Clinical Letter

Six cases of pityriasis rosea following SARS-CoV-2 vaccination with BNT162b2

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Dear Editors,

The development of vaccines against SARS-CoV-2 has been extremely quick [1–6], and currently the Moderna mRNA-1273, Pfizer/BioNTech BNT162b2 mRNA, and the AstraZeneca/University of Oxford ChAdOx1-nCoV-19 chimpanzee adenovirus (ChAd) vector vaccines have gained regulatory approvals. Clinical trials with these vaccines have been performed, and their safety and efficacy information has been published [7, 8]. However, it is expected that with the initiation of large vaccination campaigns, some possible adverse effects would be observed.

The Israeli Ministry of Health has started a large-scale vaccination program in Israel, using the Pfizer/BioNTech BNT162b2 mRNA. In a period of three months following the initiation of the vaccination campaign, we have observed six cases of pityriasis rosea (PR) in the Department of Dermatology in the Hadassah Medical Center, which appeared after the administration of the first or second dose of the Pfizer/BioNTech BNT162b2 mRNA vaccine.

All the patients developed the typical PR rash, which was characterized by round-to-oval erythematous pruritic plaques, with trailing white scale at the periphery of the lesions, following the appearance of a herald patch (Table 1, Figure 1). The rash was distributed on the trunk, proximal limbs and occasionally on the lower neck. The rash appeared a short time (4.2 ± 3.1 days) after the first dose in three patients, and after the second dose in three patients. There were no systemic symptoms, such as fatigue, fever, or gastrointestinal symptoms. The rash resolved in 4–6 weeks in all patients.

Pityriasis rosea is a papulosquamous skin rash, which has been associated with reactivation of the human herpesvirus (HHV) 6/7. It is a self-limiting condition but can cause itching and discomfort [9]. Possible triggers for PR or PR-like rash include insect bites, viral infections (including SARS-CoV-2) [10] and many different drugs [9]. Interestingly, vaccinations have been reported to be an important triggering factor, and a PR-like rash has been reported after influenza, hepatitis B, smallpox, Bacillus Calmette-Guerin, diphtheria, and pneumococcus vaccines [11–13]. It was postulated that immune stimulation caused by the vaccine led to HHV reactivation, resulting in PR [4, 13, 14].

Cases of PR were described following SARS-CoV-2 mRNA vaccinations [15–17], and some of them were diagnosed as PR-like rash rather than genuine PR [18]. Actually, PR-like eruption has been suggested to be one of the patterns that were classified as cutaneous reactions to SARS-CoV-2 vaccination [19]. Nevertheless, the frequency of the PR-like eruption was much lower (4/9 %) than injection-site reaction (32.1 %), the most frequent cutaneous reaction.

While the fact that the patients did not have prodromal systemic symptoms might raise the possibility that the patients had a PR-like rash, the typical morphology of the lesions together with their distribution on the trunk after a herald patch with lack of oral involvement and only mild itch suggest that the rash is consistent more with PR [20, 21]. Unfortunately, we were not able to test for the presence of HHV-6/7 DNA in the plasma.

Although more information is needed to confirm the association between the Pfizer/BioNTech BNT162b2 mRNA vaccine and PR appearance, the alarming number of cases that emerged a short time after the vaccination should raise concern of such possible association.

Table 1 Details on patients who developed pityriasis rosea after BNT162b2 mRNA vaccine.

Patient #	Gender	Age	Time of rash appearance	Location
1	F	51	3 days after second dose of vaccine	Abdomen, chest, back, upper thighs, lower neck
2	M	20	3 days after first dose of vaccine	Back, abdomen, chest, upper limbs
3	M	26	2 days after second dose of vaccine	Back, upper and lower limbs, chest, abdomen
4	F	23	2 days after first dose of vaccine	Chest, abdomen, back, thighs
5	M	66	5 days after second dose of vaccine	Chest, abdomen, lower back
6	M	23	10 days after first dose of vaccine	Back, upper and lower limbs, chest, abdomen

Abk.: W, weiblich; M, männlich.

Figure 1 Erythematous oval plaques on the flank of a 26-year-old male patient, developing three days after second dose of the BNT162b2 mRNA vaccine (Patient #3).

Conflict of interest

None.

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