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Case Report

# Lichenoid Drug Eruption Induced by Dapsone

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## Abstract

Lichenoid Drug Eruptions (LDE) are a common adverse effect of large variety of drugs. The exact pathogenesis of LDE is not established. Both toxic and allergic pathways are implicated. It is characterized by an extensive symmetric eruption of flat-topped violaceous plaques involving the trunk and extremities, and usually occur with a latent period of few weeks to several months LDE is clinically similar to idiopathic lichen planus, and cannot be distinguished histopathologically except for the presence of eosinophilic infiltrate. Cessation of the causative drug remains the mainstay of the treatment for lichenoid drug eruption. To our knowledge, we present the first case of generalized LDE secondary to dapsone.

**Keywords:** Dapsone; Lichenoid Drug Eruption; Pharmacovigilance

## Introduction

Lichenoid drug eruption is an entity that can occur after administration of numerous medications [1]. LDE is a rare cutaneous adverse effect of dapsone. Dapsone is a sulfone discovered in 1908. Since the 1940s, it is the gold standard in the treatment of leprosy. Dapsone indications have been extended to inflammatory dermatoses and other infections. These indications are based on its antibiotic and immunomodulatory effects [2]. Herein we report a case of generalized LDE in a 34 - year - old women after initiation of dapsone for management of an acquired epidermolysis bullosa, which resolved after cessation of the drug and application of topical steroids.

## Case Presentation

A 34-year-old Moroccan woman, without a personal history of diabetes or chronic disease, nor any special chirurgical or psychosocial background or toxic habits. She was recently diagnosed with acquired epidermolysis bullosa. She was treated by Disulone at a dose of 100 mg / day with complete regression of bullous lesions. After 12 days of treatment, she developed diffuse pruriginous erythematous lesions. She complained myalgia, arthralgia and headache. A clinical examination showed a well-oriented, febrile, dyspneic patient, with normal cardiac frequency, regular blood pressure and cyanotic appearance of the lips. She presented several erythematous well limited, patches, of varying size, associated to multiples keratotic erythematous papules with erosions covered by hemorrhagic crusts, dispersed to the trunk and limbs with adherent whitish scales [Figure 1].

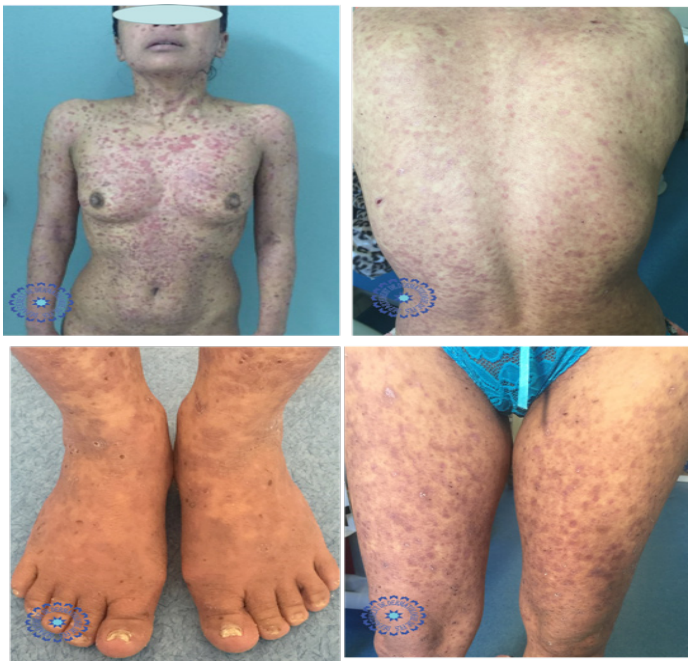

**Figure 1:** Generalized Lichenoid drug eruption in a 34 - year - old women after initiation of dapsone.

As well as, cicatricial macules, without involvement of the mucous membranes or palpable lymphadenopathy. Hospitalization with interruption of Dapsone was indicated. A skin biopsy was performed. Histological examination revealed an epidermal hyperplasia, focal hypergranulosis, hydropic degeneration of the basement membrane zone and lichenoid lymphocytic infiltrate in the papillary dermis [ Figure 2] The biological assessments were normal, particulary methemoglobulinemia. The declaration to pharmacovigilance had incriminated Disulone. The imputability of dapsone Disulone® was retained with an I4B4 accountability score at a high level of informativeness NI2. A treatment with topical steroids has been initiated. Clinical symptoms healed gradually after stopping Dapsone. At one week of treatment, a significant improvement with complete regression of the lesions.

