

Common pitfalls and bias learned from the COVID-19 pandemic: Keeping a clear mind of judgment



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INTRODUCTION

Living with COVID-19 for >2 years, the virus has unfortunately changed the way we think, whether we realize it or not. Attention was given to anything that may be associated with the disease. Here, we reflect on what we have learned from a case of bullous fixed drug eruption following administration of the AstraZeneca/Oxford (ChAdOx1/AD1222) SARS-CoV-2 vaccine to a patient in whom a similar but milder episode had developed previously after receiving an influenza vaccine.

CASE REPORT

A 79-year-old woman presented with painful bullae against a background of hyperpigmented patches over the lower portion of her left eyelid, lower portion of the lip, and left hand 2 days after receiving the AstraZeneca/Oxford vaccine (Fig 1). Her lesions appeared as dusky-red patches within 24 hours of injection, which then progressed to form bullae the following day. Interestingly, she reported a similar episode after receiving an influenza vaccine for the very first time the previous year, wherein hyperpigmented patches developed over the lower portion of her left eyelid and the lower portion of her lip. When asked, she denied the use of any medication at that time. Skin biopsy showed subepidermal bullae, severe vacuolar changes within the basal layer of the epidermis, marked pigment incontinence, and inflammatory infiltrate rich in eosinophils. Bullous fixed drug eruption was diagnosed.

She was given topical steroids and oral medications for symptom relief, with significant improvement at her follow-up visit.

With the recent ongoing global COVID-19 pandemic, more people are reporting SARS-CoV-2 vaccine-related cutaneous side effects, which lead to common questions from the public about whether the scheduled second dose is suitable if side effects are observed. With all that has been reported about the vaccine, we readily suspected that fixed drug eruption had developed twice in this patient because of polysorbate 80 (Tween 80), a common allergenic component of vaccines: the initial instance of its presence in the influenza vaccine, followed by the second and more severe instance of its presence in the SARS-CoV-2 vaccine. However, upon further investigation, only the AstraZeneca vaccine was found to contain polysorbate 80, and the influenza vaccine she had received did not. After more specific history taking, including naming specific antipyretic drugs that are common culprits for fixed drug eruption, the patient finally revealed that she had taken acetaminophen both times right after the vaccinations to prevent discomfort. She also recalled having mild skin pigmentation every time she had taken the same medication for back pain. A patch test on lesional skin confirmed our suspicion, and the patient was educated on avoiding such medication in the future.

DISCUSSION

Our patient experienced 2 episodes of fixed drug eruption following the administration of 2 types of

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Fig 1. Presentation of fixed drug eruption showing dusky-red patches over the left eyelid and lower portion of the lip, which then progressed to form bullae the following day.

vaccines. With all the attention that was given to the side effects of COVID-19 vaccines at the time,¹⁻³ we surmised too readily that polysorbate 80 may have been the potential allergen. Fortunately, we quickly

realized our mistake and encouraged the patient to complete her second AstraZeneca vaccination using different antipyretics. We learned from this experience that first, it is important to ask specific questions to patients during history taking. As in our case, the patient denied any current use of medication because she did not take any regularly. Second, despite all the attention that was given to COVID-19, we should not let any anchoring bias affect our judgment.

Conflicts of interest

None disclosed.

REFERENCES

1. Byrd RC, Mournighan KJ, Baca-Atlas M, Helton MR, Sun NZ, Siegel MB. Generalized bullous fixed-drug eruption secondary to the influenza vaccine. *JAAD Case Rep.* 2018;4(9):953-955.
2. Fisher AA. Immediate and delayed allergic contact reactions to polyethylene glycol. *Contact Derm.* 1978;4(3):135-138.
3. Mintoff D, Pisani D, Betts A, Scerri L. SARS-CoV-2 mRNA vaccine-associated fixed drug eruption. *J Eur Acad Dermatol Venereol.* 2021;35(9):e560-e563.