Conflict of interest

All authors (EA, BÖ, ÖE, MOÖ and Nİ) have nothing to disclose.

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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/m^2). The patient reported a similar, but localized, self-limiting cutaneous reaction following an influenza vaccination some years previously.

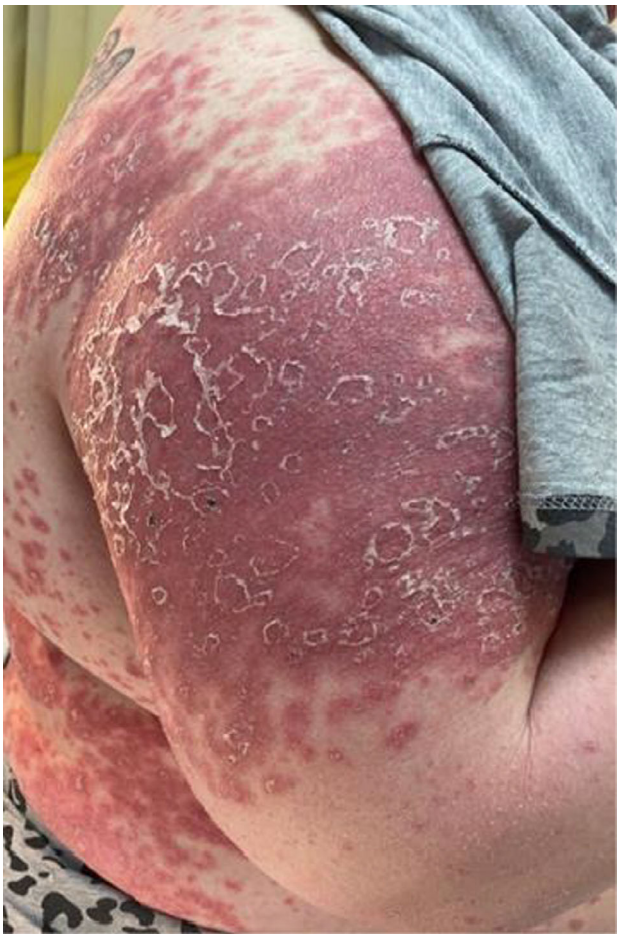

Figure 1 Widespread erythematous maculopapular eruption originating on the right arm (vaccination site) with areas of exfoliation.

Laboratory investigations revealed a mild transaminitis with alanine aminotransferase of 54 IU/L and an eosinophilia 1.0×10^9/L. A skin biopsy was taken from the left shoulder showing a dual pattern of inflammation with spongiotic 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

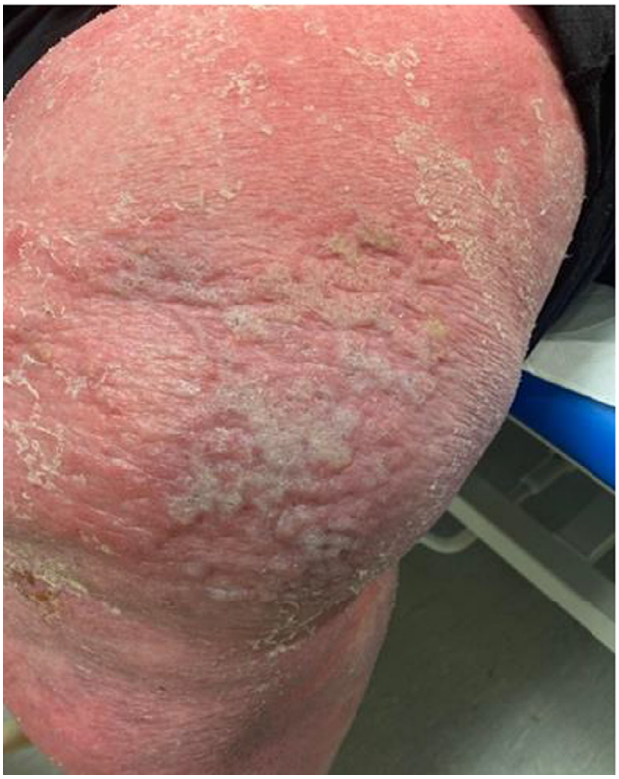

Figure 2 Flaccid blistering on the left knee with background erythema and desquamation.

in the rash leaving postinflammatory hyperpigmentation. COVID-19 PCR test was negative throughout the admission.

Fernandez-Nieto *et al.*[4] 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.[4]

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.*[5] 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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Conflict of interest

No conflict of interest to declare.

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SARS-CoV-2 in the sweat of COVID-19-positive patients: a possible route of transmission?

Dear Editor,

SARS-CoV-2 has caused a global pandemic, in part due to the highly infectious nature of the disease. Transmission between individuals occurs mainly through respiratory droplets and physical contacts, but other modes of transmission could be underestimated.[1] Some observations point to a role of human sweat as a possible vehicle of transmission of SARS-CoV-2.[2] SARS-CoV was already demonstrated in sweat glands in 2004.[3] Recently, immunohistochemical investigations and RNA-FISH technique documented SARS-CoV-2 presence in the eccrine glands of COVID-19-positive patients.[4–6] Moreover, human angiotensin-converting enzyme 2 (ACE2), the receptor by which

