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Acropigmentation of the Dorsum of the Hands From Preparing Mojitos: A Lime-Induced Phytophotodermatitis[☆]



Acropigmentación dorsal por elaboración de mojitos: una fitofotodermatitis por lima

To the Editor:

Phytophotodermatitis was described in 1942 by Klaber¹ as a skin reaction to exposure to sunlight after previous contact with plants. It is caused by a phototoxic reaction to furocoumarins and anthraquinone derivatives. The plant species that most commonly induces this type of reaction is celery (family Umbelliferae), followed by lime and lemon (family, Rutaceae).

We present a series of 9 patients with similar clinical manifestations consisting of irregular homogeneous pigmentation on the dorsum of the hands (Figs. 1 and 2). The

epidemiological characteristics of the patients are summarized in Table 1. Patients were aged between 14 and 41 years (mean [SD], 25.5 [9.8] years). The lesions were asymptomatic and there were no signs of eczema. A common finding in the history of all patients was the preparation of mojitos, with an interval of 7 to 14 days in the majority of cases between exposure and onset of the lesions. A curious finding was that none of the patients associated the onset of their lesions with the preparation of the mixture, and they were all surprised on being asked if they had prepared this drink in previous days.

We propose the term “dorsal acropigmentation secondary to mojito preparation” to define a variant of occupational phytophotodermatitis or phototoxicity on the dorsum of the hands (Fig. 1) of waiters who prepare cocktails



Figure 1 Asymptomatic, homogeneous hyperpigmentation that developed on the dorsum of the thumbs of both hands of a patient several days after preparing mojitos at a beach party.



Figure 2 Irregular hyperpigmentation that developed on the dorsum of both hands of a patient 3 days after serving mojitos at a wedding and followed by intense sunlight exposure in adjacent gardens.

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Table 1 Epidemiological Characteristics of the Patients With Dorsal Acropigmentation Secondary to Mojito Preparation.

Patient No.	Sex	Age	Past History	Professional Preparation of Mojitos	Time Interval Between Exposure and the Onset of the Manifestations
1	Female	23	No	No	7 d
2	Female	25	Dust mite allergy	No	7 d
3	Female	31	Peach allergy	No	7 d
4	Female	19	Dust mite allergy	No	21 d
5	Male	41	No	No	10 d
6	Male	40	No	No	10 d
7	Female	21	No	No	7 d
8	Female	14	No	No	14 d
9	Female	16	No	No	14 d

with lime, such as mojitos. This cocktail, ever more popular in Spain, is prepared with rum, sparkling water, mint, sugar, and lime. As this is not an immune reaction, no previous sensitization is required and anyone can be affected.

Lime-juice-induced phytophotodermatitis is well-known. This fruit, which belongs to the Rutaceae family, contains photosensitizing compounds, the main ones being bergapten and psoralen,² with highest content in the skin of the fruit.³ The mechanism of phototoxicity observed with these furocoumarins has been described in detail. Typically, lime induces a phytophotodermatitis that presents acutely with erythema and the formation of vesicles at 12-36 hours after exposure of the psoralen to UV radiation and is occasionally painful. The acute phase usually produces hyperpigmentation, depending on the case, but scarring is very rare. Onset of the dermatitis varies between hours and days after contact with the lime contained in the mojito and exposure to the sun. The cause of pigmentation may be melanocyte stimulation or a mechanism secondary to melanocyte damage that induces pigment incontinence.³ Symptomatic treatment is sufficient in most cases.

Some cases of lime-induced phytophotodermatitis have been associated with the custom of using lime when drinking certain types of Mexican beers.⁴ The fruit is used in cooking, though recently it has become very popular as an ingredient in certain cocktails, such as the mojito.⁵ In our patients, lime was the etiological agent of this phytophotodermatitis in amateur or professional bar staff who were exposed to sunlight after preparing mojitos, a Cuban drink invented during the era of Prohibition in the United States, when those who wanted to drink alcohol legally had to travel out of the country; Cuba became one of the favorite destinations.

