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DERMATOLOGIC THERAPY WILEY

LETTER

Cutaneous adverse effects and contraindications to COVID-19 vaccination; four cases and an illustrative review from an Asian country

Dear Editor,

With global mass vaccination programs, it is important for dermatologists to be familiar with the management of cutaneous adverse events (cAEs) and contraindications for vaccination. In this article, we report four patients with cAEs arising after COVID-19 vaccination, assess the conformity in management with existing guidelines, and discuss issues surrounding vaccination. Consent for use of photographs was obtained.

The first patient is a 33-year-old male who developed an itchy papulosquamous eruption over the trunk and upper limbs 3 days after the first dose of the Pfizer-BioNTech vaccine (Figure 1A,B).

The second case is a 38-year-old female who developed urticaria and dermographism 17 days after the first dose of the Pfizer-BioNTech vaccine (Figure 1C). The urticaria improved over 2 weeks. She had a remote history of acute urticaria that was quiescent.

The third case was a health care worker in her 20s who developed urticaria a few days after the first dose of Pfizer-BioNTech vaccine and persistent upon review 6 weeks later. She had a remote history of chronic spontaneous urticaria that had been quiescent for the past few years up till the vaccination.

The last patient was a 31 female who developed itch and erythema at the injection 1 day after the Pfizer-BioNTech vaccine (Figure 1D).

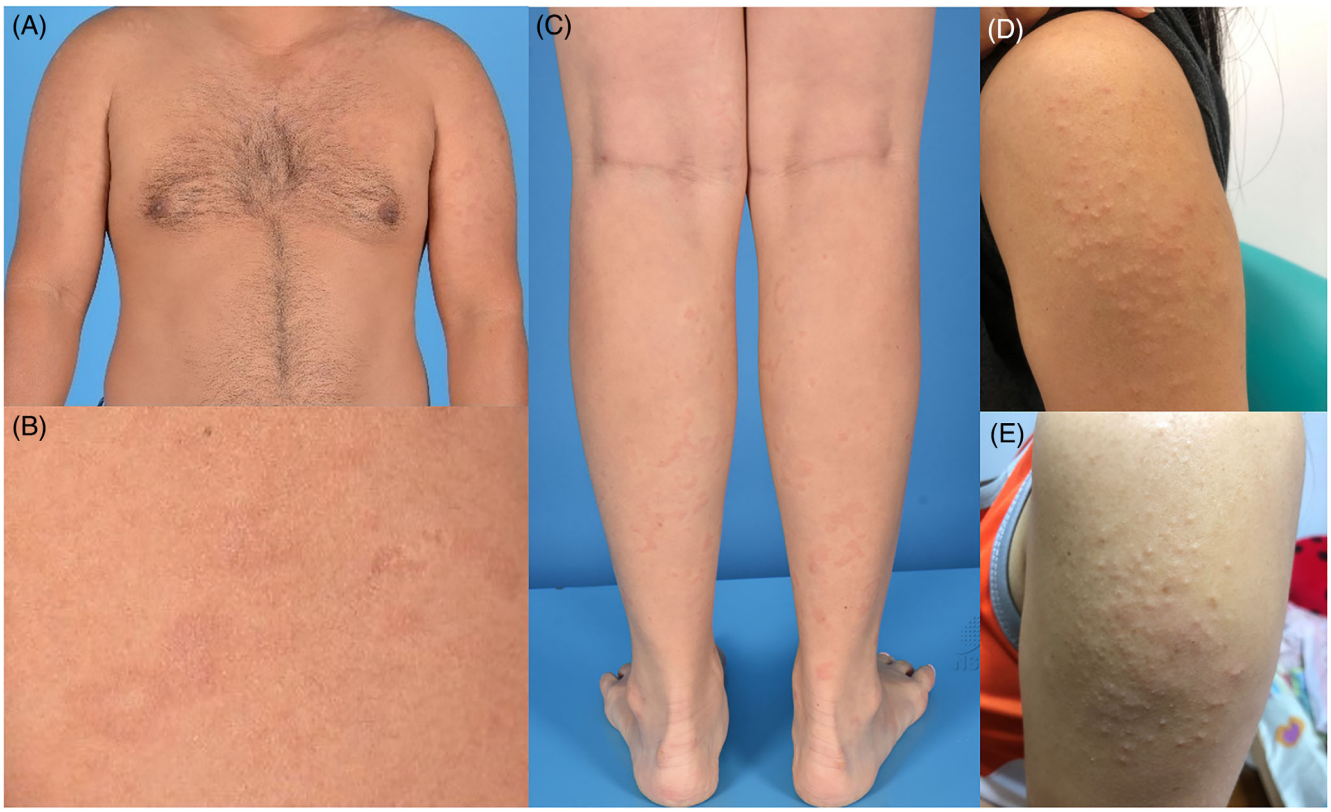

FIGURE 1 (A and B) Annular papulosquamous plaques in a patient with vaccine-triggered pityriasis rosea. (C) New onset urticated plaques over the lower legs after vaccination. (D) Erythematous papules at the site of vaccination reflecting a local reaction. (E) Recurrence of similar lesions after the second dose in patient D

