

**IMCAS: LETTER**

## Urticaria in an infant with SARS-CoV-2 positivity

Dear Editor,

Last months have been marked by the global spread of the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), responsible for the coronavirus disease 19 (COVID-19) pandemic.

COVID-19 occurs predominantly with respiratory symptoms such as cough and dyspnea in addition to fever, muscle pain and, occasionally, loss of smell and taste. Despite that, many reports have established the clinical features of COVID-19 patients; some potential dermatological patterns have been correlated to the disease (maculopapular rashes: 47%, pseudo-chillblain acral lesions: 19%, urticarial lesions: 19%, vesicular eruptions: 9%, livedo or necrosis: 6% of the study sample).<sup>1</sup>

We present a case of a giant acute urticaria in an infant patient with SARS-CoV-2 positivity, presenting only skin involvement.

A 6-month-old, male infant, whose parents were positive to SARS-CoV-2, underwent polymerase chain reaction for COVID-19 by a nasopharyngeal smear test, with a positive result. Although his parents had respiratory symptoms, he was asymptomatic.

Nevertheless, after 2 weeks, the infant developed a giant urticaria, with multiple lesions, mainly affecting the trunk and limbs (Figures 1 and 2).

After conducting an accurate medical history, the disease has not been correlated neither with drugs (topical or systemic), bacterial or parasitic infections, inhalant exposure or insect bites. Other allergies such as allergic rhinitis, atopic dermatitis and food allergy were not reported.

Laboratory findings were within the normal ranges.

Considering the positivity to COVID-19, the diagnostic hypothesis was urticaria triggered by viral infection.

Therefore, the treatment with betamethasone (soluble tablets, 0.5 mg/d for 7 days) led to clinical improvement. After 2 weeks, a new test for COVID-19 was conducted, with a negative result.

Urticaria occurs quite often in pediatric population, with a prevalence of 3.4% to 5.4%.<sup>2</sup>

Anamnesis and clinical examination are crucial for infant patients, and often reveal an etiology.

The causes of acute urticaria in pediatric subjects differ significantly from those in adults. Food allergies, viral infections and drug-related causes are predominant in infants, whereas chronic urticaria (CU) is mostly due to physical causes, even though, in most cases, CU in children is spontaneous and no trigger cause is found.<sup>3</sup>

Furthermore, latest reports detected urticaria as a common, prodromal clinical finding among adult COVID-19 patients, with a variable timing of appearance: some lesions appearing before onset of fever, while others 48 hours after.<sup>4</sup>

Nevertheless, very few data are available concerning the correlation between urticaria and COVID-19 in infants.

The evaluation of 140 COVID-19 patients from China revealed that 1.4% reported CU. Moreover, interestingly, patient sample ranged from 25 to 87 years, and any infant patients were included.<sup>5</sup>

In addition, Recalcati et al evidenced that 18 of 88 COVID-19-positive patients analyzed (20.4%) developed cutaneous lesions in course of the disease; urticaria was diagnosed in three cases.<sup>6</sup>

In conclusion, we suggest to consider SARS-CoV-2 infection as a potential cause of urticaria in asymptomatic pediatric patients, the unknown carriers of the infection.



**FIGURE 1** Erythematous wheals localized on the left arm. Picture sent by patient's parents (tele dermatology)



**FIGURE 2** Erythematous wheals localized on the left leg. Picture sent by patient's parents (teledermatology)

In our study, lack of maturation of innate and adaptive immune defense mechanisms in infant could explain not only the susceptibility infectious disease, but also the resulting reduced inflammatory response, which provide the absence of systemic symptoms.

#### ACKNOWLEDGMENT

The parents have given written informed consent for publication.

#### CONFLICT OF INTEREST

The authors declare no conflicts of interest.

#### AUTHOR CONTRIBUTIONS

Concetta Potenza, Nevena Skroza and Ilaria Proietti conceived of the presented case report. Veronica Balduzzi, Anna Marchesiello and Simone Michelini wrote the manuscript. Nicoletta Bernardini, Alessandra Mambrin and Ersilia Tolino contributed to the final version of the manuscript and supervised the project. Patrizia Maddalena and Salvatore Volpe contributed to the manuscript revisions. All authors discussed the results and contributed to the final manuscript.

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