Correspondence

COVID-19 "second wave" and vaccines: the dermatologists' perspective

Dear Editor,

Coronavirus disease 2019 (COVID-19) has affected tens of millions of people worldwide since it was declared a pandemic by the World Health Organization on March 11, 2020. During the first months, cutaneous manifestations of the SARS-CoV-2 infection were continuously being reported. A potential correlation between cutaneous aspects and severity degrees of the disease has been hypothesized, albeit never demonstrated.[1] However, there is considerable interest surrounding the dermatological aspects of COVID-19. Starting in late August 2020, a "second wave" of COVID-19 cases broke out in Western countries. Literature investigating the differences in cutaneous manifestations between the first and second wave of the pandemic is scanty. A second outbreak of chilblain-like acral lesions in pediatric patients was reported concurrently with the second wave of the pandemic, although the authors did not report any data concerning incidence during the first and the second wave; moreover, the relationship between these skin lesions and SARS-CoV-2 infection is yet to be demonstrated.[2] Conversely, a Spanish study revealed a lower frequency of skin lesions in COVID-19 hospitalized patients in October 2020 compared to similar studies conducted before May 2020.[3]

Surprisingly, very few reports of COVID-19-related skin manifestations have been published recently. There are three possible explanations for this trend: (1) Increased knowledge of the cutaneous features of COVID-19 has resulted in a reduction in case reports and series, with journals preferring to publish larger cohort or registry-based studies; (2) patients with cutaneous manifestations of COVID-19 may not be brought to the dermatologist's attention as they may self-manage or be managed by a non-dermatologist; (3) new mutations and variants of SARS-CoV-2 may have resulted in fewer cutaneous manifestations, possibly through reduced viral skin tropism or by inducing different immunological responses.[3] Still, this observation is not supported by evidence or literature.

However, dermatologists still have an important role to play in the pandemic with the introduction of large scale vaccination programs.

The BNT162b2 mRNA COVID-19 vaccine was the first to be administered in Italy, starting in December 2020. During the pivotal efficacy trial, mild, local cutaneous reactions were frequently experienced, including injection-site redness, pain, and swelling. They appeared within 7 days and usually resolved within 48 hours.[4] To date, no other cutaneous reactions have been reported.

In December 2020, the BNT162b2 mRNA COVID-19 vaccine became available to all healthcare workers at the San Martino Polyclinic Hospital in Genoa, Italy. The vaccination campaign is still ongoing as most healthcare workers are waiting for the second dose. They were asked to report any adverse reactions, including cutaneous side effects. More than 1,000 medical professionals have received the first dose, but only two skin reactions have been reported.

Case 1 was a 42-year-old, otherwise healthy radiologist who developed small papulovesicular lesions, heralded by a burning sensation, on his right hemithorax 48 hours after the first dose (Fig. 1). Herpes zoster was diagnosed; acyclovir 800 mg was given five times a day for 7 days, with prompt resolution.

Case 2 was a 47-year-old emergency room physician with no comorbidities, previously diagnosed with lichen planus located on both forearms; he experienced a sudden worsening of the preexisting papules, which spread to both arms and trunk, the day after vaccination (Fig. 2). The patient refused a biopsy; topical corticotherapy applied twice a day for 10 days resolved the reaction.

Lichenoid reactions and herpes zoster are uncommon vaccine-related complications, although they have been reported after vaccinations, for example, following immunization for

Figure 1 Papulovesicular eruption unilaterally involving right hemithorax

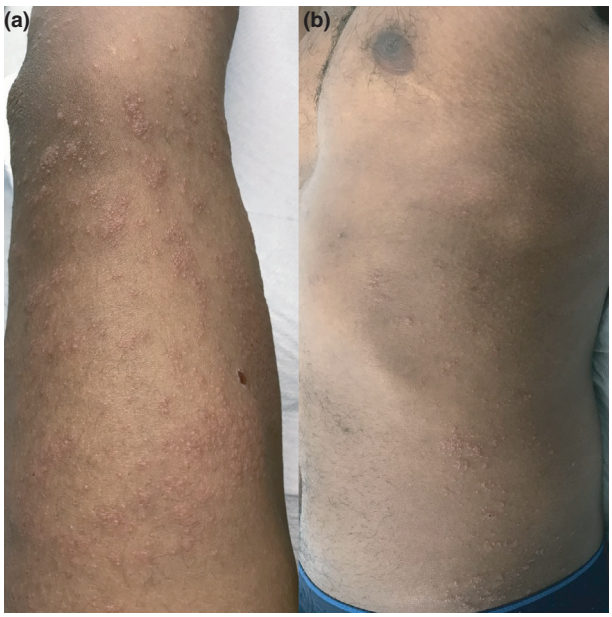

Figure 2 Lichenoid papular eruption involving left lower limb (a) and trunk (b)

hepatitis B and influenza, and for varicella and influenza, respectively.[5,6] Undoubtedly, they are both linked to a dysregulation of the cell-mediated immune system.[7,8] Although mRNA vaccines are innovative because they do not carry attenuated viruses (unlike the influenza vaccine), they may lead to dysregulation of the cell-mediated immune system, thus explaining our two cases.

In conclusion, it is crucial to monitor and to collect reports of any and all cutaneous adverse events, in order to understand the efficacy and safety of the vaccines. Furthermore, large studies on prospective cohorts and/or registry studies need to be designed since the mass vaccination of healthcare workers provides an excellent opportunity to collect data and therefore increase and improve the quality of the available evidence.

Dermatologists should be involved in the immunization campaigns, as vaccinated patients should be promptly offered dermatologic evaluation when needed. Therefore, pharmacosurveillance is imperative, and the COVID-19 challenge is not yet over for dermatologists.

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