CASE REPORT

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A Complex Case of Lichen Planus: Navigating Diagnostic Challenges and Therapeutic Dilemmas

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Abstract

Lichen Planus (LP) is a chronic inflammatory skin condition affecting 0.1-1 % of people globally, with a lower incidence in India. It typically appears as itchy, purplish papules or plaques on the skin, mucous membranes, and nails. Factors contributing to LP include genetic predisposition, immune system issues, psychological stress, and triggers like medications, infections, or environmental factors. Drug-induced exacerbations, though rare, can occur due to hypersensitivity or toxic effects. A 35-year-old woman sought medical help for itchy skin lesions present for 20 days. Examination revealed hyperpigmented violaceous plaques and papules on her limbs and back. Initial treatment included systemic corticosteroids, antihistamines, and topical therapies. However, five days later, she returned with worsened lesions, a burning sensation, and oral mucosa involvement, suggesting a drug-induced reaction. Further tests showed elevated serum potassium and transaminases, leading to her admission for inpatient care. This case highlights the risk of treatment-related exacerbations in lichen planus, emphasising the need for personalised therapeutic strategies. Medication- induced exacerbations can result from direct toxicity or immunological hypersensitivity, with corticosteroids, NSAIDs, and antimalarials being key contributors. Effective management should include stopping suspected medications, providing supportive care, and adjusting treatment based on symptom severity. International guidelines recommend immunosuppressive agents like cyclosporine or methotrexate for resistant cases, along with careful monitoring of treatment protocols. In summary, managing lichen planus involves weighing treatment effectiveness against medication risks. This case underscores the importance of ongoing monitoring and tailoring treatment strategies to align with evidence-based international guidelines for optimal patient outcomes.

Keywords: Comprehensive Case Management, Dermatological Disorders, Drug-Induced Exacerbation, Lichen Planus, Systemic Corticosteroids, Topical Steroid Therapy

1. Introduction

Lichen Planus (LP) is an uncommon, persistent inflammatory condition that primarily impacts the skin and mucosal areas, such as the oral cavity, nails, and hair. This immune-mediated disorder is distinguished by distinctive skin manifestations, which are characterised as planar, polygonal, purple, itchy papules and plaques. The defining characteristics of LP are encapsulated in the "rule of six P," a mnemonic that facilitates the clinical recognition of this disease[1,2].

Lichen planus predominantly impacts individuals in their middle age, specifically those aged between 30 and 60 years, exhibiting a comparable prevalence among both genders and across diverse ethnic backgrounds[3]. In contrast, oral lichen planus is observed more frequently, affecting approximately 2-5 % of the population, with a notably higher incidence in females. Conversely, cutaneous lichen planus is less common, with prevalence estimates varying from 0.22% to 1%[4,5].

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The manifestation of the disorder can differ considerably, with cutaneous involvement being the most apparent form. Mucosal symptoms, especially those affecting the oral cavity, are common and can greatly diminish a patient's quality of life. While the traditional presentation of lichen planus is observed on the skin and oral mucosa, it is also capable of affecting skin appendages, including nails and hair. The chronic and complex characteristics of lichen planus require thorough clinical assessment and management, particularly as its presentation can vary among individuals and across different ethnic groups. The epidemiological characteristics of this condition highlight the importance of adopting a patient-centred approach in both diagnosis and treatment.

Lichen Planus (LP) predominantly impacts middle-aged individuals, exhibiting no significant gender bias. Although the clinical manifestations are generally distinctive, it is advisable to obtain histological confirmation to rule out other possible diagnoses[6,7]. The hallmark features include a band-like lymphocytic infiltrate and interface dermatitis, which are consistent across various skin locations and disease subtypes. In addition to standard histological examination, direct immunofluorescence microscopy may reveal the presence of C3 and/or IgG at the dermal-epidermal junction, along with IgM deposits forming colloid bodies[8].

The primary objective of treatment is to manage symptoms and facilitate the healing of skin lesions. Treatment selection should consider the disease's severity, the intensity of subjective symptoms, and any relevant co-morbid conditions[7]. Typically, cutaneous LP is self-limiting, with over 50% of patients experiencing resolution within six months and up to 85% within eighteen months[7,9]. In contrast, mucosal LP tends to be chronic and may resist treatment efforts. Cases of LP characterised by hypertrophic skin lesions or isolated involvement of the nails or scalp are also frequently chronic. Persistent cutaneous and mucosal lesions are regarded as premalignant, necessitating regular follow-up for treatment adjustments and monitoring for potential malignancies[10].

This report provides an in-depth examination of a case involving lichen planus in a middle- aged woman, focusing on the clinical manifestations, diagnostic difficulties, and treatment approaches. Additionally, the case investigates the possibility of drug-induced aggravations and emphasises the necessity of a personalised management strategy that adheres to international standards of care.