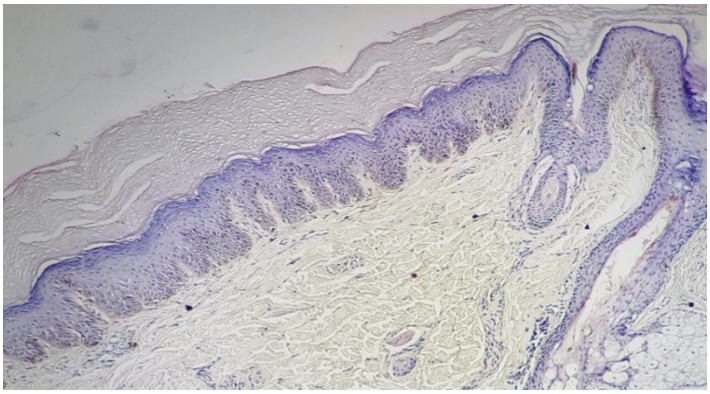

**Figure 2:** Histological findings showing an epidermal hyperplasia, focal hypergranulosis and lichenoid lymphocytic infiltrate in the papillary dermis.

## Discussion

Lichenoid Drug Eruptions (LDE) are a common adverse effect seen with inhalation, contact or systemic administration of large variety of drugs including antimalarials, antihypertensives, nonsteroidal anti‐inflammatory drugs, diuretics and gold salts [3]. To the best of our knowledge, we present the first case of dapsone-induced LDE. For 60 years, dapsone has been used as a both antibacterial and anti- inflammatory agent [4]. Dapsone (4,4'-diaminodiphenylsulfone, DDS) continues to be used successfully to treat a wide range of dermatologic disorders [2], notably those characterized by abnormal neutrophil and eosinophil polynuclear accumulation. A considerable number of other inflammatory as well as bullous dermatoses, of which dermatitis herpetiformis is the best known, have been shown to respond in varying degrees to dapsone, although the indication for the molecule has not been demonstrated in of them all [4]. The pathogenesis of lichenoid drug eruptions is thought to be T‐cell mediated autoimmune damage to basal keratinocytes that are altered by the drug. Resolution of the rash occurs once these altered keratinocytes are cleared [3]. Clinically, LED is characterized by an extensive symmetric eruption of flat-topped violaceous plaques involving the trunk and extremities [5]. Lesions of LDE are, violaceous papules and plaques [6], often larger in size, less monomorphic and more prone to be eczematous and associated with desquamation in contrast to that of lichen planus. They often spare the nails, oral and genital mucosae [1]. Also, the absence of Wickham's striae, photodistribution and a temporal association with drug intake help to differentiate the two [3]. Lichenoid drug eruptions usually occur with a latent period of few weeks to several months [6]. Histologically, all the features of lichen planus can be seen in lichenoid drug eruptions [7], but Clues to the drug-induced etiology include epidermal parakeratosis, absence of wedge-shaped hypergranulosis, transepidermal necrotic keratinocytes, deeper mid-dermal perivascular and peri-adnexal infiltrates, and the presence of eosinophils [5,8,9]. In our case, the anamnestic, clinical data and the short time after drug administration, advocated a syndrome of hypersensitivity to Disulone. However, the rash and the histology made it possible to retain the diagnosis. Cessation of the causative drug remains the mainstay of the treatment for lichenoid drug eruption. Mild cases may be managed by topical corticosteroids and systemic anti‐histamines while in severe cases, administration of systemic corticosteroids may be required [3]. The patient was treated with colchicine 1 mg daily.

## Conclusion

Recognizing this rare form of disease in its early form helps to prevent morbidity and mortality. The diagnosis of lichenoid drug eruption is based on a bundle of clinical, histological, pharmacological and evaluative arguments. The most reported side effect is the dapsone hypersensitivity syndrome, we report a very unusual toxicity.

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