There is not little uncertainty surrounding vaccination against COVID-19. Due to the pressing need, vaccines have been developed and approved at an extraordinarily quick pace.[3] Currently approved vaccines base their action on administering the host with sequences that encode the viral spike protein. This essentially signifies the first-time gene therapy-based vaccines, the long-term effects of which are still unknown, are going to be administered globally.[4] So, despite their safety and efficacy having been demonstrated in respective clinical trials, it is reasonable to be cautious and conduct a more intensive postmarketing vigilance.[5]

What has been shown in clinical trials is that the leading vaccines elicit a Th1 response, rising the serum levels of IL-2, TNFα and IFNγ.[6,7] These precise cytokines are involved in the appearance of lichen planus. Although we still do not completely understand its pathogenesis, the up-regulation of Th1 and increase of pro-apoptotic cytokines such as TNFα and IFNγ have been described as key agents responsible for basal keratinocyte apoptosis seen in this skin condition.[1]

Consequently, these vaccines could imply a surge of certain skin diseases mediated by the previously mentioned factors. Not only could we see flares of lichen planus, but also psoriasis, atopic dermatitis, vitiligo, acne vulgaris, pemphigus vulgaris, neutrophilic dermatoses and certain connective tissue diseases.[4]

Given the experience with different vaccines and the mechanism of action of the novel COVID-19 vaccines, it is plausible that the latter could be responsible for flares of certain skin dermatoses. Although there is still no definite evidence, as dermatologists, we should be aware of the possibility and keep an eye out for worsening or debut of these diseases after the COVID-19 vaccine.

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Conflicts of interest

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Prompt onset of Rowell's syndrome following the first BNT162b2 SARS-CoV-2 vaccination

Dear Editor,

In December 2020, the SARS-CoV-2 vaccine (BNT162b2, Comirnaty®, BioNTech/Pfizer, Mainz, Germany) was approved by the European Medicines Agency. Recently, BNT162b2 was started to be administered to high-risk populations for COVID-19 in Germany.[1] We here report the first case of an elderly patient who developed Rowell's syndrome (RM) after the first day of vaccination with BNT162b2.

The patient was a 74-year-old woman with a past medical history of severe dementia syndrome. Her regular medication included pantoprazole taken with no dose changes for many years. On 8 January 2021, she received the first anti-COVID-19 vaccine Comirnaty®. She had no symptoms on the day of the injection. One day after vaccination, however, her nurse noted that she scratched her skin because of a rash. Apart from the vaccine, she had no intake of any new medications, new supplements or new foods prior to the development of her skin rash. She was admitted to our hospital. Physical examination revealed erythematous partly violaceous coalescing macules and papules with slightly indicated cocarde formation on the trunk and extremities (Fig. 1). Mucous membranes were not affected. Two skin biopsies showed epidermal atrophy and a vacuolar interface dermatitis with lymphocytic infiltrates along the dermo–epidermal junction associated with dyskeratoses of basal keratinocytes (Fig. 1). Direct immunofluorescence (DIF) was unspecific. Serology revealed antinuclear autoantibodies (ANA) with 1:640 in speckled pattern as well as positivity for anti-Ro/SSA(60), anti-Ro/SSA(52), and

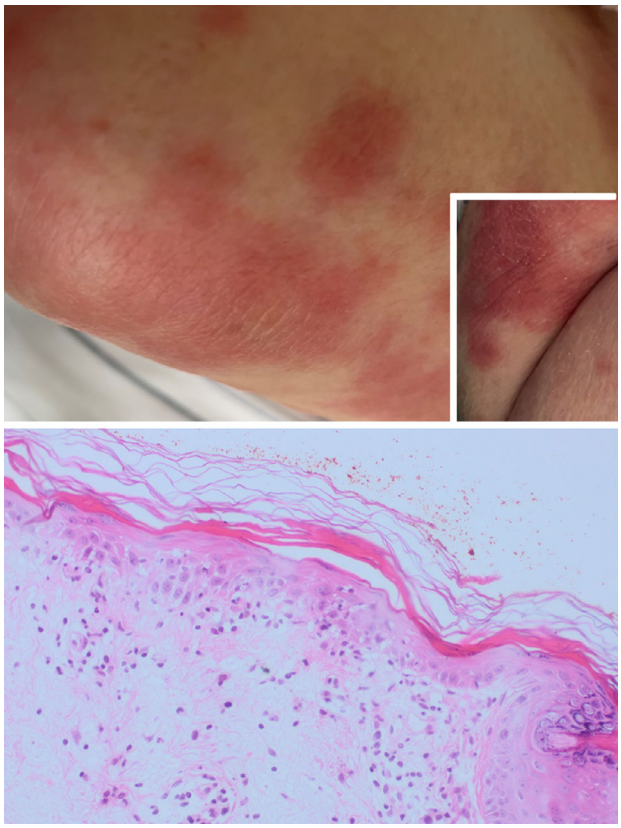

Figure 1 On the upper part of the figure, erythematous partly violaceous coalescing macules and papules with slightly indicated cocarde formation on the right arm. On the lower part of the figure, haematoxylin–eosin stain with atrophic epidermis and vacuolar interface dermatitis including lymphocytic infiltrates along the dermo–epidermal junction associated with dyskeratoses of basal keratinocytes.

anti-La/SSB antibodies. Her SARS-CoV-2 swab was negative. A diagnosis of RS was made. Under treatment with tapered systemic prednisolone 150 mg/day, her skin rash gradually improved so that she could be discharged to her nursing home.

Vaccinations are important for infectious disease prevention; however, there are adverse effects of vaccines.[1,2] Even though experiences about toxicities of the novel vaccines against SARS-CoV-2 are very limited, first reports indicate that these agents can cause acute severe allergic reactions such as anaphylaxis.[1] In case of BNT162b2, it was suggested that one of the compounds [e.g. polyethylene glycol (PEG)] might have caused the systemic reaction observed.[1] RS is a very uncommon condition (< 100 reported cases) characterized by the association of lupus erythematosus (LE) with erythema multiforme (EM)-like lesions combined with characteristic immunologic findings such as speckled pattern of ANA, positive anti-Ro/SSA or anti-La/SSB, and positive rheumatoid factor (female/male ratio: 8:1).[3] The EM-like lesions are usually negative on DIF.[3] LE can be triggered by endogenous or exogenous factors, including drugs, infections, and vaccines.[4] However, very few cases of RS are found to be drug-induced, including intake of proton pump inhibitors.[5] Together, we hypothesize that the BNT162b2 vaccine itself or any other excipient might act as an antigen activating the pathway involved in the pathogenesis of EM. Given the close temporal context and absence of other trigger factors such as infections or drugs, we think that BNT162b2 vaccination was very likely the cause of RS in the present case. However, we cannot fully exclude that pantoprazole intake played a synergistic role in the pathogenesis of RS in the present case.[5] With regard to a potentially triggering compound of the BNT162b2 vaccine, it is of great interest that PEG-liposomal doxorubicin therapy has been observed in association with adverse skin reactions such as diffuse morbilliform eruptions with LE/EM-like histopathological features including vacuolar interface dermatitis and epidermal dysmaturation.[6] In conclusion, we are just at the beginning of learning about the efficacy and toxicity of the novel anti-SARS-CoV-2 vaccines. As observed in other vaccinations, for example, against measles,[4] BNT162b2 vaccination may also trigger rare skin toxicities such as RS.

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Conflict of interest

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