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Case Report

Lichenoid Drug Eruption Secondary to Systemic Antibiotics: Case Report

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Abstract: Cutaneous lichenoid drug eruption (LDE) is a rare but increasingly common adverse drug reaction (ADR), often challenging to diagnose due to its clinical and histological resemblance to lichen planus (LP). We report the case of a 57-year-old man with a lichenoid eruption likely secondary to systemic antibiotics. He presented a widespread pruritic dermatosis, characterized by dark brown, lichenified plaques, particularly in the axillary folds. A punch biopsy revealed lamellar hyperkeratosis, mild acanthosis, vacuolization, and a moderate infiltrate of lymphocytes, histiocytes, and eosinophils in the superficial dermis, compatible with LDE. LDE is typically triggered by various medications, and its pathogenesis involves T-cell-mediated autoimmune damage to altered basal keratinocytes. Treatment involves discontinuing the offending drug, though recovery may take weeks to months. Corticosteroids, both topical and systemic, may be required in severe cases or when drug cessation is not feasible. This case emphasizes the importance of recognizing LDE, particularly in patients on multiple medications, to ensure prompt diagnosis and management.

Keywords: Lichenoid drug eruption, adverse drug reaction, lichenoid dermatitis, lichenoid reaction, lichenoid rash, lichen planus, interphase dermatitis, immune checkpoint inhibitors.

INTRODUCTION

Cutaneous lichenoid drug eruption (LDE) is a rare but increasingly common adverse drug reaction (ADR). Its diagnosis can be difficult due to clinical and histological similarities with lichen planus (LP), and in many cases it can be challenging to identify the responsible medication, especially since symptoms often appear after a significant delay and can take time to resolve, even after stopping the offending drug [1, 2]. We present the case of a 57-year-old man with a LDE likely secondary to systemic antibiotics, which we consider relevant due to its complex diagnostic process and the potential for a wide variety of medications to trigger this reaction.

CASE REPORT

A 57-year-old man with a history of type 2 diabetes treated with insulin, in long hospital stay due to a supracondylar amputation of the right lower limb and complicated by stump infection, for which he received multiple antibiotic regimens. He developed widespread dermatosis on the anterior and posterior trunk and upper extremities, predominantly in the axillary folds, characterized by 1 mm papules and vesicles, which coalesced into dark brown plaques with a lichenified appearance (Figure 1), highly pruritic. LED was suspected, but the culprit could not be identified due to the use of multiple medications (ceftriaxone, clindamycin, levofloxacin, metronidazole, vancomycin and meropenem)

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during his hospitalization. Punch biopsy revealed lamellar hyperkeratosis, epidermis with mild acanthosis, discrete foci of vacuolization and isolated dyskeratotic cells. In the superficial dermis, a moderate linear infiltrate was observed, composed of lymphocytes, histiocytes, and some eosinophils (Figure 2). These findings are consistent with the diagnosis of lichenoid drug eruption. Systemic steroids (50 mg of prednisone daily for 10 days, followed by a dose-reduction schedule) and antihistamines (10 mg of diphenhydramine intravenously every 8 hours for 7 days) were prescribed though lesions persisted for at least one week after treatment began leaving post-inflammatory hyperpigmentation.

