

## CASE REPORT

# New-onset guttate psoriasis secondary to COVID-19

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Email: meriem.1710@hotmail.fr**Abstract**

SARS-CoV-2, the virus that causes coronavirus disease 2019 (COVID-19), is associated with flares of psoriasis in patients with well-documented disease. Both viral infection and medications used for treatment, like hydroxychloroquine, were incriminated. Herein, we report the case of a 25-year-old male patient who presented a first-onset guttate psoriasis following a COVID-19 infection. We have not found previous descriptions of de novo guttate psoriasis post-COVID-19.

**KEY WORDS**

COVID-19, infection, psoriasis, SARS-CoV-2

Dear editor,

Guttate psoriasis commonly affects children and adolescents.<sup>1</sup> It usually occurs after acute infections, particularly streptococcal ones, although it can also be triggered or aggravated by viral infection, especially rhinoviruses and coronaviruses.<sup>1,2</sup> SARS-CoV-2, the virus that causes coronavirus disease 2019 (COVID-19), is associated with flares of psoriasis in patients with well-documented disease.<sup>2-6</sup>

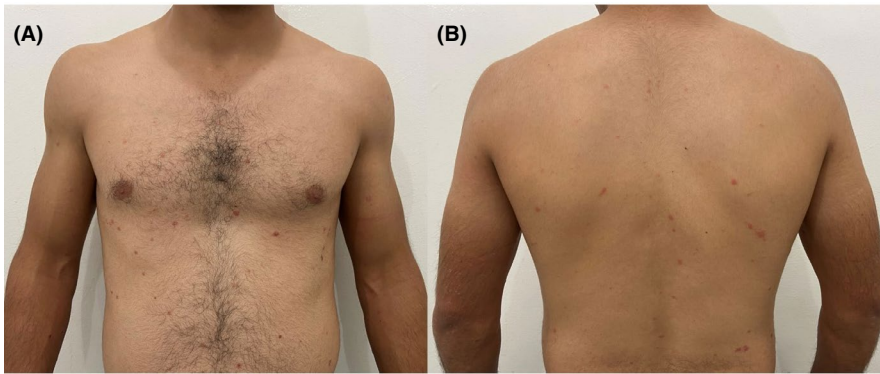
Herein, we report the case of a 25-year-old male patient, with no personal or family history of psoriasis, who presented to the COVID unit with fever, headache, anosmia, and ageusia. The patient did not complain of a sore throat and had no angina on examination. The diagnosis of COVID-19 infection was made by RNA detection from a nasopharyngeal swab. The patient received symptomatic treatment with paracetamol. He recovered in 10 days of self-isolation. Five days later, he developed multiple erythematous lesions. On clinical examination, there were several widespread drop-like erythematous scaly papules with sizes ranging from 0.5 to 1 cm affecting the trunk, the limbs (Figure 1A,B), and the genitals (Figure 2). Histopathology showed parakeratosis, acanthosis, papillomatosis, Munro micro-abscesses, elongation of rete ridges, and an inflammatory lymphocytic infiltrate of the dermis (Figure 3). The diagnosis of guttate psoriasis was

established. Treatment with topical betamethasone dipropionate 0.05% once a day was initiated.

Since the start of the COVID-19 pandemic, numerous cases of psoriasis flares have been reported.<sup>7</sup> Both viral infection and medications used for treatment, like hydroxychloroquine, were incriminated.<sup>2</sup> In our case, the two possible causes are the viral infection and the emotional stress due to self-isolation. So far one case of guttate psoriasis secondary to COVID-19 has been reported in a patient with a past medical history of plaque psoriasis.<sup>6</sup> The delay of onset of psoriasis in this case was 6 days, similar to our case. A longer delay was observed in a patient who presented a new-onset pustular psoriasis 4 weeks after the beginning of COVID-19 symptoms. That was the first and the only case of COVID-19-induced psoriasis described in the literature. The delay was explained by the fact that SARS-CoV-2-related inflammation did not yet resolved even if the patient was asymptomatic.<sup>8</sup> A dysregulation of innate immune response due to stimulation of toll-like receptor 3 by viral RNA leading to production of pathogenic cytokines (IL17, IL23, and tumor necrosis factor- $\alpha$ ) might be a possible mechanism for COVID-19 infection leading to psoriasis.<sup>3,8,9</sup> To our knowledge, our case is the second patient who presented a new-onset psoriasis induced by COVID-19 and the first case of a de novo guttate psoriasis post-COVID-19.

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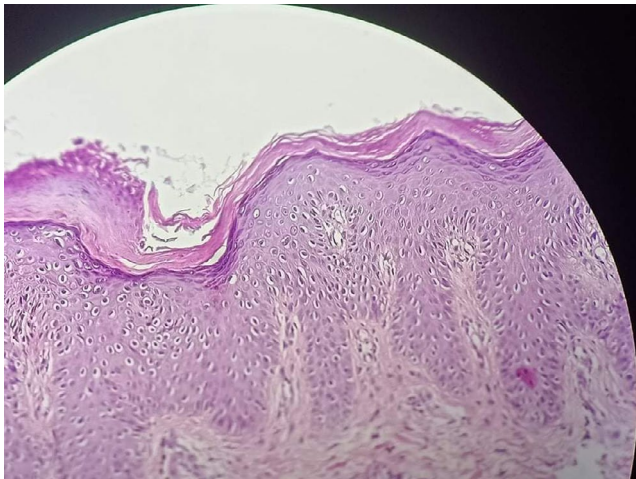
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**FIGURE 1** (A, B) Multiple small red plaques with fine scales on the trunk and the upper limbs



**FIGURE 2** Multiple erythematous papules located on the penis



**FIGURE 3** HEX20 Elongation of rete ridges and parakeratosis

#### ACKNOWLEDGMENT

Published with written consent of the patient.

#### CONFLICT OF INTEREST

None declared.

#### AUTHOR CONTRIBUTIONS

MR is the guarantor of the content of the manuscript, including the data and analysis. FR contributed to acquisition of data, analysis, and interpretation of data, revised it critically for important intellectual content, and final approval of the version to be submitted. NM analyzed and interpreted histological images. KJ revised data critically for important intellectual content. MRD contributed to interpretation of data and revision of the manuscript.

#### DATA AVAILABILITY STATEMENT

All data are included in this published article.

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