How should these patients be assessed for suitability of the second dose? CDC[1] and our local Singapore's guidelines[2] recommend that patients who develop a severe or immediate allergic reaction should not receive a further dose of the same vaccine (Supplementary Table 1). With other reactions, the decision should consider the severity of the initial reaction and risk of acquiring severe COVID-19 infection.

The first patient was diagnosed with pityriasis rosea triggered by recent vaccination. While not an immediate allergic reaction or contraindication, the decision was made to defer the second dose, weighing also into account his low risk of COVID-19 acquisition.

The next two patients were diagnosed with urticaria triggered by vaccination, as opposed to a type 1 drug hypersensitivity reaction and thus were allowed to proceed with the second dose. The first was treated with antihistamines and completed the second dose without worsening in her hives.

Both local injection site reactions and delayed large local reactions are not contraindications to receiving the second dose,[1,2] although recurrence of the reaction may occur in 50% (typically of same severity or milder).[3] The last patient with injection site local reaction appropriately proceeded with the second dose of vaccine, triggering a similar but milder reaction (Figure 1E).

The recommendations for patients with drug allergies, allergies to non-mRNA vaccines, ongoing immunosuppression as well as post-vaccine considerations such as receiving other vaccines are summarized in Supplementary Table 1. Of particular mention, immunosuppressed patients on ≥20 mg/day of prednisolone or equivalent may be considered for an additional an mRNA COVID-19 vaccine dose after completion of the initial series[1] in view of the lower vaccine efficacy in this group.[4]

Adverse events following vaccination continue to be reported, such as the reactivation of herpes zoster, swelling at sites of previous filler injections and vasculitis with mRNA vaccines.[5] Similar to our reported patients, these require further careful study to differentiate causality and coincidence. Recommendations and practices may vary between different organizations and countries, in part influenced by the risk–benefit ratio such as the number of new COVID-19 cases in the country, and will continue to change with time and new pharmacovigilance data. Physicians should remain updated on national and international guidelines and actively monitor for and report vaccine related complications.

CONFLICT OF INTEREST

Hazel H. Oon is a speaker, advisory board member, and researcher for Janssen, Novartis, and Galderma. She has also been a clinical investigator for Pfizer and an advisory board member for AbbVie. The other authors declare no financial conflicts of interests. All authors are in agreement with submission of this manuscript.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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REFERENCES

1. Interim Clinical Considerations for Use of COVID-19 Vaccines|CDC, 2021. https://www.cdc.gov/vaccines/covid-19/clinical-considerations/covid-19-vaccines-us.html
2. MOH | COVID-19 Vaccination. 2021. https://www.moh.gov.sg/covid-19/vaccination
3. Blumenthal KG, Freeman EE, Saff RR, et al. Delayed large local reactions to mRNA-1273 vaccine against SARS-CoV-2. *N Engl J Med*. 2021;384(13):1273-1277. https://doi.org/10.1056/NEJMc2102131
4. Mahil SK, Bechman K, Raharja A, et al. The effect of methotrexate and targeted immunosuppression on humoral and cellular immune responses to the COVID-19 vaccine BNT162b2: a cohort study. *Lancet Rheumatol*. 2021;3(9):E627-E637. https://doi.org/10.1016/S2665-9913(21)00212-5
5. McMahon DE, Amerson E, Rosenbach M, et al. Cutaneous reactions reported after Moderna and Pfizer COVID-19 vaccination: a registry-based study of 414 cases. *J Am Acad Dermatol*. 2021;85(1):46-55. https://doi.org/10.1016/j.jaad.2021.03.092
6. National Advisory Committee on Immunisation, Canada. Recommendations on the use of COVID-19 vaccines. 2020. https://www.canada.ca/en/public-health/services/immunization/national-advisory-committee-on-immunization-naci/recommendations-use-covid-19-vaccines.html#b7
7. COVID-19 Vaccine (Vero Cell), Inactivated, CoronaVac Package Insert. 2021. https://www.fhb.gov.hk/download/our_work/health/201200/e_PI_CoronaVac.pdf
8. Mortazavi S. Coronavirus disease (COVID-19) vaccination associated axillary adenopathy: imaging findings and follow-up recommendations in 23 women. *AJR Am J Roentgenol*. 2021;24:1-2. https://doi.org/10.2214/AJR.21.25651

SUPPORTING INFORMATION

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