

## Correspondence

### Varicella complicated with pneumonia in a patient infected by COVID-19: the need to rule out other viral coinfections in SARS-CoV-2 patients with vesicular eruptions

Dear Editor,

The varicella-like exanthema was first described by some authors<sup>1</sup> as a specific severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)-associated skin manifestation.

In the paper by Marzano et al., which describes 22 Italian patients affected by SARS-CoV-2-associated cutaneous varicella-like rash, no investigations for other potential infectious agents that could cause a vesicular rash were performed. Llamas-Velasco et al. performed a herpesvirus microarray polymerase chain reaction (PCR) in three patients with vesicular eruption in association with a confirmed SARS-CoV-2 and found varicella-zoster virus (VZV) and other herpesvirus DNA sequences in the vesicle content.<sup>2</sup>

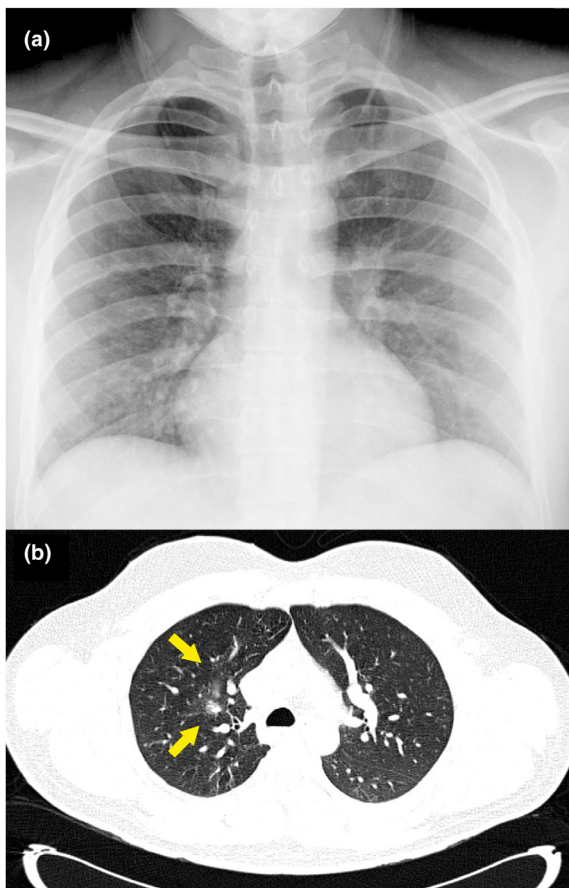
During the spring of 2020, we evaluated a 20-year-old patient presenting with high fever, myalgia, nasal discharge, and a positive nasopharyngeal swab for SARS-CoV-2. No dyspnea, hyposmia, or hypogeusia was present. He also had a generalized cutaneous rash composed by vesicles, erosions, and crusts (Figs. 1 and 2), associated with a palatal mucosa petechial enanthema. He had no personal history of chickenpox in his childhood. Vesicle content was investigated with PCR, resulting positive to VZV. IgM antibodies against VZV were positive. No lymphopenia or other alterations were found in blood tests. In addition to the skin involvement, a chest x-ray showed radiopacities in the base of the right lung. A CT scan was performed and reported confluent nodules suggesting viral infection as varicella pneumonia but hardly compatible with SARS-CoV-2 (Fig. 3). Therefore, secondary lung involvement of VZV could not be ruled out, and an intravenous regimen of acyclovir was prescribed. During admission, the patient responded well to



**Figure 1** Vesicles, erosions, and crusts (polymorphic pattern) widely distributed on the patient's back



**Figure 2** Hemorrhagic vesicles, erosions, and crusts on the patient's face



**Figure 3** Radiological images. (a) Chest radiography showing radiopacities in the base of the right lung. (b) Thoracic computed tomography showing confluent nodules with a peripheral ground glass halo, suggesting viral infection but not suggesting COVID-19 pneumonia

both acyclovir and symptomatic treatment. After a few days, the patient was discharged to complete the isolation period at home.

Since the pandemic SARS-CoV-2 was declared, many authors have described various cutaneous lesions related to the coronavirus infection,<sup>3</sup> but their pathophysiology is poorly understood. Vesicular lesions are part of this spectrum. Two different patterns have been described: a diffuse and polymorphic pattern, and a localized one, with monomorphic vesicles on the trunk. These lesions usually appear on the onset of typical SARS-CoV-2 symptoms, but they can also precede them. Mahé et al.<sup>4</sup> reported a new histological pattern of vesicles of SARS-CoV-2 patients: acantholysis and dyskeratosis with constitution of a unilocular intraepidermal vesicle in a suprabasal location. This pattern appears to be different from the one produced by VZV, in which we would observe large multinucleated cells and ballooning degeneration, among other features.

Some authors have suggested that characteristic lymphopenia in acute SARS-CoV-2 infection could enable the

appearance of other infections, such as VZV primoinfection. In this regard, our patient had no severity risk criteria in serum (absence of lymphopenia, coagulopathy, and others), but the coinfection of VZV and SARS-CoV-2 was present. This could lead us to think that coinfections between SARS-CoV-2 and other viruses are more frequent than we have been able to identify.

In fact, some authors suggest that in the current epidemiological context, the clinical presentation of herpes zoster should be considered as a sign of suspicion for a subclinical COVID-19 infection. On the other hand, clinicians have to consider the possibility of VZV primo-infection in SARS-CoV-2-positive patients, especially if lesions are present in all stages of development at the same time.<sup>5</sup>

With the case we presented herein, we want to suggest that it could be of some interest to rule out VZV infection, by a molecular analysis of the vesicle content, in cases of varicella-like cutaneous lesions in patients with SARS-CoV-2.

In our case, the diagnosis of varicella leads to consider varicella pneumonia, taking clinical, laboratory, and radiological findings together. A COVID-19-negative confirmation by bronchoalveolar lavage was not performed because, due to the critical situation of the pandemic in Spain, this test was strictly restricted to critically ill patients with high clinical suspicion of COVID-19 infection and negative nasopharyngeal PCR.

Considering varicella and varicella pneumonia allowed an optimal treatment with acyclovir that aborted the progression of lung involvement, and therefore, reduced the possibility of a fatal outcome which could not had been possible if we only assumed SARS-CoV-2 infection.

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Conflict of interest: None.

Funding source: None.

doi: 10.1111/ijd.15515

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