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Case Report

Development of autoimmune pemphigus vulgaris following Chadox1 nCov-19 coronavirus vaccine (recombinant)

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ABSTRACT

Pemphigus vulgaris is a rare IgG-mediated autoimmune disease that affects the skin and mucous membranes, causing painful blistering. Pemphigus vulgaris has been reported to be triggered or exacerbated by various factors, including genetic vulnerability, certain drugs, and malignant diseases. We present a case of a patient who was admitted to the dermatology ward with complaints of multiple fluid-filled lesions, initially over the chest, containing clear fluid-filled, ruptured within 1 to 2 hours to leave behind painful raw areas, predominantly over the trunk, scalp, face, upper limbs in the past 2 weeks, and single raw erosions inside the oral cavity after receiving the second dose of Chadox1 nCov-19 coronavirus vaccine (Covishield™), and also mentioned he had developed similar symptoms after the 1st dose of COVID vaccine. We chose to report this case because of the unusual presentation of a rare COVID vaccine adverse drug reaction seen in India.

Keywords: Pemphigus vulgaris, Autoimmune disease, Covishield

INTRODUCTION

Pemphigus vulgaris (PV) is an autoimmune bullous disease resulting in the formation of IgG autoantibodies against desmogleins (Dsg 1 and Dsg 3), which affect the skin and mucous membrane.[1] PV is most prevalent in persons aged 45-65. The incidence of pemphigus among dermatology outpatients ranged from 0.09-1.8%. The incidence was 4.4 per million populations per year, according to a clinic-based questionnaire survey conducted in the Kerala district of Thrissur.[2] PV is a rare complication of SARS-CoV-2 vaccination in India. We report a case of Chadox1 nCov-19 coronavirus vaccine (recombinant) induced PV in a 40-years male patient.

CASE REPORT

A 40-year male patient has been admitted to the dermatology ward with chief complaints of multiple fluid-filled lesions, initially over the chest, containing clear fluid-filled, ruptured within a period of 1 to 2 hours to leave behind painful raw areas, predominantly over the trunk, scalp, face, upper limbs in the past 2 weeks and single raw erosions inside the oral cavity associated with pain on taking spicy food in the past 5 days. Past medication history shows that the patient had a similar lesion that had developed 4 days after receiving COVID vaccination 6 months back.

On examination, the patient was presented with multiple erosions over the face, trunk, and upper limbs. The lesions are yellowish-brown crusted erosions of varying sizes, coalescing to form large plaques, measuring 2×2 cm to 15×15 cm in size. Few lesions show peripheral collarette and cornflakes. Macerated erosion was found over both axillae. Single erosion over the posterior left buccal mucosa and violaceous pigmentation over the bilateral buccal cavity was presented. Thick yellowish adherent crusting was presented over the scalp (Figure 1).

Based on symptoms and past medical history the physician provisionally diagnosed it as an immunobullous disorder

and advised to take a test of electrocardiography (ECG), ultrasonography (USG) abdomen and pelvis, upper gastrointestinal (GI) endoscopy, 2D Echo, Biopsy, HIV, HBsAg, and biochemical parameters (Table 1). Based on subjective and objective data the patient was diagnosed with PV. Initially, the symptomatic treatment was provided and from day 3 pulse therapy was started and continued till discharge, after discharge - the same dose is converted to the oral route (Table 2).

Figure 1: Lesions on the chest and face region of the patient before initiation of therapy.

After the complete diagnosis of pemphigus vulgaris, the patient was treated with monoclonal antibiotic therapy i.e.; rituximab 500 mg iv first dose was given on the 14th day and the second dose was given on the 27th day. After both pulse therapy and monoclonal antibiotic therapy, the patient's condition improved; after discharge, the patient completely recovered (Figure 2a and b).

Table 1: Laboratory findings of the patient.

