

## LETTER TO THE EDITOR

## Hand–foot syndrome like eruption following mRNA COVID-19 vaccine

Dear Editor,

Recently, we read with great interest the published article by Nuno-Gonzalez *et al.*<sup>1</sup> entitled ‘Palmoplantar erythrodysesthesia: a diagnostic sign of COVID-19’ discussing a new skin manifestation of SARS-CoV-2 infection.

Here, we describe a 60-year-old man presenting with acral desquamation following the third dose of SARS-CoV-2 vaccine.

His medical history revealed that he received, 6 months ago, two doses of Astrazeneca-Oxford vaccine, without any cutaneous or systemic manifestations. The third dose of SARS-CoV-2 mRNA vaccine (Pfizer-BioNTech) was administered at 29 November 2021.

Forty-eight hours after the third dose, he noticed dysesthesia and tingling on palmar and plantar areas. A non-itchy acral desquamation associated with bilateral and painful erythema appeared on both palms and soles, 3 days after vaccination.

Physical examination revealed redness and large bilateral acral desquamation (Fig. 1a,b,e) associated with oedema. The desquamation extended to the dorsal hands and feet (Fig. 1c,d). No

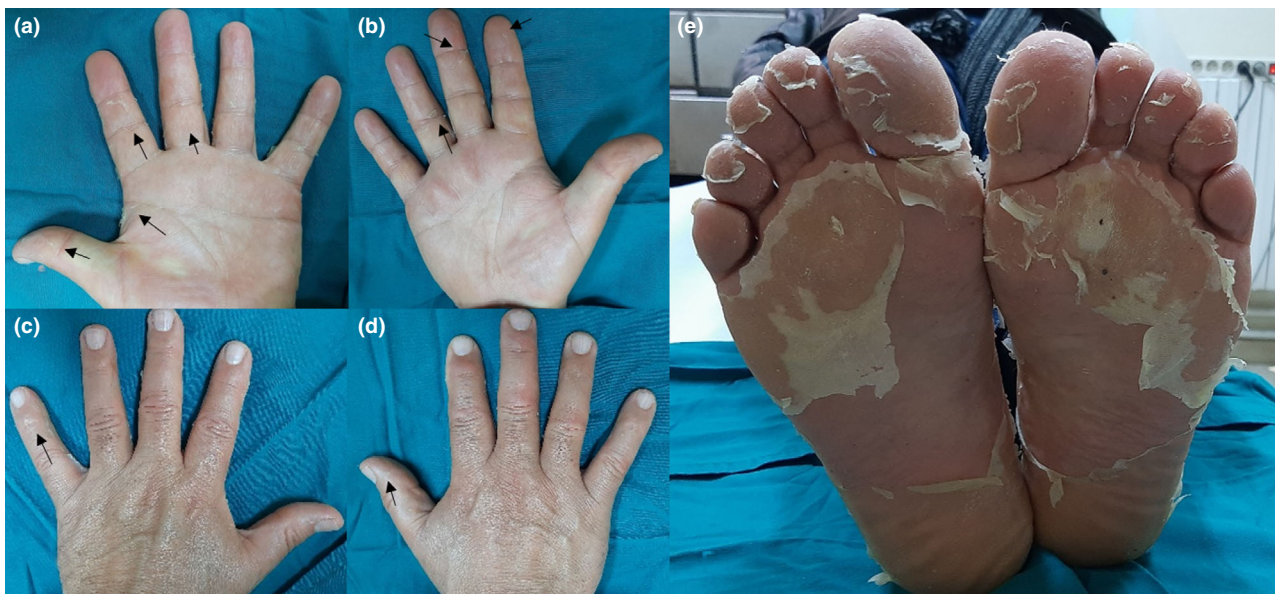
history of recent SARS-CoV-2 infection was reported. He denied any recent drug intake or topical application of cream or plant, before the onset of the cutaneous lesions.

We ruled out concomitant dermatophytosis by negative result of fungal culture. Blood tests were within normal levels, showing especially negative serologic tests for hepatitis (B/C), HIV, Parvovirus B19 and Epstein–Barr virus. SARS-CoV-2 serology revealed positive IgG (4.80) and negative IgM (0.26).

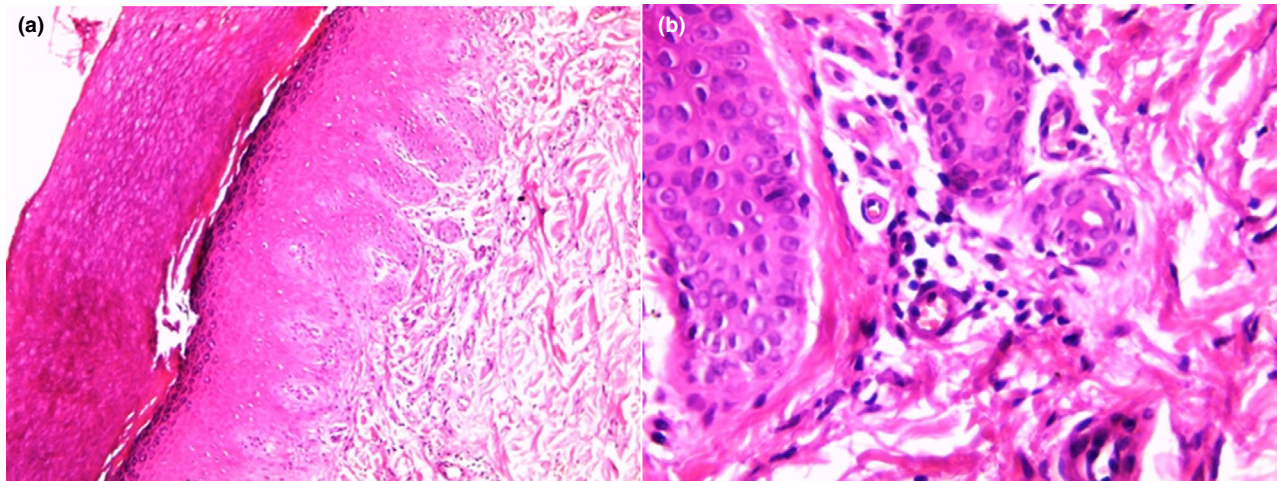
Histological examination of skin biopsy showed detachment of the keratin layer of the epidermis associated with slight inflammatory infiltrate made of lymphocytes (Fig. 2).