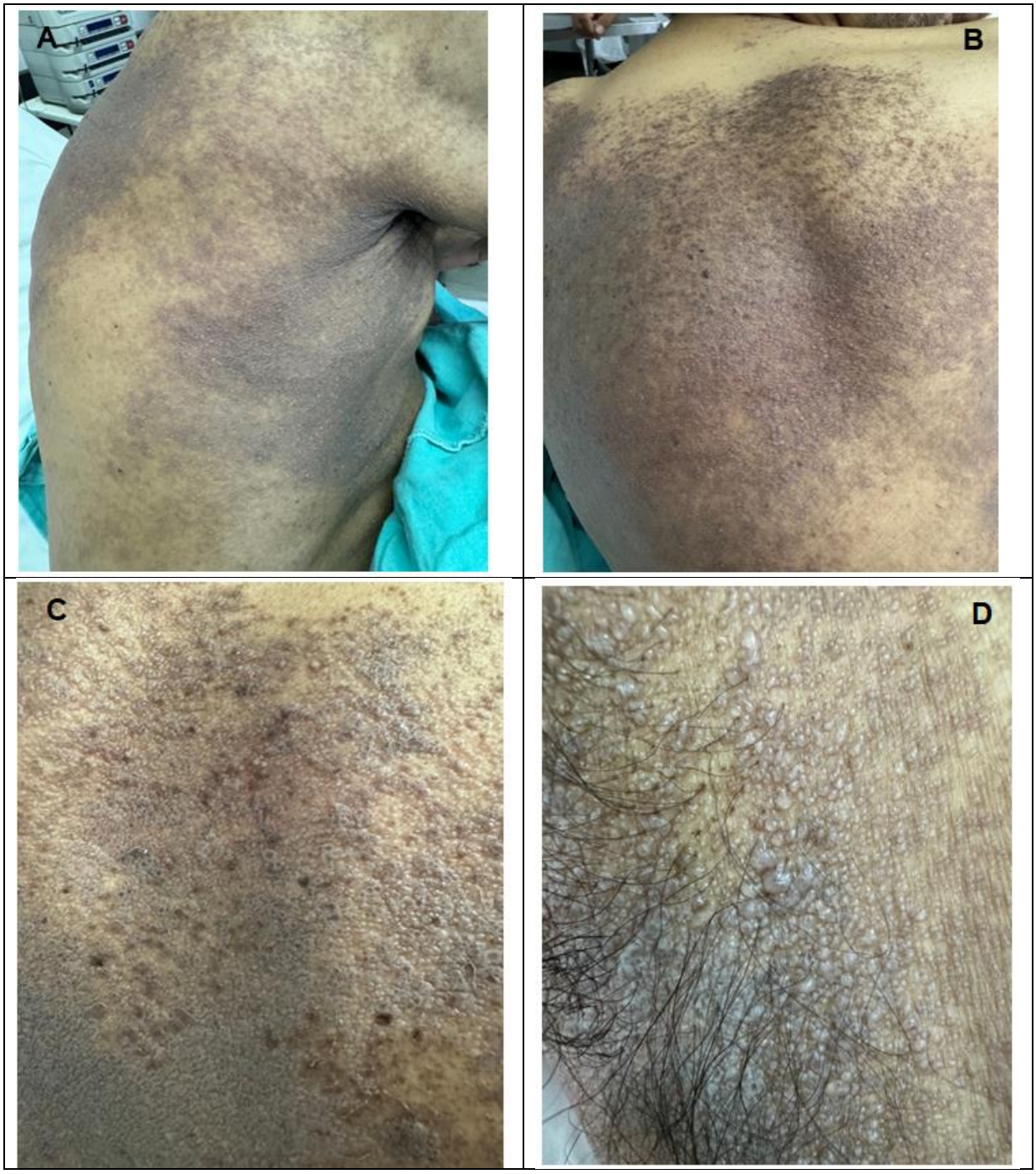

Figure 1: Clinical presentation of the previously described patient. A, B, C and D. Macroscopic images showing millimetric papules and vesicles, predominantly in the axillary folds and scattered across the trunk and upper extremities, coalescing into dark brown plaques with a lichenified appearance

