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## Pityriasis rosea developing after COVID-19 vaccination

Dear Editor,

Pityriasis rosea (PR) is an acute exanthematous disease, typically preceded by a primary solitary herald patch followed by the onset of smaller scaly papulo-squamous lesions on the skin tension lines within days to weeks.<sup>1</sup> Reactivation of herpes virus 6 and 7 has been incriminated as a possible aetiology, as well as bacterial infections, vaccines and certain drugs.<sup>2</sup>

We report two patients who developed pityriasis rosea (PR) following COVID-19 vaccination.

A 22-year-old woman presented with a 5-day history of an asymptomatic skin rash consisting of multiple oval 0.4–2.5 centimetres in diameter, pink erythematous plaques with an inner collaret of scaling, distributed on the trunk and proximal extremities and following the lines of cleavage

(Fig. 1). Neither herald patch nor systemic symptoms were present. The patient referred that she was vaccinated seven days before with the second dose of Pfizer-BioNTech COVID-19 (BNT162b2) vaccine (Pfizer, Inc.; Philadelphia, Pennsylvania).

A skin biopsy showed mild psoriasiform hyperplasia with focal parakeratosis and spongiosis, accompanied by a superficial perivascular infiltrate with scattered eosinophils and focal extravasated red blood cells. The skin eruption resolved without treatment.

A 54-year-old woman was evaluated for an itchy skin rash that had appeared one week after the first dose of Pfizer-BioNTech COVID-19 (BNT162b2) vaccine (Pfizer, Inc.; Philadelphia, Pennsylvania) and exacerbated after the second dose. It consisted of multiple small scaly oval plaques over the trunk. The patient referred to the appearance of a bigger plaque on the arm after the first dose of the vaccine that had faded spontaneously. No systemic symptoms were present. Topical corticosteroids were prescribed, and a



**Figure 1** Erythematous oval plaques and papules on the trunk along the cleavage lines.

progressive improvement of pruritus was noted. The eruption regressed spontaneously after 3 weeks.

Among the cutaneous manifestations of COVID-19 infection, maculopapular rashes account for almost 50% of cases.<sup>3</sup> Rarely, these may resemble or are identical to PR. Ehsanixi *et al.* recently reported an otherwise healthy young man with a typical PR eruption concurrent with COVID-19 pneumonia.<sup>4</sup> Isolated reports of PR developing in asymptomatic patients have also been described.<sup>5</sup>

Drug-induced PR-like eruptions (PR-LE), in contrast to typical PR, often lack the herald patch, tend to be itchy, more diffuse and confluent, and the mucous membranes can be involved. Patients do not experience prodromal symptoms, and blood or/and dermal eosinophilia may be found, and there are no signs of HHV-6/7 systemic reactivation.<sup>2</sup>

Pityriasis rosea and PR-like eruptions have rarely been observed to develop after vaccinations. Cases of PR/PR-LE after vaccination for smallpox, tuberculosis, influenza, influenza A (H1N1), diphtheria, tetanus, diphtheria-pertussis-tetanus (DTP), papillomaviruses, yellow fever, hepatitis B and pneumococcus have been reported in the literature.<sup>2,6</sup> In such instances, the average time lapse between vaccination and eruption onset ranged from 5 to 17 days, and the exanthema lasted from 2 to 6 weeks. Differentiation between 'true' PR and PR-LE was difficult and virological investigations for HHV-6/7 reactivation were performed only in a minority of cases. In cases of vaccine-induced PR, a high cytokine response to the vaccine leading to an immune deregulation and reactivation of latent viral infections, such as HHV6 and HHV7, has been hypothesized.<sup>7</sup> As far as we are concerned, no previous reports of PR developing after COVID-19 vaccination have been reported.

In our cases, prodromal symptoms were absent; the presence of herald patch was present in one case; exacerbation after the second dose administration was observed in one patient; and histopathological findings were consistent with typical PR. Therefore, we suggest that COVID-19 vaccination should be included in the list of potential triggers of PR. Development of PR/PR-LE after COVID-19 vaccination seems to be a rare event. Only further additional reports will demonstrate the real significance and prevalence of this potential side effect of COVID-19 vaccination.

### Patient consent for publication

Yes.

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The patients in this manuscript have given written informed consent to the publication of their case details.






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## Development of eruptive pseudoangiomatosis following COVID-19 immunization – Apropos of 5 cases

To the editor,

In the midst of the trying times whilst the world has come to a standstill by the novel coronavirus disease 2019 (COVID-19) or severe acute respiratory syndrome coronavirus 2 (SARS-CoV-