Conflict of interest
All authors (EA, B. Ö. O., M.O. Özteş, MO. Öztas and N. Ilter) have nothing to disclose.

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References
1 Krammer F. SARS-CoV-2 vaccines in development. Nature 2020; 586: 516–527.
2 Zhang Y, Zeng G, Pan H et al. Safety, tolerability, and immunogenicity of an inactivated SARS-CoV-2 vaccine in healthy adults aged 18–59 years: a randomised, double-blind, placebo-controlled, phase 1/2 clinical trial. Lancet Infect Dis 2021; 21: 181–192.
3 Mallapaty S. China COVID vaccine reports mixed results—what does that mean for the pandemic? Nature 2021.
4 Caubet J-C, Ponvert C. Vaccine allergy. Immunol Allergy Clin 2014; 34: 597–613.
5 McNeil MM, DeStefano F. Vaccine-associated hypersensitivity. J Allergy Clin Immunol 2018; 141: 463–472.

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A Bullous Eruption following the Pfizer-BioNTech COVID-19 vaccination

Dear Editor,

On 2 December 2020, the Medicines and Healthcare products Regulatory Agency (MHRA) authorized the use of a modRNA – nucleoside modified messenger RNA (mRNA) COVID-19 vaccine; Pfizer-BioNTech. Prior to this, no mRNA vaccines had been authorized for use in humans.1

As of June 2021, 66 million COVID-19 vaccinations have been administered within the UK.2 Currently, approved vaccines for use in the UK include Pfizer-BioNTech, Oxford/AstraZeneca and Moderna variants. An ongoing multinational randomized controlled trial assessing the safety of the Pfizer-BioNTech vaccine reported few localized cutaneous reactions at the injection site, but no significant adverse cutaneous reactions. The data from this study suggested a two-dose regimen of the Pfizer-BioNTech vaccine was safe and effective in 95% of cases.3

We report a case of an acute widespread bullous eruption following administration of the second Pfizer-BioNTech vaccine in a 52-year-old Caucasian female. The patient developed a local site reaction 3 hours postvaccination, and within a few days, a widespread florid maculopapular, erythematous eruption with face and mucous membrane sparing (Fig. 1). Past medical history included Type 2 Diabetes Mellitus and morbid obesity (BMI 58.8 kg/m²). The patient reported a similar, but localized, self-limiting cutaneous reaction following an influenza vaccination some years previously.

Laboratory investigations revealed a mild transaminitis with alanine aminotransferase of 54 IU/L and an eosinophilia 1.0 × 10³/L. A skin biopsy was taken from the left shoulder showing a dual pattern of inflammation with spongiosis and interface dermatitis. The patient was initiated on topical clobetasol 0.05% ointment and 50:50 white soft paraffin: liquid paraffin. The patient was re-reviewed 1 week later, unwell with fatigue and a marked deterioration of the rash, with further extension and widespread bullae initiating on the upper legs (Fig. 2). The patient was admitted and commenced on oral prednisolone (50 mg). Within three days of admission, there was resolution of the transaminitis and eosinophilia, with marked improvement.
in the rash leaving postinflammatory hyperpigmentation. COVID-19 PCR test was negative throughout the admission.

Fernandez-Nieto et al. reported 864 cases of cutaneous reactions following the Pfizer-BioNTech COVID-19 vaccination in 4775 subjects. The most common reaction being itch, followed by delayed injection site reaction, disseminated lesions and rarely urticaria. No severe cutaneous reactions were reported. It is unclear which component of the vaccine maybe causing the cutaneous reactions seen. The mRNA encoding its spike protein is loaded into a lipid nanoparticle before administration to prevent tissue degradation. These nanoparticles include an attachment of polyethylene glycol (PEG). Cabanillas et al. report PEG being used as a common excipient in medicines, cosmetics and foods; cutaneous reactions to PEG in individuals have previously been described. Further allergy diagnostic studies using ingredients of the Pfizer-BioNTech vaccine may help delineate the underlying causative agent.

This temporal association between the eruption and vaccination suggests a link with the COVID-19 mRNA vaccine Pfizer-BioNTech. In contrast to previous reports, this presentation was severe and necessitated inpatient admission and systemic steroids. Careful pharmacovigilance is required to establish and report unknown side effects of this new vaccine and to increase awareness.

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References
1 Roncati L, Corsi L. Nucleoside-modified messenger RNA COVID-19 vaccine platform. J Med Virol 2021 07/01; 2021/06; 93: 4054–4057.
2 GOV.UK Coronavirus (COVID-19) in the UK. 2021; Available at: https://coronavirus.data.gov.uk/details/vaccinations. Accessed Jun 2, 2021.
3 Polack FP, Thomas SJ, Kitchin N et al. Safety and efficacy of the BNT162b2 mRNA Covid-19 vaccine. N Engl J Med 2020 12/31; 2021/06; 383: 2603–2615.
4 Fernandez-Nieto D, Hammerle J, Fernandez-Escribano M et al. Skin manifestations of the BNT162b2 mRNA COVID-19 vaccine in healthcare workers. ‘COVID-arm’: a clinical and histological characterization. J Eur Acad Dermatol Venereol 2021; 35: e425–e427.
5 Cabanillas B, Akdis C, Novak N. Allergic reactions to the first COVID-19 vaccine: a potential role of Polyethylene glycol? Allergy 2020; 76: 1617–1618.

DOI: 10.1111/jdv.17606