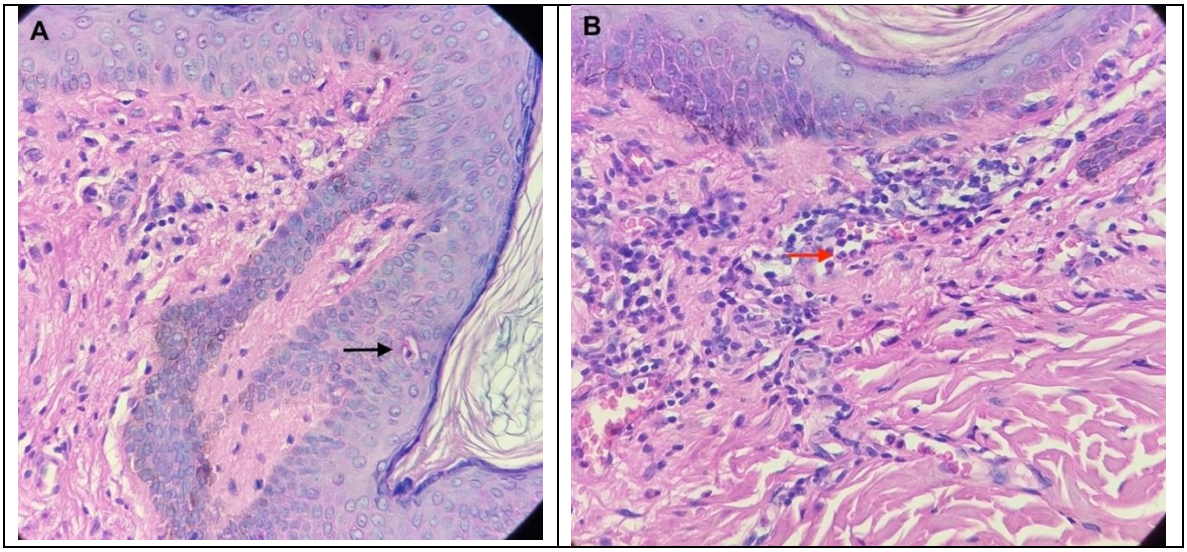

Figure 2: Histological findings in punch biopsy, hematoxylin-eosin staining. A. Epithelium shows some dyskeratotic cells (black arrow), and in the dermis, a lymphocytic infiltrate is present. B. Detail of the lymphocytic infiltrate in the superficial dermis. Multiple eosinophils (red arrow) and dilated, congested capillaries are identified

DISCUSSION

LDE is a rare ADR, with studies reporting a prevalence of 1.9% to 6% [3]. It can occur with a wide variety of medications, most commonly associated with diuretics, beta-blockers, angiotensin-converting enzyme inhibitors, methyldopa, antimalarials, and gold salts. In recent years, however, its prevalence has been rising due to the use of tyrosine kinase inhibitors (TKIs), immune checkpoint inhibitors (ICIs), and biologic drugs [1, 4, 5].

LDE pathogenesis is not fully understood, but it is believed to involve T-cell-mediated autoimmune damage to basal keratinocytes, which are altered by the offending drug [5, 6].

Clinically manifests as red to violaceous, scaly or psoriasiform papules or plaques, symmetrically distributed, typically involving the trunk and extensor surfaces of the limbs [7]. The eruption is intensely pruritic and, in some cases, may present with a photodistributed pattern [8].

Unlike idiopathic LP, LDE is less likely to involve flexural areas, mucous membranes, or genital area [5], Wickham striae are rarely observed [6, 8].

LDE can have much longer latency periods between drug initiation and the onset of symptoms compared to other ADRs, with delays of several months or even years. Lesions typically resolve within weeks after discontinuing the causative drug [1, 3, 5, 6, 9], leaving post-inflammatory hyperpigmentation [4, 6, 8].

Histopathologically, LDE can present features difficult to distinguish from typical LP, particularly when the lesions are photodistributed [2, 6], however, certain clues suggest a drug-related cause, including the presence of parakeratosis, disruption of the granular layer, dyskeratotic cells in the cornified or granular layers, and an inflammatory infiltrate with eosinophils, which may also extend to the deep vascular plexus [2, 9–13] .

Biopsies of ICI-related lichenoid eruptions often display a mixed CD4+/CD8+ or predominantly CD4+ T-cell infiltrate, and show a higher concentration of CD163+ cells, suggesting involvement of the macrophage-monocyte lineage [14].

Besides LP, other dermatoses should be considered in the differential diagnosis. Cutaneous lupus erythematosus and keratosis lichenoides chronica (KLC) can also resemble LDE [6], but can be differentiated due to typical perivascular and periappendageal infiltrates and mucin deposits of lupus [10], and KLC has a unique linear and reticular pattern, characterized by an inflammatory infiltrate primarily composed of lymphocytes, histiocytes, and plasma cells, along with a clinical presentation of facial eruptions similar to seborrheic dermatitis [5, 6].

Treatment of LDE involves identifying and discontinuing the culprit drug, which usually leads to clinical resolution of lesions, though full recovery may take weeks to months [4, 5]. Topical corticosteroids are useful when

discontinuing the medication is not feasible, such as in cancer or tuberculosis treatments. In cases of oral mucosa involvement or severe presentations, systemic corticosteroids may be necessary if topical treatment alone is insufficient [6], as well as steroid-sparing immunosuppressive agents or acitretin [14].

CONCLUSION

Although rare, LDE is increasingly recognized as an adverse drug reaction, often mimicking other dermatoses mainly lichen planus. Accurate diagnosis requires a thorough clinical history, biopsy, and awareness of potential histopathological findings, such as the presence of dyskeratotic cells, vacuolization of basal cell layer and eosinophils in inflammatory infiltrates. Treatment typically involves discontinuing the offending drug, but topical and systemic corticosteroids may be necessary when this is not possible or in more severe cases. This case highlights the diagnostic challenges associated with LDE, especially in patients exposed to multiple medications.

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