The clinical symptoms presented by our patient were mimicking palmoplantar erythrodysesthesia, also known as hand–foot syndrome (HFS). We prescribed moisturizing cream. A total healing of lesions was obtained within 3 weeks. No recurrences were observed at 1-month follow-up.

Hand–foot syndrome is a common skin adverse effect associated with certain systemic chemotherapy drugs.<sup>2</sup> It is characterized by erythema, oedema and burning sensation, especially over palmoplantar surfaces.<sup>2</sup> The pathogenesis of this syndrome is not fully understood.<sup>3</sup> It is believed to be a toxic reaction due to the local accumulation of drugs in sweat glands and the rich vascularization of the extremities.<sup>3</sup> Interestingly, in our case, the lesions were similar to those reported by Nuno-Gonzalez *et al.*<sup>1</sup>



**Figure 1** (a–d) Desquamation of palmar and dorsal surface of the fingers associated with oedema. (e) Symmetric desquamation of the feet.



**Figure 2** (a) Histopathological examination of skin biopsy showing epidermal detachment (Haematoxylin and Eosin  $\times 100$ ); (b) Mild dermal lymphocytic infiltrate (Haematoxylin and Eosin  $\times 400$ ).

in 22 patients (7.2%). He could not attribute this cutaneous manifestation to SARS-CoV-2 infection or symptomatic therapy. Palmoplantar desquamation was noticed in 77 patients (25.3%) and was described as a post inflammatory desquamation.<sup>1</sup>

Palmoplantar involvement was also reported with poxvirus-related erythromelalgia in China.<sup>4</sup> Besides, other virus such as Zika, Chikungunya or HIV could be associated with palmoplantar burning sensation and plantar desquamation.<sup>5,6</sup>

This observation raises more questions about the cutaneous effects of the SARS-CoV-2 vaccine, than it answers. We can hypothesize that the immune response developed against the spike protein found on the surface of SARS-CoV-2 virus and produced after vaccination may play a role.

Further studies are needed to clarify the pathogenic mechanism behind this uncommon cutaneous manifestation of SARS-CoV-2 vaccine, even if no causal association can be attributed.

### Acknowledgement

The patient in this manuscript has given written informed consent to publication to his case details.

### Conflict of interest




None declared.

### Funding source

None.

### Data availability statement

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

M. Daldoul,<sup>1,\*</sup>  M. Korbi,<sup>1</sup>  N. Ben Salah,<sup>1</sup>   
A. Bellalah,<sup>2</sup> H. Belhadjali,<sup>1</sup> J. Zili<sup>1</sup>

<sup>1</sup>Department of Dermatology, Fattouma Bourguiba University Hospital of Monastir, Monastir, Tunisia, <sup>2</sup>Department of Pathology, Fattouma Bourguiba University Hospital of Monastir, Monastir, Tunisia

\*Correspondence: M. Daldoul. E-mail: mariemdaldoul29@gmail.com

### References

- 1 Nuno-Gonzalez A, Magaletsky K, Feito Rodríguez M *et al*. Palmoplantar erythrodysesthesia: a diagnostic sign of COVID-19. *J Eur Acad Dermatol Venereol* 2021; **35**: 247–249.
- 2 Hueso L, Sanmartín O, Nagore E *et al*. Chemotherapy induced acral erythema: a clinical and histopathologic study of 44 cases. *Actas Dermosifiliogr* 2008; **99**: 281–290.
- 3 Lou Y, Wang Q, Zheng J *et al*. Possible pathways of capecitabine-induced hand-foot syndrome. *Chem Res Toxicol* 2016; **29**: 1591–1601.
- 4 Mendez-Rios JD, Martens CA, Bruno DP, Porcella SF, Zheng ZM, Moss B. Genome sequence of erythromelalgia-related poxvirus identifies it as an ectromelia virus strain. *PLoS ONE* 2012; **7**: e34604.
- 5 Dobson JS, Levell NJ. Spotting zika spots: descriptive features of the rash used in 66 published cases. *Clin Exp Dermatol* 2019; **44**: 4–12.
- 6 Adışen E, Önder M. Acral manifestations of viral infections. *Clin Dermatol* 2017; **35**: 40–49.

DOI: 10.1111/jdv.18338