LETTER TO THE EDITOR

# A case of pityriasis lichenoides et varioliformis acuta developed after first dose of Oxford–AstraZeneca COVID-19 vaccine

*Editor*

Pityriasis lichenoides (PL) encompasses a continuous spectrum of inflammatory cutaneous disorders, whose opposite ends are represented by pityriasis lichenoides et varioliformis acuta (PLEVA) and pityriasis lichenoides chronica.[1]

The aetiology is still unknown, but the literature shows that extrinsic antigens are frequent triggers: infectious agents (HIV, cytomegalovirus, Epstein–Barr virus, parvovirus B19, *Toxoplasma gondii*, Staphylococcus); drugs (hormone therapy and chemotherapy) and vaccine (MMR – mumps, measles and rubella, and influenza).[2,3]

Here, we describe a case of PLEVA developed after a Coronavirus disease 2019 (COVID-19) vaccination.

A 72-year-old male patient presented with a disseminated itching papular eruption, which had started 14 days after the first dose of the Oxford–AstraZeneca COVID-19 vaccine ChAdOx1-S n-CoV19 (Vaxzevria®, AstraZeneca, Cambridge, UK). No reactions at the site of injection and no systemic symptoms were reported. The patient was otherwise healthy. Moreover, he denied the intake of any other drug prior to eruption.

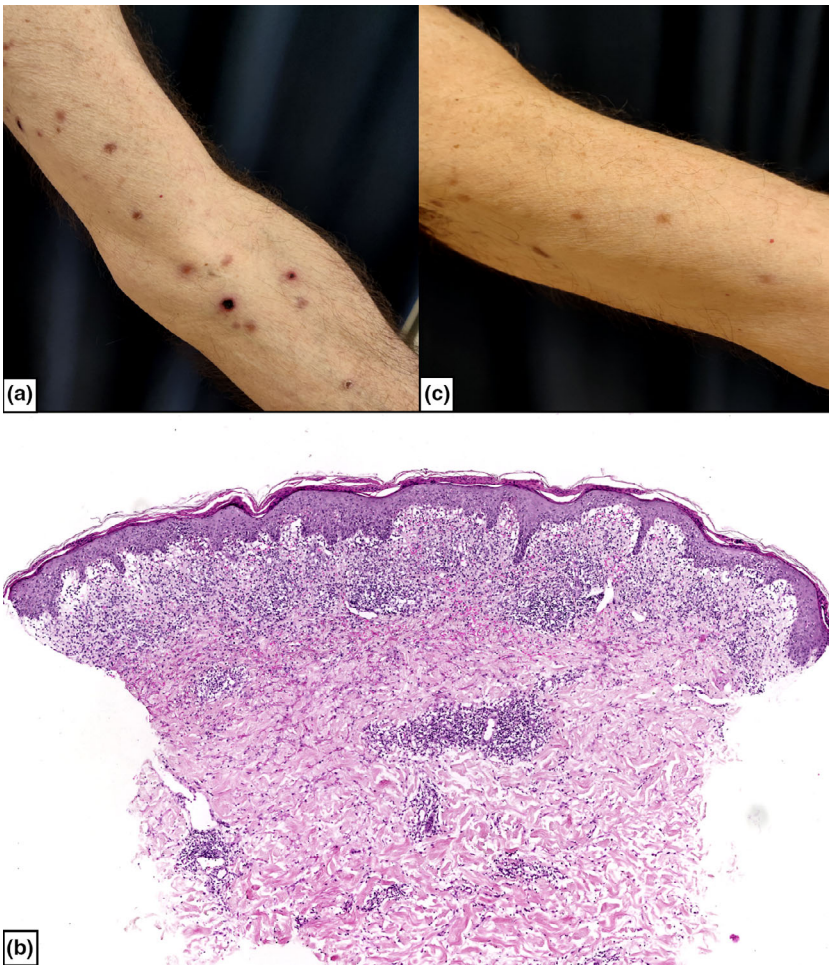


**Figure 1** Widespread erythematous and erythematous-crusted papules set on root of lower limbs, root of upper limbs and arms (a). At histology (b), parakeratosis, mild spongiosis, wedge-shape perivascular lymphocytic infiltrate, apoptotic keratinocytes and extravasated erythrocytes in the papillary dermis (H&E, ×7). A complete resolution of the acute clinical manifestations was observed, with only the presence of postinflammatory hyperpigmented macules (c), after 1 month.

Blood tests did not show any alteration, including liver and renal function, as well as autoimmune antibody titles. Moreover, blood tests for Parvovirus, Coxsackie virus, Epstein–Barr virus and cytomegalovirus demonstrated the absence of an active viral infection. The patient had no history of COVID-19 infection and he had undergone a COVID-19 throat swab test 5 days prior to the vaccine which resulted negative.

Dermatologic examination revealed the presence of widespread erythematous and erythematous-crusted papules, especially located on upper and lower limbs (Fig. 1a–c).

Histology revealed parakeratosis, mild spongiosis, wedge-shape perivascular lymphocytic infiltrate, apoptotic keratinocytes and extravasated erythrocytes in the papillary dermis.

According to a clinico-pathological correlation, a diagnosis of PLEVA was formulated, and, based on Naranjo Algorithm,[4] a probable association between COVID-19 vaccine and PL onset was suspected.

A short course of oral corticosteroid (methylprednisolone 16 mg po daily, tapered over 2 weeks) was administered, together with mometasone furoate 1 mg/g cream and an emollient once daily. After 1 month, a complete resolution of the acute clinical manifestations was observed, with only the presence of postinflammatory hyperpigmented macules on the limbs.

The patient underwent the second dose of anti-COVID vaccine switching to mRNA vaccine (Pfizer/BioNTech) and no relapse of the cutaneous disease was observed. After 6 months of follow-up, no recurrence of PLEVA lesions was observed.

To our knowledge, this case is the first description of PLEVA after the Oxford–AstraZeneca COVID-19 vaccine. So far, it is reported two cases of PLEVA after the first and the second doses of Pfizer/BioNTech (Comirnaty®) vaccine, respectively.[5,6] In both cases, a complete healing was observed, and in the first case, the patient underwent the second dose, with no adverse reactions detected.

Currently, a unique classification of COVID-19 vaccine skin reaction is absent. Most of the data are provided from an international registry of cutaneous manifestations of Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2), promoted by the American Academy of Dermatology (AAD) and the International League of Dermatological Societies (ILDS; www.aad.org/covidregistry). In August 2021, the AAD/ILDS registry included 2063 cutaneous vaccine reactions from 870 patients,[7] most of them were mild and self-limited. The 43% of patients with skin reactions after the first dose showed recurrence after the second dose with no severe sequelae, supporting the tolerability of these vaccines and reassuring against withdrawal of the second dose in case of previous reactions.[8]

Vaxzevria® vaccine consists of a chimpanzee adenovirus vector encoding the spike protein of SARS-CoV-2,[9] exploiting the well-known viral vector technology.

The capacity of this (or other) COVID-19 vaccines to trigger inflammatory or immune-mediated disorders is still a hot topic of debate, a cross-reactivity between viral or adjuvant antigens and self-antigens is plausible; however, a temporal coincidence cannot be excluded.[10]

Although the high safety profile of COVID-19 vaccines, with the increasing number of people receiving them, dermatologists should maintain an index of suspicion for possible side-effects, without discouraging the important vaccination campaign.

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## Conflict of interest

No conflict of interest or financial disclosure is present.

## Informed consent

The patient in this manuscript has given written informed consent to publication of their case details.

## Data availability statement

Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.

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