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LETTER TO THE EDITOR

Two cases of mild systemic adverse skin eruption after coronavirus disease 2019 vaccination

Dear Editor,

Humans currently face a difficult situation due to the coronavirus disease 2019 (COVID-19) pandemic. This pandemic necessarily changes lifestyles and limits various opportunities, such as economic and learning in children. Because there was initially no radical therapy against COVID-19, social distancing and wearing a mask have been key to slowing the spread of COVID-19 to avoid disruption of medical services. Meanwhile, the COVID-19 vaccine has been rapidly developed for clinical applications, and the mRNA vaccination started to be administrated to medical staff and the elderly in Japan from February 2021. Some vaccinations cause an allergic cutaneous adverse reaction;[1] however, there has been a limited number of case reports of COVID-19-related drug eruption. In this case report, we show two cases of COVID-19 vaccine-related cutaneous allergic adverse reaction as a mild form of drug eruption.

A 48-year-old female developed an erythematous eruption on the trunk and extremities 3 days after the second administration of BioNTech COVID-19 vaccine (Pfizer) without p.o. administration of acetaminophen or non-steroidal anti-inflammatory drugs (NSAIDs). On physical examination, erythematous macules were observed on the whole body without mucosal lesions, fever, or muscle pain (Figure 1a,b). A skin biopsy showed a slight infiltration of lymphocytes and eosinophils around vessels in the dermis (Figure 1c). Her skin eruption was rapidly improved by topical betamethasone propionate within 7 days of the treatment.

A 58-year-old female noticed itchy erythematous papules 4 days after the second BioNTech COVID-19 vaccination (Pfizer) without p.o. administration of acetaminophen or NSAIDs. Erythematous papules were located on the face and extremities without mucosal lesions, fever, or muscle pain (Figure 1d). She had a history of diabetes mellitus, hypertension, and hyperlipidemia and was treated with vildagliptin, rosuvastatin, and nifedipine. A skin biopsy taken from her face eruption showed lymphocyte and eosinophil infiltration into the dermis (Figure 1e). Her skin eruption was improved within 7 days of

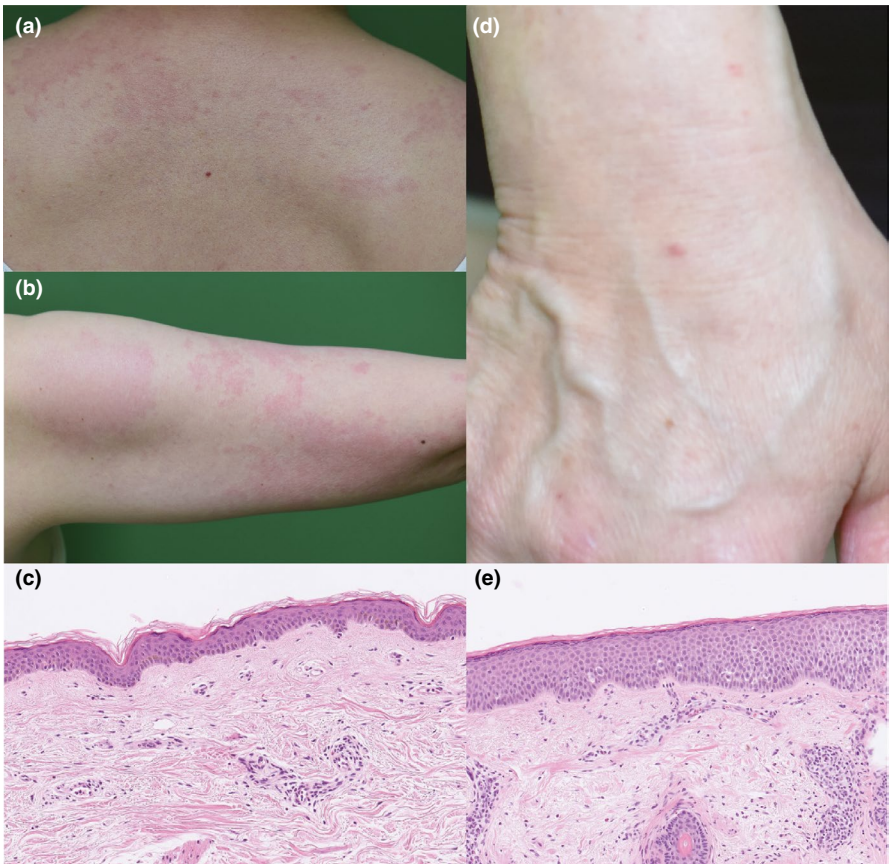

FIGURE 1 Clinical manifestation and histological examinations. (a–c) Clinical manifestation and histological examination in case 1. Mild exanthema spread into the (a) trunk and (b) right arm without mucosal lesion. (c) A skin biopsy showed lymphocyte and eosinophil infiltration into the dermis. (d,e) Clinical manifestation and histological examination in case 2. (d) Erythematous papules were observed on the face and trunk and extremities. (e) A skin biopsy taken from the face showed lymphocyte infiltration into the dermis. H&E staining and x10 magnification view

p.o. administration of an antihistamine drug and topical hydrocortisone butyrate.

One case of cutaneous adverse reaction after COVID-19 vaccine administration has already been reported.[2] Because this case showed skin eruption after both the first and second administration of vaccine, this author concluded that the reason for the skin eruption was a similar immune response to COVID-19 rather than a traditional type IV allergic skin reaction to the vaccine itself. In addition, a local skin reaction has been previously reported.[3]

Although vaccine-related allergic reactions are unavoidable and exist at a constant frequency, the benefits obtained from vaccine administration are currently important to overcome the difficult situation presented by COVID-19. As a limitation of our case report, we could not conduct patch testing using COVID-19 vaccination; however, patch testing of a representative additive in this vaccine, polyethylene glycol (PEG) using PEG400 and PEG1000, provided negative results. In addition, these cases were not workers in a COVID-19 ward. Although our case showed a mild form of drug eruption, further observational study is necessary to clarify the detailed characteristics of drug eruption by COVID-19 vaccine.

CONFLICT OF INTEREST

None declared.

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