Symmetrical drug-related intertriginous and flexural exanthema-like eruption after COVID-19 vaccine

To the Editor,

Baboon syndrome (BS) is a systemic contact dermatitis characterized by an erythema in inguinal and perianal areas with exanthema in other flexural areas. The non-contact allergic variant of BS is referred as symmetrical drug-related intertriginous and flexural exanthema (SDRIFE). We report two cases of SDRIFE-like eruption occurring after COVID-19 vaccine.

Case 1: A 52-year-old woman, presented with an itchy skin eruption which appeared 5 days after the second injection of SARS-CoV-2 Pfizer-BioNTech Comirnaty COVID-19 vaccine. She well tolerated the first dose. On examination, she presented a demarcated erythema of the inferior cervical folds, axillae and gluteal area (Fig. 1a). There was no palmoplantar, facial or mucosal involvement. No systemic symptoms were found. There was no use of drugs or herbal products in her history. SARS-CoV-2 PCR test and serology were negative. The complete blood count, liver and renal function tests were normal. Serologic tests for viral and bacterial infections including Cytomegalovirus, Epstein–Barr virus, hepatitis B and C, Human immunodeficiency virus, Chlamydia and Mycoplasma were negative. The diagnosis of SDRIFE-like eruption induced by Pfizer-BioNTech vaccine was retained. The rash disappeared spontaneously 5 days after its beginning. Patch tests performed, 5 weeks after complete resolution of lesions, both on healed and normal skin with pure Pfizer-BioNTech vaccine prepared <4 h in 0.9% saline before, were negative at day (D)3 and D5. Prick test with Pfizer-BioNTech vaccine was negative at immediate and delayed readings (D1, D3 and D5). Intradermal test (IDT) with this vaccine diluted at 1/10 in 0.9% saline was performed. The immediate reading at 20 min was negative, the delayed readings at 10 h, D2 and D3 were all positive (Fig. 2).

Case 2: A 57-year-old woman consulted with an acute, pruritic skin eruption which started 3 days after the second injection of CoronaVac vaccine. Dermatological examination revealed sharp boarded erythematous plaques on the back, gluteal and anogenital areas, flexural areas of the forearms, submammary and inguinal folds. There was no facial, palmoplantar or mucosal involvement. Other systemic examinations were normal. The lesions began to desquamate 2 days after their onset (Fig. 2b,c). She was diabetic using Metformin for 6 years. Except her usual drug, there was no use of new drugs or herbal products. Laboratory tests were in normal range. RT-PCR test for SARS-CoV-2 was negative. Viral serological tests were negative. The clinical presentation and history were compatible with the diagnosis of SDRIFE-like eruption

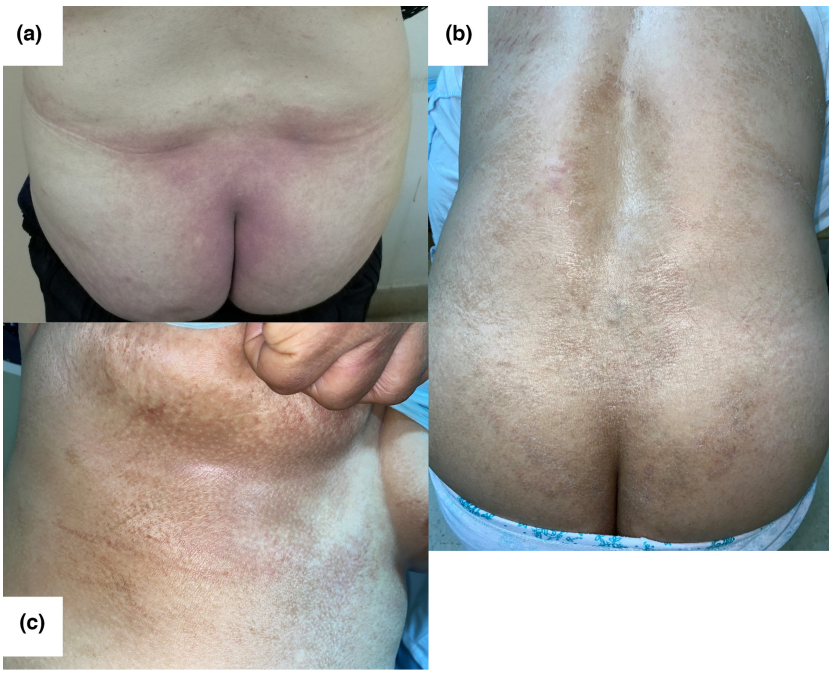

Figure 1 (a) Skin eruption on the gluteal area after the second injection of Pfizer-BioNTech mRNA vaccine. (b) Skin desquamative eruption, affecting the back and the gluteal area, following the second injection of CoronaVac vaccine. (c) Pruritic plaque on the submammary fold after the second injection of CoronaVac vaccine.