2. Case Details

A 35-year-old female patient presented to the dermatology outpatient department with a 20- day history of pruritic skin lesions across her body. Upon examination, distinct hyperpigmented violaceous papules, plaques, and patches were noted on the lower and upper extremities and the back. No oral lesions were observed, prompting a diagnosis of Lichen Planus.

The treatment plan included initiating systemic corticosteroid therapy with Tab. Prednisolone 10 mg twice daily for two weeks, along with Tab. Calcirol (Vitamin D3) 600 IU once daily. Additionally, Tab. Ranitidine 20 mg twice daily to manage gastric irritation and Tab. Cetirizine 10 mg at bedtime for ten days to alleviate itching was prescribed. The patient was advised to apply a moisturising lotion (Aquasoft Cream 100 g) twice daily and use a topical steroid cream (Clobetasol Propionate 0.05%) on affected areas for two weeks. Follow-up in two weeks with CBC and LFT reports was planned.

After five days, the patient returned with complaints of new lesions appearing on her abdomen and thighs, a burning sensation over existing lesions for the past two days, and discomfort in the oral cavity while eating for one day. She also reported a low-grade fever, not associated with chills or rigours, on the fifth day.

General physical examination revealed mild pallor and bilateral non-pitting oedema over the lower limbs extending to the mid-calf. The patient's weight was 68 kg, and body surface area involvement was approximately 20%. Cutaneous examination showed multiple well-defined hyperpigmented to violaceous plaques with surrounding erythema on the upper limbs, back, and thighs. Multiple erythematous papules were noted on the back and abdomen. Oral mucosal examination revealed erythema and erosions on the buccal mucosa. Nail



Figure 1. Planus lesions located on the lower limb.



Figure 2. Clinical manifestation of lichen planus on the lower extremity.

examination revealed longitudinal ridges and thinning of the nail plate on the first and second toenails.

Figure 1 illustrates a detailed view of lichen planus lesions located on the lower limb, showcasing erythematous plaques accompanied by regions of hyperpigmentation and subtle scaling. The distinctive reticulated pattern is evident, reflecting the chronic inflammatory characteristics associated with this condition.

Figure 2 illustrates the clinical manifestation of lichen planus on the lower extremity, characterised by violaceous, hyperpigmented plaques and papules that exhibit a distinctive reticulated pattern. These lesions reflect the chronicity of the condition.

Systemic examination revealed mild tachycardia with a heart rate of 102 bpm and elevated blood pressure of 140/90 mmHg. No significant abnormalities were noted in the respiratory or abdominal systems. Based on the clinical picture, the patient was diagnosed with lichen planus with possible drug-induced exacerbation and was admitted to the female skin ward for further management.

Intravenous fluids (Normal Saline 500 ml) were started to maintain hydration. Comprehensive investigations, including CBC, LFT, RFT, and CRP, were performed. Results revealed a mild decrease in haemoglobin levels (10.2 g/dL, normal: 12-15 g/dL), elevated ALT (58 U/L, normal: <40 U/L), and an increase in serum potassium levels (5.6 mmol/L, normal: 3.5-5.0 mmol/L).

To manage the acute symptoms, Inj. Hydrocortisone 100 mg IV every 8 hours for 48 hours was initiated. Supportive care included Tab. Paracetamol 500 mg every 6 hours for fever and pain, Tab. Povidone-iodine mouthwash thrice daily for oral lesions, and a low-potassium diet. For the exacerbation of skin lesions, topical antibiotic ointment (Fusidic Acid) was applied twice daily to crust areas, and saline compresses were used on erythematous lesions.

The patient experienced a transient episode of dizziness, which was attributed to mild dehydration and corrected with oral rehydration therapy. No drug allergies were reported during the hospital stay. After seven days of treatment and monitoring, the patient showed significant improvement in the skin and oral lesions, reduced pruritus, and resolution of systemic symptoms.

The patient was discharged with instructions to continue topical and systemic medications, maintain a salt-restricted and low-potassium diet, and perform daily moisturization of affected areas. Follow-up was scheduled in one week, with instructions to repeat blood tests, including CBC, LFT, and electrolytes, before the appointment. A Counselling session on avoiding potential irritants and adhering to the prescribed regimen was conducted before discharge.

3. Discussion

Lichen planus is a persistent inflammatory condition that impacts multiple regions of the body, such as the skin, mucous membranes, nails, and hair follicles. The defining clinical characteristics of LP are pruritic, purplish papules and plaques, which can be remembered through the mnemonic known as the "six P's": polygonal, papules, purple, pruritic, planar, and plaques[1,2]. While the exact mechanisms underlying LP remain incompletely understood, it is regarded as an immune-mediated disorder that may be initiated by factors such as infections, certain medications, and psychological stress.

