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## Subacute cutaneous lupus erythematosus induction after SARS-CoV-2 vaccine in a patient with primary biliary cholangitis

Dear Editor,

We describe a subacute cutaneous lupus erythematosus (SCLE) case developed after vaccination with mRNA COVID-19 vaccine.<sup>1</sup>

A 30-year-old Italian woman presented due to the sudden occurrence of papules and plaques on her face and upper back. The eruption started following a day spent outdoors, ten days after receiving the SARS-CoV-2 mRNA vaccine second dose (Pfizer, Cominarty). At the time of our consultation, we observed purplish, erythematous, and scaly papules and plaques on the upper back (Fig. 1a), cheeks, temples, and forehead (Fig. 2a). The rest of the skin was unaffected.



**Figure 1** (a) Eruption on the upper trunk and erythematous plaques of the face. Note the small, erythematous, and slightly scaly papules of the back. (b) Complete resolution of the eruption, after three weeks of therapy, was achieved. Still, post-inflammatory hypopigmented macules are visible on the back.

She reports that she has not changed her habits, has not introduced new drugs or suffered from new diseases in the last year. However, her past medical history was complex: she was born with biliary tract atresia, operated on with Kasai surgery. She developed portal hypertension and was treated with ursodeoxycholic acid for primary biliary cholangitis. Past



**Figure 2** (a) Erythematous plaque of the face (b) Complete resolution after the therapy.

blood chemistry highlighted strong positivity for anti-double strand DNA (anti-dsDNA) and mild positivity for anti-nucleosomes and anti-histones antibodies. Past rheumatological ruled out signs of connective tissue disease and recommended annual follow-up.

Skin biopsy showed hyperkeratosis, superficial perivascular and perifollicular lymphocytic infiltration and vacuolization of the basement membrane.

Blood exams showed marked leukopenia and thrombocytopenia, complement consumption, increased anti-dsDNA, anti-Sm, and anti-nRNP and new positivity for anti-Ro/SSA, compared to the last panel of exams.

The histological characteristics, positivity to anti-Ro/SSA antibodies and clinical manifestations led to the diagnosis of SCLE.<sup>2</sup>

Suspecting a vaccine cause, we evaluated the probability of an adverse drug reaction using the Naranjo scale.<sup>3</sup> We considered timing, the absence of new drugs introduced or changes in habits and the previous case reports retrieved in literature, some of which have similar cases.<sup>4</sup> According to the Naranjo scale, we considered the SCLE onset as probably triggered by the SARS-CoV-2 vaccination.

We started systemic steroid treatment with a suboptimal prednisone dose (0.4 mg/kg/day) due to the increased infectious risk and daily furoate mometasone topical cream. After three weeks, therapy led to an almost complete resolution of the skin lesions, still with residual hypopigmentation on the back (Figs 1b and 2b).

We then referred the patient to the rheumatologist to evaluate the introduction of systemic hydroxychloroquine.

Among the possible explanations, we know that tumor necrosis factor-alpha (TNF- $\alpha$ ) and interferon-gamma (IFN- $\gamma$ ) are increased by infections and vaccinations, which lead to cytokine release and CD4-type 1 helper T cell (Th1) recruitments. High levels of Th1 cells and inflammatory state have been reported in affected skin of patients with SCLE manifestations, which can explain flare episodes in predisposed patients.<sup>5</sup>

In this case, the patient had positive antibodies specific for LE (ds-DNA and anti-histones) but not anti-Ro/SSA. Until now, she had never manifested any clinical signs of LE except for an alteration of the hemogram, probably caused by splenomegaly secondary to portal hypertension.

With this case report, we aim to increase the awareness of the rare skin manifestations elicited by Sars-Cov-2 vaccines. We recommend dermatologists to carefully evaluate any skin reactions that may arise after a vaccination.




#### Conflict of interest

The authors have no conflict of interest to declare.

The patients in this manuscript have given written informed consent to the publication of their case detail.

#### Data availability statement

Data available on request from the authors.

C. Zengarini,<sup>1,2</sup>  A. Pileri,<sup>1,2,\*</sup> F.P. Salamone,<sup>1,2</sup> B.M. Piraccini,<sup>1,2</sup>  G. Vitale,<sup>3</sup> M. La Placa<sup>1,2</sup> 

<sup>1</sup>Dermatology Unit, IRCCS of Azienda Ospedaliero-Universitaria di Bologna, Bologna, Italy, <sup>2</sup>Dermatology Unit, Department of Experimental, Diagnostic and Specialty Medicine (DIMES), University of Bologna, Bologna, Italy, <sup>3</sup>Internal Medicine Unit for the Treatment of Severe Organ Failure Unit, IRCCS Azienda Ospedaliero-Universitaria di Bologna, Bologna, Italy

\*Correspondence: A. Pileri. E-mail: alessandro.pileri@unibo.it

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## COVID-19 cutaneous manifestations in pediatric patients: 24 multisystem inflammatory syndrome in children and six Kawasaki disease cases

To the Editor,

The scientific understanding of the dermatological implications of COVID-19 is rapidly evolving. A variety of cutaneous manifestations associated to COVID-19 have been described in recent reports published in the literature.<sup>1</sup>

Emerging evidence shows that children with COVID-19 can develop a condition called “multisystem inflammatory syndrome in children” (MIS-C), which is also known as “pediatric