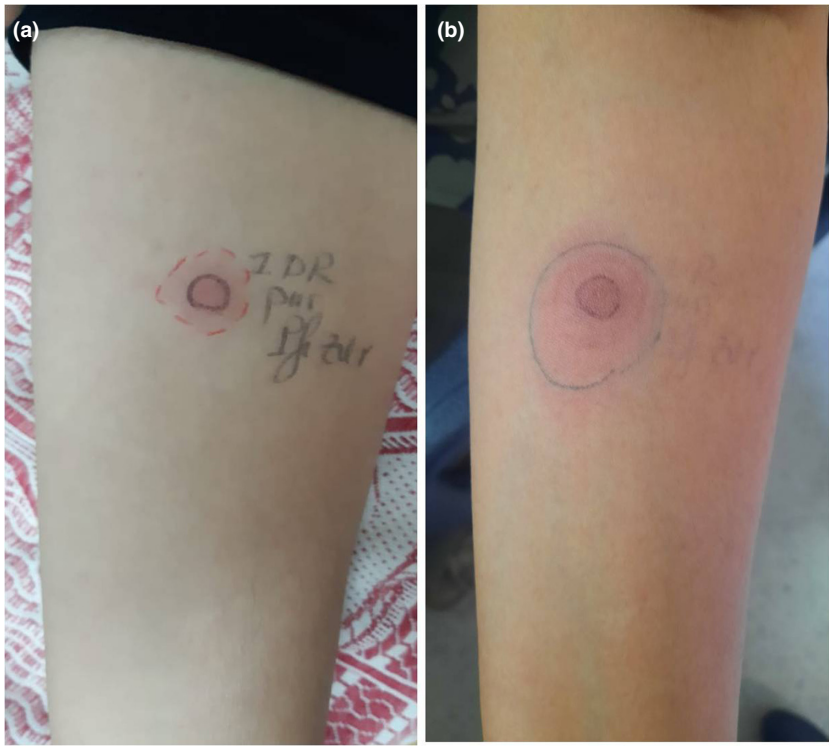

Figure 2 Positive intradermal test with BioNTech mRNA vaccine at 10 h (a), D2 and D3 (b).

induced by CoronaVac vaccine. For treatment, we started topical corticosteroids and oral antihistamine. The eruption resolved 1 week after its onset. One month later, the patient underwent epicutaneous tests in previously lesional and non-lesional skin. Prick, IDT and patch tests were negative.

We report two cases of SDRIFE-like eruption occurring after COVID-19 vaccine (Pfizer-BioNTech and CoronaVac). To our knowledge, there are only four recent reported cases of SDRIFE-like eruption related to COVID-19 vaccines Oxford/Astrazeneca (chAdOx1-S Covid 19 Vaccine).[1–3] SDRIFE is a drug-related type IV hypersensitivity eruption that involves the intertriginous or flexural folds and the gluteal area. It has been reported in association with beta-lactams, antihypertensives and chemotherapeutic agents. Similar skin rash has been also reported with COVID-19 disease.[4] However, it has not been clearly revealed whether this cutaneous eruption is related to the COVID-19 infection or to the drugs used to treat the infection. The diagnosis of SDRIFE is defined by five clinical criteria which were applicable for our two patients except the exposure to a systemically administered drug. Pfizer–BioNTech is an mRNA-based COVID-19 vaccine while CoronaVac Vaccine is an inactivated virus vaccine. Their most common cutaneous adverse reactions are delayed local reactions and urticarial and morbilliform eruptions.[5] The SDRIFE-like reaction in our patients could be related to the vaccines or the adjuvants. The adjuvant associated with the Pfizer-BioNTech vaccine is polyethylene glycol (PEG) 2000.[6] Patch tests with PEG or polysorbate alone were not performed in our first patient due to the negativity of the patch test with the vaccine. This patient showed positive IDT with the Pfizer-BioNtech vaccine. However, IDT could be positive in healthy patients having received the vaccine while these tests remain negative in non-immunized patients.[6] Therefore, we cannot exclude the possibility that our positive IDT was the consequence of a local immune response to the vaccine in this already immunized patient.[5] Our second patient had CoronoVac vaccine which contains inactivated SARS CoV-2 antigen, aluminium hydroxide, disodium hydrogen phosphate, monosodium hydrogen phosphate, sodium chloride and sodium hydroxide.[1] Cases of BS induced by metals have been reported such as mercury, nickel, cobalt, chromium, zinc and gold.[1] To our knowledge, there are no reported cases of BS related to aluminium.[1] Few cases of systemic contact dermatitis to thiomersal in vaccines have been reported.[7] CoronoVac and Pfizer-BioNTech vaccines do not contain thiomersal.

