

## LETTER TO THE EDITOR

## COVID vaccine-induced lichen planus on areas previously affected by vitiligo

Dear Editor,

We recently came across a 64-year-old woman who developed pruritic papules on both hands previously affected by vitiligo since 30 years earlier. The lesion first appeared 5 days after the first dose of BNT162b2 mRNA COVID-19 Vaccine, then faded away, thus recurring 24 h soon after the second dose with a more extensive and symptomatic eruption. The patient noticed and referred a worsening of skin condition after sun exposure.

Clinical examination revealed reddish polygonal papules, somewhere merging in small plaques with secondary excoriation, exclusively located on lateral aspects of dorsum of hands, formerly affected by a long-standing vitiligo (Fig 1). Dermoscopy revealed Wickham striae combined contoured by erythema and associated with isolated white/yellowish scales (Fig 2). Based on clinical and dermoscopic findings, a diagnosis of lichen planus (LP) was made, and then confirmed by histopathology. The patient is now being treated with topical and systemic corticosteroids.

Even if uncommon, the co-occurrence of LP on vitiligo is certainly not new, as several reports are present in the literature.<sup>1–3</sup> In most cases, LP appeared after vitiligo, although concurrent diseases or LP preceding vitiligo have been reported. Whether the coexistence of the two skin diseases is a coincidence is still a matter of debate; however, different hypotheses can be advanced to explain this phenomenon.



**Figure 1** Lichen planus exclusively localized on pre-existing vitiligo patches of the hands.



**Figure 2** Dermoscopy showing the typical Wickham striae of lichen planus.

As LP occurred in most patients on sun-exposed areas, the actinic damage was hypothesized to be the trigger of LP on vitiliginous skin and this hypothesis was reinforced by the observation of lichenoid eruptions in patients undergoing phototherapy for vitiligo. In contrast with this theory, there is the evidence of patients developing LP on hidden non-sun exposed areas of vitiligo, such as genital, thighs or buttocks.

Another interesting hypothesis may be related to the well-known pathogenic concept of immunocompromised district, that is, a cutaneous area made prone to development of a novel disease by a pre-existing disease or injury of different origin. This local immune imbalance could be related to a dysregulation of cytokines and neuropeptides addressing immune response.<sup>4–6</sup>

As concerning the potential triggering effect of vaccine, there is evidence of a couple of cases of lichen planus that appeared after COVID vaccine, but no cases still reported of LP occurring on vitiligo after vaccination.<sup>7,8</sup>

In our specific case, the cause–effect relationship is quite strong, as the eruption had a bimodal timing. Indeed, it first appeared after the first dose, then spontaneously remitted, and thus reappeared soon after the second dose. Obviously, in our case, the vaccine could represent a trigger for the occurrence of LP in a cutaneous site previously affected by vitiligo. Probably, given the worsening of patient's lesions after sun exposure, a potential role of sunlight in the pathogenesis of LP on vitiligo could be confirmed in our case.

Plenty of cutaneous reactions after COVID vaccine have been reported,<sup>9,10</sup> but our case was singular for the aforementioned reasons, and so we retained it worth noting.

Further observations are needed to confirm whether this unique phenomenon may be truly related to the vaccine or just coincidental.

### Acknowledgement

The patient mentioned in this manuscript has given written informed consent for the publication of her case details.

### Conflict of interest

None declared.

### Funding source

None.

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DOI: 10.1111/jdv.17687