The differential diagnosis and the medical history of these types of lesion should rule out contact with figs, lemons, geraniums, and St. John's wort, as other causes of phytophotodermatitis, and it is important to determine whether the person is involved in the preparation of mojitos, in an amateur or a professional setting. It must not be forgotten that, because of the polymorphism of this type of phototoxicity, there are numerous differential diagnoses,

including Berloque dermatitis due to oil of bergamot contained in perfumes, frictional dermatitis, and even sexual abuse.^{6,7}

Conflicts of Interest

The authors declare that they have no conflicts of interest.

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Melanoma With Meyerson's Phenomenon: Clinical and Dermoscopic Features[☆]



Melanoma con fenómeno de Meyerson: características clínicas y dermatoscópicas

To the Editor:

We present a 75 year-old woman with a history of venous insufficiency of the lower extremities. She consulted for a lesion that had arisen on her left ankle a year earlier and that had become erythematous and pruritic during the week prior to consultation. Physical examination revealed a slightly elevated, dark blue and brown lesion that was asymmetric and had poorly defined borders. It measured 1 cm in diameter. The lesion was surrounded by a halo of eczema and desquamation, and the region was edematous and presented varicose blood vessel dilatations (Fig. 1). The provisional diagnoses included an ecchymotic lesion associated with dermatitis secondary to venous stasis or a melanocytic lesion with halo eczema (Meyerson phenomenon).

A blue-whitish veil was observed on dermoscopy and there were irregularly distributed, structureless brown and black areas (Fig. 2A). Patches of glomerular vessels and dotted vessels and fine whitish desquamation were observed in the area of the halo (Fig. 2B).

The dermoscopic findings elevated our suspicion of a melanocytic lesion, specifically malignant melanoma with halo eczema, and excision biopsy was therefore performed. Histology of the lesion revealed a proliferation of atypical melanocytes with a radial and vertical growth phases, intraepidermal melanocyte migration, and nests and irregular plaques that infiltrated the papillary dermis (Fig. 3A). These atypical cells had large and irregular nuclei, with prominent nucleoli and occasional intranuclear vacuoles (Fig. 3B). The adjacent epidermis presented acanthosis with moderate spongiosis, lymphocyte exocytosis, and hyperkeratosis, associated with a perivascular mononuclear inflammatory infiltrate in the dermis (Fig. 3C). This confirmed the diagnosis of superficial spreading melanoma with Meyerson phenomenon and a Breslow depth of 1.12 mm. No ulceration, regression, blood or lymph vessel invasion, or neurotropism were observed, and the mitotic index was low.

Halo eczema or Meyerson phenomenon is a symmetric area of erythema and desquamation that surrounds a central lesion; it can be pruritic or asymptomatic. A number of hypotheses have been proposed regarding the etiology and pathogenesis of this phenomenon, the main one of which suggests an immune response with a predominance of CD4⁺ lymphocytes over CD8⁺ lymphocytes.¹ The phenomenon was first described in acquired melanocytic nevi, but there have since been reports in all types of melanocytic nevi (congenital, dysplastic) and even in nonmelanocytic lesions such as basal cell carcinoma, squamous cell carcinoma, and seborrheic keratosis.^{1,2} Rodins et al.¹ were the first to report a Meyerson phenomenon in an in situ melanoma, and later Ferneiny et al.³ described the finding in a superficial spreading melanoma with a Breslow depth of 0.75 mm.

The few studies that have been performed on the dermoscopy of melanocytic lesions with halo eczema suggest that the inflammatory phenomenon does not affect or mask visualization of dermoscopic structures and criteria, and thus does not interfere with correct identification of these signs.^{2,4} In our case, the presence of a blue-whitish veil and of structureless areas suggested the diagnosis of melanoma.

Dotted vessels, distributed in patches, and yellowish scale crusts, similar to the findings of halo eczema in our case, are observed on dermoscopy in all types of dermatitis.⁵ Ecchymoses present a homogeneous pattern of structureless purpuric areas on dermoscopy,⁶ allowing us to exclude this diagnosis in our patient.

After reviewing the literature, we believe this is the first case in which the dermoscopic features of an invasive melanoma with Meyerson phenomenon are described. We agree with the authors cited above^{1,3} that this phenomenon



Figure 1 Clinical presentation. Elevated, asymmetric, dark blue and brown lesion with poorly defined borders and a diameter of 1 cm; the lesion is surrounded by halo eczema with desquamation. Background of edema and varicose blood vessel dilatation.

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