We suggest that COVID-19 vaccine induced SDRIFE-like eruption should be kept in mind as a possible complication. The etiopathogenic mechanism of this reaction remains to be identified.

Acknowledgement

None.

Conflicts of interest
None.

Funding source
None.

Data Availability Statement
Data sharing not applicable – no new data generated.

I. Lahouel,[1] N. Ben Salah,[1,*] N. Ben Fadhel,[2] F. Chahed,[2] N. Ouni,[1] H. Belhadjali,[1] K. Aouam,[2] J. Zili[1]

[1]Dermatology Department, Fattouma Bourguiba Hospital, Dermo-Respiratory Research Laboratory UR14 SP 03, University of Medicine, Monastir, Tunisia, [2]Pharmacology department, Fattouma Bourguiba Hospital, University of Medicine, Monastir, Tunisia

*Correspondence: N. Ben Salah. E-mail: nesrinebensalah2612019@gmail.com

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DOI: 10.1111/jdv.18108

Impact of containment and social distancing on the number of community-acquired *Staphylococcus aureus* skin infections

Editor

Community-acquired *Staphylococcus aureus* skin infections (CA-SASI) outbreaks are regularly reported within closed communities suggesting a direct transmission person-to-person.[1–3] However, most cases of CA-SASI occur sporadically and are not clearly related to a cross transmission. Otherwise, *S. aureus* is present as a colonizing bacteria in the nares in 30% of individuals.[3] Therefore, the origin of the SA during an individual CA-SASI is most of the time is a challenging question whether the result of a cross transmission from a person colonized or infected or from a pre-existent body site colonized or in-house reservoir from fomites.

The fight against the covid-19 outbreak has resulted in several measures such as lockdown, social distancing and increased hand hygiene. In France, a rigorous lockdown was implemented from 16th of March 2020 until the 11th May 2020 and a second one the 29th October 2020.

We aimed to study the impact of the first lockdown associated with social distancing and hand hygiene on the number of CA-SASI during the following 6 months, between both lockdowns of 2020.

The study took place in our institution in the South of France. Since 1999 we have implemented a survey of CA-SASI. All patients diagnosed with CA-SASI are prospectively enrolled for descriptive clinical, bacteriological and epidemiological studies as previously reported.[4,5] We Compared the crude number of CA-SASI from May to October in 2020 to the same period of the years 2016–2019. We have also studied the potential difference of emergency activity during the post-lockdown.

Statistics: we have calculated the cumulative monthly mean of numbers of CA-SASI from May to October of the years 2016 to 2019 and their respective 95% confidence intervals [95% CI is obtained for a normal (Gauss) distribution by the following formula: 95% CI = mean $\pm$ 1.96 standard deviation (or variance$^{1/2}$)] and compared to the cumulative monthly numbers from May to October in 2020.

Ethics: The study was approved by the local research ethic committee.

The monthly cumulative numbers of CA-SASI and cumulative means (95% CI) from May to October 2016–2019 and in 2020 are indicated in Table 1 and Fig. 1. We have found a 15% decline of admission into the emergency department during May–October 2020 compared to 2016–2019 and have applied a corresponding correction.

We did not find any significant difference of the crude number CA-SASI during the period May to October 2020 compared to the same periods from 2016 to 2019 considering crude and corrected numbers.

The national implementation of lockdown associated with social distancing and hygiene measures gives the opportunity to study the transmission of several infectious agents. Indeed a significant decrease in acute respiratory infections in children and seasonal influenzae has been observed.[6,7] Incidence of invasive meningococcal diseases decline was 75% lower

