

LETTER

New onset of pemphigus foliaceus following BBIBP COVID-19 vaccine

Dear Editor,

A 75-year-old man was referred to our clinic with pruritic figurate wheals and cutaneous blisters along with crusted erosions on his chest, abdomen, and back appearing 2 weeks after administration of a booster dose of Sinopharm (BBIBP-CorV) vaccine (5 months after the second dose). He reported an incidence of pruritic cutaneous wheals 10 days after the first dose of Sinopharm vaccine on the chest and abdomen with the wax and wane course of the lesions improved by oral anti-histamines after 2 months. He was hospitalized for COVID-19 infection with respiratory symptoms and malaise without any cutaneous manifestations 1 year ago. He did not recall any usage of new medications or drugs to trigger the cutaneous eruption. He was evaluated for SARS-CoV-2 infection, which was negative. Physical examination revealed multiple erythematous erosive or crusted lesions on his face, chest and back (Figure 1). Biopsy was taken from his lesions demonstrating superficial epidermal bullae with mild spongiosis and also superficial dermal perivascular inflammation (Figure 2). In addition, a direct immunofluorescence study reported intra-epidermal deposition of IgG and C3. All these findings were in compatible with the diagnosis of pemphigus foliaceus. He was treated with topical corticosteroid and two doses of intravenous rituximab 1gr and his lesions were improved in 4 weeks significantly.

Various cutaneous adverse events have been reported with COVID-19 vaccines ranging from focal site reactions including focal erythema and swelling to generalized cutaneous eruptions.¹



FIGURE 1 Multiple erythematous erosive lesions on the back

Interestingly, recent studies delineated the occurrence of autoimmune blistering diseases (AIBDs) after COVID-19 vaccine administration.² Recently, several reports of pemphigus vulgaris and bullous pemphigoid after COVID-19 vaccination have been published.³ In this study, we emphasized the incidence of pemphigus foliaceus after vaccination while other remarkable investigations described cases of de novo bullous pemphigoid and pemphigus vulgaris or flare-up of these diseases.^{4,5} In the review of the literature, we have found three other new cases of pemphigus foliaceus after the administration of COVID-19 vaccines (Table 1).⁵⁻⁷

The first case of pemphigus vulgaris was reported in a 40-year-old woman who presented with painful oral erosions and cutaneous lesions appearing 5 days after injection of the first dose of the mRNA vaccine BNT162b2.⁸ Furthermore, Hali et al., in a case series of five patients, described three cases of bullous pemphigoid, one case of pemphigus vulgaris, and a case of pemphigus foliaceus occurred after the second dose of Pfizer/BioNTech COVID-19 vaccine.⁵ Yıldırıcı et al. reported another case of pemphigus foliaceus occurring after the first shot of the BNT162b2 mRNA COVID-19

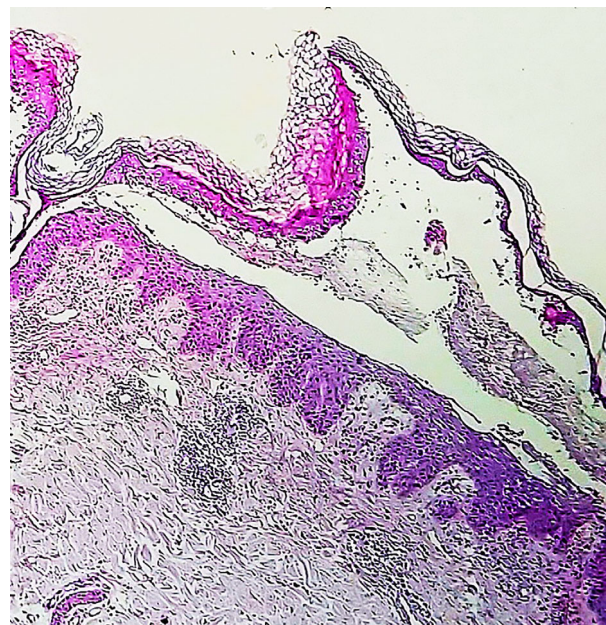


FIGURE 2 Superficial epidermal bullae with mild spongiosis and also superficial dermal perivascular inflammation (H&E*40)

TABLE 1 The demographic, diagnosis, treatment, and outcome data of de novo pemphigus vulgaris and pemphigus foliaceus patients after COVID-19 vaccination

N	Author	Age/sex	Diagnosis	Localization	Vaccine	Number of dose	Latency after vaccination (d)	Histopathology	DIF	Dsg1/Dsg3	Treatment	Outcome
1	Our case	75/M	PF	Cutaneous	Sinopharm	third	14	Superficial bullae	IgG/C3 intercellular deposition		Rituximab	Improvement in 4 weeks
2	Hali F et al.	50/F	PF	Cutaneous	Pfizer	Second	15	Superficial bullae	IgG/C3 intercellular deposition	NA	Corticosteroid	Improvement in 3 weeks
3	Lua A et al.	83/M	PF	Cutaneous	Pfizer	Second	2	Subacutespongiotic dermatitis	C3 intercellular deposition	+/-	Corticosteroid	Clinical improvement
4	Yildirici S et al.	65/M	PF	Cutaneous	Pfizer	First	30	Intraepidermalacantholysis	IgG/C3 intercellular deposition	+/-	Corticosteroid and Azathioprine	Improvement in 2 weeks

Abbreviations: d, days; F, female; M, male; N, number; NA, not available; PF, pemphigus foliaceus; PV, pemphigus vulgaris.

vaccine. Cutaneous lesions developed 1 month after vaccination and resolved significantly with the treatment of prednisolone and azathioprine.⁶ Moreover, Lua et al. described an 83-year-old male referred with extensive crusted erosions on his face, scalp, trunk, and limbs starting 2 days after the administration of the second dose of the Pfizer vaccine. Diagnosis of pemphigus foliaceus was confirmed by histopathology and direct and indirect immunofluorescence.⁷

Kasperkiewicz et al., in a systematic review of 932 immunized subjects, reported an incidence of 5.7% for the de novo AIBDs and AIBDs flare-up occurring in 9.7% of individuals after COVID-19 vaccination. However, the administration of vaccines did not affect the clinical course in 84.5% of patients. Overall, this study could not conclude the definite association between COVID-19 administration and AIBDs; consequently, routine recommendations for vaccination in AIBDs patients should not be influenced by this information.³ In another notable systematic review investigating the relation between common vaccines and AIBDs, there were not enough data to propose a correlation between administration of vaccines and increased risk of AIBDs.⁹

Careful gathering of data on the incidence or worsening of existing AIBDs should be considered in large online databases to enlighten the causality of cutaneous adverse events happening after the COVID-19 vaccination. An acquaintance of healthcare providers with the possibility of occurrence of AIBDs after vaccination should be contemplated.

AUTHOR CONTRIBUTIONS

Mohammadreza Pourani: Acquired the clinical data and wrote the manuscript. Farahnaz Bidari-Zerehpooch: Acquired the histopathology data and contributed to manuscript preparation. Azin Ayatollahi: Contributed to manuscript preparation and editing. Reza M. Robati: Designed and supervised all aspect of the project, served as the corresponding author and wrote and edited the manuscript. All the authors have read and approved the manuscript.

CONFLICT OF INTEREST

The authors declare no conflict of interest.


DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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