A 35-year-old female patient exhibited hyperpigmented violaceous papules and plaques on her extremities and back, which are characteristic of cutaneous lichen planus. However, the swift worsening of her lesions following the initiation of corticosteroid treatment, along with systemic manifestations including low-grade fever and hyperkalemia, deviates from the typical presentation. This unusual progression suggests the potential for a drug-induced lichenoid reaction, a recognised but infrequent variant of LP. Drug-Induced Lichen Planus (DILP) frequently manifests with extensive lesions and systemic involvement, often precipitated by medications such as Non-Steroidal Anti-Inflammatory Drugs (NSAIDs), anti- hypertensives, and antimalarials[1]. Topical treatments, particularly high-potency corticosteroids, are recognised as the primary

therapeutic approach for lichen planus. In the case of this patient, the application of topical corticosteroids played a significant role in the resolution of lesions, aligning with the findings reported in the literature. A comprehensive review by Richard P. Ustine[11] addressing the management of LP highlights the effectiveness of high-potency topical corticosteroids in managing localised manifestations of the disease.

Corticosteroids are commonly employed as a treatment for lichen planus; however, there have been rare instances of paradoxical reactions associated with their use. A notable case report by Nidhi K[12] highlighted a patient suffering from hypertrophic LP who exhibited a worsening of lesions after receiving corticosteroid treatment. This situation emphasises the importance of vigilant monitoring throughout corticosteroid therapy.

The manifestation of erythema and erosions in the oral mucosa of this patient aligns with the characteristics of Oral Lichen Planus (OLP). The chronic nature of OLP, coupled with its risk for malignant transformation, presents significant management challenges. A documented case report by Ramesh Gupta[13] has underscored the intricacies involved in treating erosive OLP, thereby highlighting the importance of consistent monitoring and the necessity for biopsy of any lesions that appear suspicious.

The differential diagnosis of lichen planus encompasses a wide range of conditions, including but not limited to psoriasis, chronic cutaneous lupus erythematosus, secondary syphilis, and pityriasis rosea. A histopathological analysis that demonstrates a band-like infiltrate of lymphocytes along with interface dermatitis provides significant evidence in favour of a diagnosis of LP[14].

Acute exacerbation of symptoms requires the evaluation of alternative conditions, such as drug-induced lichenoid reactions and autoimmune blistering diseases. The observed improvement following modifications in treatment supports the diagnosis of lichen planus, suggesting a potential drug-induced aggravation of the condition[15].

Systemic corticosteroids play a crucial role in managing moderate to severe lichen planus. In the present instance, the worsening of symptoms after corticosteroid administration necessitated a re-evaluation of the therapeutic strategy. The reinstatement of systemic hydrocortisone during the hospital stays, combined with supportive measures, resulted in notable clinical improvement, indicating that elements beyond corticosteroid treatment might have influenced the initial symptom exacerbation. This observation is consistent with the European S1 guidelines, which advocate for the use of systemic corticosteroids in severe LP

cases while emphasising the importance of tailoring treatment to the individual patient's needs[7].

In situations where drug-induced exacerbations are suspected, it is essential to recognise and cease the use of the implicated medication. The patient's positive reaction to modifications in treatment highlights the significance of personalised therapeutic approaches, consistent monitoring, and strict compliance with established protocols for the management of LP.

4. Conclusion

Lichen planus presents a significant challenge in dermatology due to its varied clinical presentations and the complexities associated with treatment. This case emphasises the necessity of identifying atypical manifestations, including those exacerbated by medications and instances of systemic involvement, which demand heightened clinical awareness and individualised treatment approaches. The patient's positive response to customised therapies illustrates the critical importance of careful monitoring for adverse reactions and the ongoing evaluation of treatment plans to enhance patient outcomes. Although systemic corticosteroids and topical treatments are commonly employed, their unexpected effects in specific situations, as demonstrated in this case, highlight the need for exploring alternative therapeutic strategies.

Future investigations should aim to elucidate the immunopathogenic mechanisms underlying lichen planus to gain a deeper insight into its triggers and progression. The identification of biomarkers for diagnosis, monitoring, and predicting treatment responses has the potential to transform patient management significantly. Innovative treatment options, including biologics and targeted small molecules, offer promising avenues for addressing refractory and severe cases; however, additional clinical trials are warranted to establish their efficacy. Furthermore, the premalignant nature of mucosal LP underscores the necessity for consistent follow-up and proactive screening to reduce long-term risks. This case highlights the crucial need for personalised, multidisciplinary approaches and the incorporation of emerging research findings to enhance management strategies for LP moving forward.

Declaration of Patient Consent: The authors affirm that they have secured the necessary consent from the patient. The patient has granted permission for the inclusion of their clinical information in the publication. Furthermore, the patient was aware that her name and initials would remain confidential, and appropriate measures would be taken to protect her identity.

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Author Contribution

SS, SMP, LSV, CS, RK, and SS contributed to the conception and design of the case report, patient data collection, clinical assessment, and literature review. PKY contributed to data interpretation, drafting of the manuscript, and critical revision for important intellectual content. RRN provided overall supervision, expert guidance, and critical review of the manuscript. All authors have read and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

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