

Blaschkolinear acquired inflammatory skin eruption (blaschkitis) following COVID-19 vaccination



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Key words: blaschkitis; COVID-19; vaccination.

COVID-19 vaccination has been associated with multiple cutaneous reactions, including injection site reactions and urticarial, morbilliform, papulovesicular, pityriasis rosea-like, and purpuric rashes.¹ After receiving the COVID-19 vaccine, generalized lichenoid eruptions and reactivation of previous existing lichen planus have been reported less frequently.²⁻⁵

We describe a case of blaschkitis that developed several days after receiving the first dose of COVID-19 vaccine in a middle-aged woman.

CASE REPORT

A 46-year-old woman with no relevant past medical history was referred to the Department of Dermatology with a 4-month history of a unilateral pruritic cutaneous eruption on the left side of the trunk. The eruption was treated with topical medium-potency corticosteroids for several weeks without improvement. Physical examination revealed multiple isolated and clustered scaly erythematous flat papules, 2 to 4 millimeters in diameter, distributed on the left side of the trunk wall, over the left side of the abdomen, flank, and upper portion of the back. The lesions were limited to these particular areas and were arranged in a linear, haphazardly blaschkoid distribution (Fig 1). Dermatoscopy revealed shiny whitish striae on the surface of some lesions. The eruption began a few days after receiving the first dose of intramuscular COVID-19 vaccine (Pfizer/BioNTech BNT162b2) in her left arm. The patient denied any reaction with the initial

injection site or any changes in the eruption after the second dose of the vaccine that she received 3 weeks later.

Skin biopsy revealed a diffuse lichenoid lymphocytic infiltrate in the papillary dermis and around the hair follicles, with interface vacuolar changes, foci of spongiosis, and the presence of apoptotic keratinocytes (Fig 2), consistent with a lichenoid/lichen planus-like eruption.

The patient was diagnosed with a lichenoid blaschkoid unilateral eruption (blaschkitis). She was treated with a short course of oral corticosteroids and high potency topical corticosteroids. A progressive improvement was observed, and the lesions resolved completely after 3 weeks of treatment, leaving a discrete macular residual hyperpigmentation.

DISCUSSION

Blaschkitis is an acquired dermatosis that presents clinically by grouped or lined itching papules following the Blaschko's lines predominantly on the trunk. Variable histopathological features have been described in the literature, including spongiotic or interface/lichenoid dermatitis. Because of similarities with lichen striatus, some authors have proposed the terms "blaschko linear dermatoses" and "blaschkolinear acquired inflammatory dermatoses" to illustrate this spectrum of diseases, including both blaschkitis and lichen striatus.⁶ Blaschkitis mostly occurs in adults, whereas lichen striatus is more frequent in children with predominant limb involvement.

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Funding sources: None.

IRB approval status: Not applicable.

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JAAD Case Reports 2022;26:35-7.

2352-5126

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<https://doi.org/10.1016/j.jidcr.2022.06.013>



Fig 1. Clinical manifestations limited to the left side of the trunk.

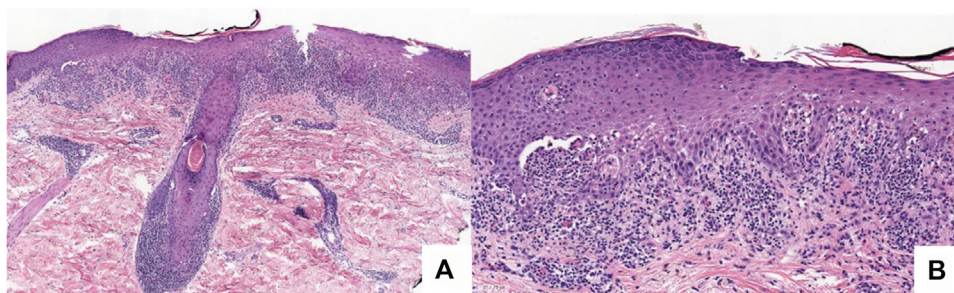


Fig 2. Histopathological findings. **A**, Band-like dermal superficial and perifollicular lymphocytic infiltrate. **B**, Discrete spongiosis, vacuolar interface changes with isolated dyskeratotic keratinocytes, and a band-like lymphohistiocytic infiltrate in the papillary dermis. (**A** and **B**, Hematoxylin-eosin stain; original magnifications: **A**, $\times 100$; **B**, $\times 200$.)

Inverse lichen planus, oral lichen planus, generalized lichen planus, and relapses/flare of pre-existing lichen planus and lichen planopilaris have been reported with COVID-19 vaccines.²⁻⁵

Recently, Belina et al⁷ reported the case of a 42-year-old woman with lichen striatus on her right arm that developed 3 days after the second dose of the Pfizer COVID-19 vaccine. The eruption appeared on her right wrist and spread proximally up her arm and right side of the chest. Most probably, this case could also be considered an example of COVID-19 vaccination-induced blaschkolinear acquired inflammatory skin eruption.

Moreover, several cases of blaschkoid lichenoid eruptions, including lichen striatus and linear lichen planus, after influenza and hepatitis B vaccinations have also been described.⁸⁻¹⁰

Although the COVID-19 vaccine is suspected to be the trigger of this patient's eruption, given the temporal association and case reports of similar phenomena, coincidental onset cannot be entirely excluded.

The exact pathogenic mechanisms involved in the development of blaschkolinear acquired inflammatory dermatoses are unknown. Cross-reactivity of viral antigens (virus or vaccine) with epitopes on mutated basal keratinocytes along Blaschko's lines could elicit an immune lymphocytic response resulting in peculiar clinical and histopathological manifestations.^{6,10}

Given the COVID-19 pandemic and global vaccination, clinicians should always consider the vaccination history in patients presenting with lesions following a unilateral blaschkolinear distribution.

Conflicts of interest

None disclosed.

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