate early and comprehensive disease management.
- Multidisciplinary approach: Effective management of SLE requires collaboration between dentists, rheumatologists, and other healthcare providers.

A multidisciplinary strategy ensures that both systemic and oral manifestations are addressed, leading to better patient outcomes.

- Personalized treatment: Tailoring treatment to the individual needs of patients, considering both systemic and oral symptoms, helps in minimizing complications and maximizing therapeutic benefits.
- Education and prevention: Educating patients about their condition, treatment risks (e.g., photosensitivity and drug side effects), and preventative strategies is essential for enhancing adherence to treatment and improving long-term outcomes.

Statement

Written informed consent was obtained from all patients included in this case series. Confidentiality of patient information was strictly maintained throughout the study, and all identifiable details were anonymized to ensure privacy.

Authors Contributions

Shaul Hameed Kolarkodi: Literature search, collected data, analyzed data and images, and overall visualization of the manuscript. Nishana Mariyam: Conceived, designed, and supervised the study and derived results. Fareed Ahmed Bava: Data collection, statistical analysis, and the writing and editing of the manuscript. Anoop Kurian Mathew: Carried out the data curration process, investigation of the results, and review and editing of the manuscript. Jeslin James: Formal analysis, original draft preparation, writing review, and editing of the manuscript. All authors have read and agreed to the published version of the manuscript.

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Data Availability Statement

Not applicable.

Acknowledgments

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Conflicts of Interest

The authors declare no conflicts of interest.

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