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Palmar-plantar lichen planus. Case report

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HeLichen planus is an inflammatory, pruritic disease affecting the skin and mucous membranes, characterized by typical violaceous papules with polygonal borders, fine scales, and Wickham's striae, with a predilection for the limbs and trunk, of unknown etiology. Clinical case: We describe the case of a 35-year-old woman with a history of migraines who, after receiving the influenza vaccine, began to develop intense itching and pain on the fourth day. These lesions consisted of purplish-red areas along the entire margin of both calcanei, with papules on the soles of both feet, palms of the hands, and isolated lesions on the arms and legs. A skin biopsy of one of the papular lesions was performed, which led to a diagnosis of palmar-plantar lichen planus. Lichen planus rarely presents with exclusive involvement of the palms and/or soles. In such cases, the clinical presentation is



nonspecific, and only a biopsy confirms the diagnosis. Palmoplantar lichen is an uncommon variant; the novel aspect of this case is its appearance following administration of the Cuban influenza vaccine, which acted as a triggering factor despite the condition's unknown cause. The lesions gradually improved and subsequently disappeared.

Keywords: Lichen Planus; Palmo-Plantar; Vaccine.

ABSTRACT

Lichen planus is an inflammatory, pruritic disease that affects the skin and mucous membranes. It is characterized by typical violaceous, polygonal papules with fine scales and Wickham striae, predominantly affecting the limbs and trunk, with an unknown etiology. Clinical case: This report describes the case of a 35-year-old woman with a history of migraines who, four days after receiving the influenza vaccine, began to develop skin lesions with intense itching and pain. These manifested as red purpuric lesions along the edges of both heels, along with papules on the soles of both feet, palms of the hands, and isolated areas on the arms and legs. A skin biopsy of one of the papular lesions revealed a diagnosis of palmoplantar lichen planus. It is rare for lichen planus to initially present with exclusive involvement of the palms and/or soles. In such cases, the clinical presentation is nonspecific, and only a biopsy confirms the diagnosis. Palmoplantar lichen planus is an uncommon variant. What is novel in this case is its onset following administration of the Cuban influenza vaccine, which acted as a triggering factor despite the disease's unknown cause. The lesions gradually improved and eventually disappeared slowly and progressively.

Keywords: Lichen Planus; Palmoplantar; Vaccine.

SUMMARY

Lichen planus is an inflammatory and pruritic disease that affects the skin and mucous membranes, characterized by papules typical of violet color, polygonal contours, fine scales and Wickham's striae, with a predilection for member hairs and trunk, of unknown etiology.



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Case report: This is the case of a 35-year-old woman with a history of Enxaqueca who, four days after receiving the flu vaccine, began to present skin lesions with intense itching and pain, consisting of purple, yellow-tinted lesions around both feet, with papules on both soles. Press, palm your hands, and in isolation your arms and legs. A biopsy of a papular lesion was performed, which confirmed the diagnosis of palmo-plantar lichen planus. Rarely, lichen planus initially manifests itself as an exclusive attack on palms and/or plants. In these cases, the clinical presentation is not specific and only a biopsy confirms the diagnosis. The palmo-plantar lichen planus is an incomum form. The unprecedented aspect of this case is its emergence following the administration of the Cuban flu vaccine, which acted as a triggering factor, despite being an entity with an unknown cause; with evolution for better and subsequent disappearance of skin lesions slowly and gradually.

Key words: Lichen Planus; Palmo-plantar; Cow.

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Introduction

Lichen planus (LP) is an inflammatory, pruritic disease affecting the skin and mucous membranes, characterized by typical violaceous papules with polygonal borders, fine scales, and Wickham's striae, with a predilection for the limbs and trunk. Its etiology is unknown. It affects 2% of the population, with no difference between sexes, and typically occurs between the ages of 30 and 70 years (1,2). It can be seen in children, but very rarely. It is found worldwide, and its prevalence is unknown, but is estimated at 0.22% to 1% of the adult population worldwide. (2)

The pathogenesis is not well defined; several causes have been proposed: viral or bacterial



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infections as triggering factors, neurogenic factors such as psychological stress, alterations in the cell-mediated immune response, and genetic factors. (1) Cases have been observed related to medications, vaccination, hepatitis B virus, as well as influenza virus and herpes zoster. (2)

They are classified according to their location and clinical forms, including the palmoplantar; an infrequent location for their onset, with almost exclusive involvement of these anatomical regions, the clinical presentation is nonspecific and a skin biopsy is the confirmatory diagnostic study. (3)

Case presentation

This is a 35-year-old female patient, from an urban area, a nursing student, with mixed-race skin. She has no record of drug hypersensitivity. Her history includes migraines and a dystocic delivery six years prior. Following administration of the influenza vaccine in September 2024, on the fourth day, she developed skin lesions on the lateral borders of both heels and soles of her feet, followed by lesions on the palms of her hands, accompanied by itching and pain. Days later, isolated lesions appeared on her arms, thighs, and legs. She consulted a dermatologist, who ordered blood tests, serology, HIV testing, hepatitis B and C surface antigen testing, and a skin biopsy, with a presumptive diagnosis of palmoplantar lichen planus. She has no history of topical and/or systemic treatment.

Physical examination

Dermatological examination Disseminated lesions, predominantly on the soles of the feet and palms of the hands, with some isolated lesions on the arms and legs, presenting as violaceous, polygonal papules with sparse, fine scales. On the arms, the papules were arranged linearly, forming the Koebner sign, with the papules appearing over the existing excoriations (Figure 1). On the palms and soles, the papules were thicker, conglomerated, and erythematous (Figure 2). On the lateral borders of the calcaneus, they coalesced,



forming compact plaques with purplish-red erythema and keratoderma (Figure 3). Subjective symptoms included intense itching and pain at the level of the lesions on the palms and soles.



