

## Correspondence

### Acral chilblain-like lesions following inactivated SARS-CoV-2 vaccination

Dear Editor,

The novel Coronavirus Disease 2019 (COVID-19) pandemic continues to harm health, economics, education, sociocultural and political terms worldwide. As of the beginning of 2021, successful development of multiple safe and effective SARS-CoV-2 vaccines has been started to provide mass immunity for COVID-19. Vaccines used today: mRNA vaccines carrying one or more genes of SARS-CoV-2; the SARS-CoV-2 protein or protein fragments that trigger the immune system are weakened inactivated SARS-CoV-2 virus vaccines; virus (usually adenoviruses) vaccines that trigger the immune response by revealing the SARS-CoV-2 genes.<sup>1</sup> Cutaneous lesions related to COVID-19 may be attributed to a collateral effect of the activation of the immune system rather than being a direct effect of the virus, despite relatively common.<sup>2</sup> Cutaneous reactions following COVID-19 vaccination, such as herpes zoster and lichen planus, have been reported.<sup>3</sup> Herein, we present two cases who developed acral chilblain-like lesions (CLL) after the inactivated SARS-CoV-2 vaccine (*CoronaVac*, by *Sinovac Life Sciences, Beijing, China*) to draw attention to the possible cutaneous side effects of the vaccine.

Two male patients aged 44 and 53 years old were incidentally presented to our dermatology outpatient clinic due to acral skin lesions on their hands. There were no relevant medical and family histories, including autoimmune connective tissue diseases. Our cases had no previous history of COVID-19 disease or a recent contact to suspected or confirmed cases of COVID-19. However, asymptomatic SARS-CoV-2 infection before our first examination cannot be excluded. Seven days after the administration of the inactivated COVID-19 vaccine (*CoronaVac*), they presented with chilblain-like lesions on the dorsal hands. Dermatological examination revealed mildly pruritic, edematous violaceous plaques and nodules on the dorsal hands of one patient (Fig. 1) and erythematous-to-violaceous patches on the marginal side of the fingers of both hands of the other patient (Fig. 2), a picture suggestive of CLL. The patients were otherwise healthy with irrelevant cardiovascular and pulmonary examinations. The RT-PCR test of the nasopharyngeal swab from both patients was negative. Biopsy was not performed. Testing for SARS-CoV-2 IgG detection was not feasible. Topical corticosteroids and antihistamines were prescribed. Three weeks later, and on a telephone call, both patients reported complete improvement of their lesions. They also reported no other cutaneous or systemic signs of interest.





1152 **Figure 1** Edematous violaceous plaques and nodules on the dorsal hands of a 44-year-old male patient



**Figure 2** Purpuric patches on the marginal side of the fingers of a 53-year-old male patient

The causal relation between COVID-19 and CLL is still debatable as many patients are asymptomatic or pauci-symptomatic and RT-PCR tests from skin specimens and even serological studies are often negative. That localized acral skin injury might be the result of robust immune-mediated response triggered by SARS-CoV-2. CLL patients hence present with mild or no symptoms, negative RT-PCR, and localized endothelial damage to the acral sites.<sup>4</sup> CLL patients are liable to relapse at new contact with SARS-CoV-2.<sup>4</sup> With deployment of inactivated SARS-CoV-2 vaccine, it is aimed to create an optimum immunological response by giving attenuated particles of the virus. CLL may occur/recur during contact with SARS-CoV-2 components, such as following vaccination. CLL were thought to be associated with the vaccine in our patients who had not had a significant history other than administration of inactivated SARS-CoV-2 vaccine. The possibility of a late onset CLL of a past COVID-19 infection coincidentally presented soon after vaccination could not be excluded. To the best of our knowledge, this is the first report of acral CLL following inactivated

SARS-CoV-2 vaccine against COVID-19. Davido et al.<sup>5</sup> reported a case of "blue toes" in a 40-year-old woman 4 days after the first dose with "Pfizer-BioNTech-162b2 vaccine". It has been attributed to the fact that the inactivated vaccine can affect the immune system in a similar way to COVID-19 disease.<sup>1</sup> Further accumulating case reports/series are awaited to further confirm or refute our observation. Till that, it should be considered that CLL may develop in patients recently administered inactivated SARS-CoV-2 vaccine.

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