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LETTERS TO THE EDITOR

Localized cutaneous reaction to an mRNA COVID-19 vaccine

Dear Editor,

The coronavirus disease (COVID-19) is a novel disease that can lead to fatal outcomes in infected individuals. Messenger RNA (mRNA) vaccines are two of the three Food and Drug Administration (FDA)-approved vaccines in the United States (US) to date. Disclosed side effects by the Centers for Disease Control and Prevention (CDC) included tiredness, headache, muscle pain, chills, fever, and nausea.[1,2] A variety of other adverse effects are continuously being reported in individual patients. We describe a case of localized cutaneous reaction to an mRNA vaccine.

A 54-year-old man presented with a 2-day history of an unrelenting pruritic rash on his upper left arm. He received his first dose of the mRNA vaccine in the same arm one week prior. The patient denied any contact with chemicals, plants, or animals and had no systemic symptoms such as fever or chills. The physical examination revealed clustered erythematous papules and nodules on his posterior upper left arm that extended to left elbow and forearm (Figure 1). Clobetasol twice daily was initiated. Improvement was noted in the lesions at the first follow-up appointment.

Pfizer-BioNTech is an mRNA vaccine against COVID-19 and is relatively new with ongoing documentation of adverse events. Reported adverse reactions were more common after the second dose than the first dose and occurred more often in participants aged 18–55 years old.[1] The most common reported symptoms were fatigue, headache, muscle pain, chills, and injection site pain.[1] Symptoms that interfered with daily activity were found to be 0.6% of the participants.[1] The most recent analysis released by the CDC for allergic reactions reported 4393 adverse events through the Vaccine Adverse Event Reporting System (VAERS).[3] The non-anaphylactic allergic reactions that were reviewed included pruritus, rash, itchy/scratchy sensation in the throat, and mild respiratory symptoms.

A study conducted by American Academy of Dermatology and the International League of Dermatological Societies further characterized the morphology of cutaneous reactions for both the first and second doses of the available mRNA vaccines. Data were collected between December 24, 2020 and February 14, 2021 for a total of 414 unique patients.[4] Of these cases, 71 were reported following receipt of this particular mRNA vaccine.[4] The most common reported cutaneous reactions included urticaria, local injection site reaction, and morbilliform rash.[4] Other reported cutaneous reactions included delayed large local reaction, swelling, erythema, pain, erythromelalgia, flare of an existing dermatologic condition, vesicular, pernio/chilblains, zoster, angioedema, pityriasis rosea, filler reaction, vasculitis, contact dermatitis, rash in a breastfed infant, and petechiae.[4]

A study performed in Rome, Italy, reviewed the adverse effects of 3170 healthcare providers who received this vaccine.[5] Out of these cases, 11 developed cutaneous symptoms including mild urticarial rash, erythematous-edematous reaction at the injection site, diffuse morbilliform rash, mild erythema, and positive dermographism.[5] All cutaneous symptoms resolved spontaneously within 2–3 days.[5] Another study performed in Spain reviewed skin manifestations of 4775 participants who received this mRNA vaccine in a tertiary referral hospital.[6] Of these cases, 49 reported delayed injection site reactions after receiving the first dose.[6] An additional 54 participants reported this reaction following the

FIGURE 1 Cutaneous reaction to COVID-19 mRNA vaccine

second dose of the vaccine.[6] Other reported skin manifestations included recurrent lesions following the second dose in 16 cases, pruritus in 70 cases, disseminated lesions in 5 cases, and urticarial reactions in 2 cases.[6]

Cutaneous reactions from the vaccine range from mild to severe but are readily treatable. Hence, the benefits of receiving the vaccine outweigh these adverse events. It is imperative that all reactions are documented to prepare medical professionals in adequate treatment of all possible outcomes. This case report demonstrates a localized cutaneous reaction following administration of an mRNA vaccine and should be documented as a possible adverse effect.

KEYWORDS

adverse reaction, COVID-19, rash, skin manifestation, vaccine

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None.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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