Fig. 1.Arrangement of papules over the excoriations.



Fig. 2. Arrangement of papules at the level of the palm of the hands.



Fig. 3.Arrangement of the papules on the lateral borders of the calcaneus.

Dermatoscopy A dermatoscopic image of less than 1 cm in diameter was observed, consisting of a purplish papule; Wickham's striae were observed on its surface.

Histopathological study of skin: B-3723/24, 4 skin fragments were analyzed, where the following was observed: extensive chronic inflammatory infiltrate in borders with interpapillary arrangement, the same saw-like, with vacuolization of the cells of the basal layer, as well as the presence of hyperkeratosis, all of which corresponds to the presence of lichen planus.

Additional tests

Hemoglobin: 128 g/L; leukocytes: $7.4 \times 10^9/L$; poly: 0.51 lymph: 0.49

Blood glucose: 4 mmol

Serology (VDRL): non-reactive

HIV: negative

Surface antigen, hepatitis B negative

Based on the clinical lesions on the arms and legs, palms, and soles of the feet, and the histopathological findings showing the classic abnormalities of this condition, systemic treatment with an oral steroid was initiated at an anti-inflammatory dose: hydrocortisone, 20 mg tablets, at a dose of 40 mg/day due to the painful inflammation present in plantar lesions that prevented the patient from walking. The dose was tapered according to clinical improvement. Topical treatment consisted of a high-potency steroid cream: clobetasol 0.05% twice daily, and an antihistamine: diphenhydramine, 25 mg tablets every 8 hours orally, to treat the main subjective symptom: intense pruritus.

Recovery was slow; the papules on the limbs gradually disappeared, followed by the appearance of small brown macules after 15 days of treatment. Treatment was extended to 30 days for the lesions on the palms and soles due to their greater resistance. Currently, the patient is progressing satisfactorily, with only a few flat, brown papular lesions on the palms and thick, whitish scaling along the margins of both heels, accompanied by minimal



itching.

Discussion

Lichen planus is a condition that can be observed with some frequency in the population; its characteristic violaceous papule is polygonal and striated, a pathognomonic pattern. (1) Although many authors consider palm and sole involvement in lichen planus infrequent, (2,3) a recent review by Colina de la Paz I et al, (4) found lesions in these locations in 26% of their patients. Palmoplantar lesions usually accompany those in other locations, which facilitates their diagnosis, (4,5) although this exclusively palmoplantar form is exceptional. (6).

In this location, there may be different presentations, in the form of violaceous or purpuric scaly plaques (75%) or with isolated papules, preferentially affecting the arch of the foot (60%), (7) a situation that makes clinical diagnosis difficult and requires confirmation with histopathological examination, after differential diagnosis with clinically similar conditions such as psoriasis, contact dermatitis, Kyrle's disease, and keratoderma. (6) Pruritus, like pain, is considered a defense mechanism of the body. (8)

To date, the etiology of lichenoid reactions remains unclear. A hypothesis has been suggested involving cross-reactivity between exogenous and endogenous antigens, leading to the activation of CD4+ and CD8+ T lymphocytes against basal keratinocytes. (1,2) Multiple triggering factors may exist, including infections, medications, radiotherapy, dental amalgams, emotional stress, and vaccines such as the hepatitis B vaccine. (2)

Following the recent development and widespread distribution of SARS-CoV-2 vaccines, the literature has described the de novo appearance or reactivation of lichenoid skin diseases. Some of the most significant include lichen planus, inverse pigmented lichen planus, lichenoid eruptions, and even lichen planopilaris, occurring days after the first or second dose of the vaccine. (2,3)



The vaccines implicated to date are those manufactured using RNA technology (Pfizer/Moderna), viral vectors (Oxford-AstraZeneca/Janssen), and inactivated viruses (Sinopharm/Sinovac). (2,4) The underlying pathophysiological mechanism is believed to be the increase in cytokines such as IL-2, IFN γ , and TNF α , which trigger a Th1 response. (5) Treatments used include topical and systemic corticosteroids, metronidazole, acitretin, antimalarial drugs, and antihistamines. (2-4)

Most vaccines trigger a Th1 response, which increases blood levels of IL2, TNF, and INF, and may be associated with the development of LP, (5) as in the case of the influenza vaccine composed of live attenuated viruses. (6-9)

In 2024, a literature review conducted by the Autonomous Regional University of the Andes showed that the incidence of LP in patients vaccinated against COVID-19 is relatively low compared to the total number of people who received the vaccine. (10)

Palmoplantar LP is uncommon in its initial form; the novelty of this case is its appearance after the administration of the Cuban flu vaccine, the latter acting as a triggering factor despite being an entity of unknown cause; with evolution towards improvement and subsequent disappearance of the skin lesions slowly and gradually.

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Conflict of interest

The authors declare no conflicts of interest.

Authorship contribution

Raciel Virelles Espinosa: conceptualization, research, supervision, supervisory responsibility and leadership in the planning and execution of activities, including external tutoring to the central team. Writing – original draft, preparation, creation and presentation of the published work, specifically the writing of the initial draft.

Raciel Virelles Espinosa and Yaniet Jiménez Montero: Data curation, they participated in management activities to record and maintain research data for initial use and subsequent reuse.

Anisleidy María Milán Rodríguez: visualization, preparation, or creation and/or presentation of the published work, specifically the visualization/presentation of data.



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