Test	Result
Punch biopsy	HPE: pemphigus vulgaris
Endoscopy	Normal
USG abdomen and pelvis	No sonological abnormality detected
ECG	Normal
HIV and HBsAg	Non-reactive

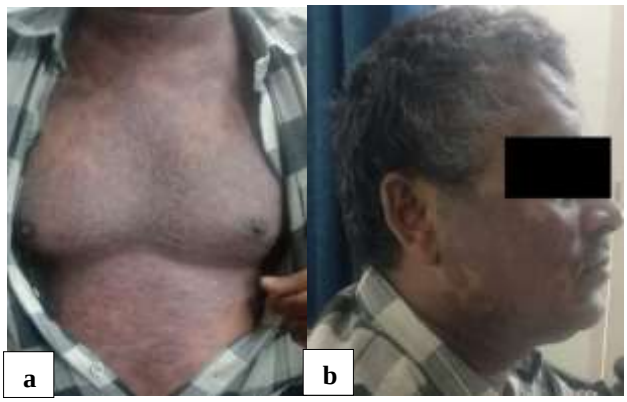

Figure 2: (a) Recovery of lesions on the chest region after the initiation of therapy, and (b) recovery of lesions on the face after initiation of therapy.

Table 2: The treatment given to the patient during therapy.

Drugs given	Generic name	Dose	Frequency	Number of days used
Injection taxim	Cefixime	1g	BD	6
Injection pantop	Pantoprazole	40 mg	OD	28
Tablet CPM	Chlorpheniramine malate	4 mg	OD	28
Tablet PCM	Paracetamol	500 mg	TID	28
Betamethasone cream	Betamethasone cream	-	BD	28
Liquid paraffin	Paraffin	-	TID	28
Soframycin cream	Framycetin	-	TID	28
Injection avil	Pheniramine	2 cc	OD	28
Tablet wysolone	Prednisolone	30 mg	OD	28
Tablet multivitamin	Vitamins B, A and D	-	OD	28
Injection rituximab	Rituximab	500 mg	2 doses	2
Saline compress	-	-	TID	28

DISCUSSION

The public and scientific interest in detecting immunological adverse effects of the novel severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) vaccinations is considerable. This is especially true for the mRNA-based vaccines that are currently available, as they are the first mRNA-based vaccines to be widely used.[3]

The ChAdOx1 nCoV-19 vaccination is a recombinant and non-replicating chimpanzee adenovirus with SARS-CoV-2 spike glycoprotein, which was taken by the patient in this case. Mild transient headaches, light-headedness, dizziness, myalgia, nausea, pain at the injection site, and a feverish feeling are all possible side effects of the vaccine.[4]

The COVID-19 vaccine induces a specific adaptive immune response to the virus, producing neutralizing antibodies against the SARSCoV2 spike protein. The

induction of the specific immune response followed by the SARS-CoV-2 vaccination could be associated with a mucosal hypersensitivity characterized by underlying vascular events without epithelial damage.[5]

In this case, the patient has developed oral erosion. Due to the development of an autoimmune response, the patient has developed lesions over the body. In moderate and severe illnesses, corticosteroids are the backbone of treatment, which has lately been supported by the anti-CD20 antibody rituximab, which has been followed in the case's therapy.

CONCLUSION

In our case, the patient has developed lesions after COVID vaccine intake. The patient was otherwise healthy before vaccination, with no history of skin conditions or past medical history. The punch biopsy report confirmed PV on histopathological examination. Although the purpose of this report is not to raise a public alarm about the vaccine's safety, the incidence of vaccine-related incidents requires documentation and may aid in the future definition of risk profiles for patients, particularly in those with subclinical autoantibody titers.

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REFERENCES

1. Kridin K, Schmidt E. Epidemiology of Pemphigus. JID Innov. 2021;1(1):100004.
2. Kanwar A, De D. Pemphigus in India. Indian J Dermatol Venereol Leprol. 2011;77(4):439.
3. Ishay Y, Kenig A, Tsemach-Toren T, Amer R, Rubin L, Hershkovitz Y, Kharouf F. Autoimmune phenomena following SARS-CoV-2 vaccination. Int Immunopharmacol. 2021;99:107970.
4. Sah R, Shrestha S, Mehta R, Sah SK, Rabaan AA, Dhama K, Rodriguez-Morales AJ. AZD1222 (Covishield) vaccination for COVID-19: Experiences, challenges, and solutions in Nepal. Travel Med Infect Dis. 2021;40:101989.
5. Azzi L, Toia M, Stevanello N, Maggi F, Forlani G. An episode of oral mucositis after the first administration of the ChAdOx1 COVID-19 vaccine. Oral Dis. 2022;28:2583-5.

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