

BRIEF ARTICLE

Messenger RNA-1273 Moderna COVID-19 Vaccination as Potential Trigger for Case of New Onset Pemphigus Vulgaris

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ABSTRACT

As vaccination against COVID-19 remains a worldwide initiative, so does describing its associated adverse effects. While there have been many reports detailing various dermatologic adverse events, autoimmune bullous disorders following vaccination are less well described.¹ Pemphigus vulgaris (PV) is an autoimmune bullous disease of the skin and mucous membranes that has many known triggers, including vaccination.² To our knowledge, there are at least six cases of pemphigus vulgaris developing following SARS-Cov-2 vaccination.³ Here we describe a case of new onset PV following COVID-19 vaccination with the mRNA-1273 (Moderna) vaccine. Because this disease carries significant morbidity and mortality, we hope this report serves as a reminder that while vaccination remains a global priority, continued documentation and recognition of novel vaccination side effects by clinicians is essential.

INTRODUCTION

With the ongoing COVID-19 pandemic, there have been many reports of suspected dermatologic manifestations both from the virus and the vaccine, however, autoimmune bullous disorders following vaccination are less well described.¹ Pemphigus vulgaris (PV) is an autoimmune bullous disease of the skin and mucous membranes that has many known triggers, including vaccination.² Here we describe a case of new onset PV following COVID-19 vaccination with the mRNA-1273 (Moderna) vaccine.

CASE REPORT

A 67-year-old Vietnamese female presented to the outpatient dermatology clinic with flaccid bullae and erosions involving the

trunk and oral mucosa (Figure 1A and 1B) five days after receiving the second dose of the mRNA-1273 (Moderna) vaccine. Prior to vaccination, this patient was in her usual state of health and denied any significant medical history, medications or known allergies.

Histology of lesional skin showed a suprabasilar intraepidermal acantholytic blister consistent with PV. Direct immunofluorescence demonstrated linear and granular IgG and C3 deposition in the lower two thirds of the epithelial strata. Lastly, enzyme-linked immunosorbent assay (ELISA) detected antibodies to desmoglein 1 and 3 (128 and 36 U/mL, respectively). These clinical and laboratory findings confirmed the diagnosis of PV, and the patient was initiated on systemic therapy with oral prednisone and mycophenolate mofetil, leading to significant improvement in

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her clinical condition after approximately six months of therapy.



Figure 1A. Pemphigus vulgaris involving the back.



Figure 1B. Pemphigus vulgaris involving the chest.

DISCUSSION

PV is an acquired autoimmune bullous disease of the skin and mucous membranes that involves an immune response to desmosomal proteins of the skin, desmoglein 1 and 3, manifesting clinically as flaccid bullae and erosions in a mucocutaneous distribution. Although the etiology of PV remains unclear, onset

secondary to vaccination has been reported, including vaccines against influenza, typhoid, rabies, hepatitis B, tetanus, diphtheria, and anthrax.²

With the ongoing COVID-19 pandemic, a massive number of individuals have received the vaccination globally, which has resulted in the report of a number of cutaneous manifestations, however autoimmune disorders like PV are less well described.¹ To our knowledge, there are at least six cases of PV developing following SARS-Cov-2 vaccination,³ however this number may be higher according to the Vaccine Adverse Events Reporting System (VAERS). Co-managed by the Centers for Disease Control and the U.S. Food and Drug Administration, VAERS (<https://vaers.hhs.gov>) accepts and analyzes reports of adverse events after a person has received a vaccination.⁴ There are at least 20 reported cases of pemphigus claimed to be associated with the mRNA-1273 (Moderna) vaccine, however no cause-and-effect relationship has been established.⁴

In this case, the development of PV following COVID-19 vaccination with the mRNA-1273 (Moderna) vaccine may be coincidental, however the following factors suggest a relationship may exist: the time interval between vaccination and symptom onset, successful response to standard treatment, and lack of other risk factors such as drug intake, self or family history of autoimmune disorder, recent infection or known malignancy.

CONCLUSION

While the patient described in this case presented with new onset PV following COVID-19 vaccination, a causal association between the mRNA COVID-19 vaccine and

PV needs further investigation. As vaccination remains a global initiative, continuing to record vaccine related events will help to better define potential causal relationship with PV and other potential side effects. Despite potential risks of triggering or exacerbating cutaneous pathologies, we recommend continued administration of the mRNA COVID-19 vaccination in the appropriate clinical scenario in order to curb the current pandemic.

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