

LETTER**Transverse orange nail lesions following SARS-CoV-2 infection**

Dear Editor,

Recent articles have drawn the attention to the different types of cutaneous manifestations associated to COVID-19.¹ Notwithstanding, there is a dearth of works focusing on signs involving the nails, whose inspection should be a fundamental component of an adequate dermatological examination.

We report the case of an 89-year-old woman in a nursing home who amid an outbreak of coronavirus disease 2019 (COVID-19) presented cough and asthenia. A diagnosis of COVID-19 was made after PCR of a nasopharyngeal swab specimen tested negative to SARS-CoV-2 infection. After 16 weeks from the event, she developed orange discolorations at the end of the nail beds of her fingers (Figure 1). When the unguinal lesions were brought to medical attention, a blood test highlighted the presence of IgG against SARS-CoV-2 and ferropenic anemia. The patient also developed sarcopenia, as part of a post-COVID-19 syndrome. Notably, the lesions remained unaltered and had the same features at follow-up a month later.



FIGURE 1 Nails of a COVID-19 patient 16 weeks after disease diagnosis. The nails present orange discolorations which have straight proximal borders that separate them from the healthy-looking nail bed areas. The proximal border of discoloration follows the shape of the lunula indicating a systemic cause

Nails, like the skin, can provide important information regarding the presence and nature of systemic diseases. As a matter of fact, compelling evidence indicates that nails may presumptively be affected by or give clues about COVID-19 as much as the rest of the body.^{2,3} In our patient, the shape of the proximal border of discoloration followed the shape of the lunula, indicating a systemic cause.

Neri et al² reported the case of a COVID-19 patient who developed the “red half-moon” sign, which consists in “distally convex half-moon-shaped red bands surrounding the distal margin of the lunula”. Interestingly, this novel finding has been corroborated by a recent article by Méndez-Flores et al³ Of note, both case reports involved patients of female sex. However, unlike the evidence that we found in the literature, the nail lesions of our patient were located distally in the nails. Interestingly, similar findings have been documented in patients affected by Kawasaki disease, a disease with a vascular etiology.⁴

Recently, transverse leukonychia has been described in a COVID-19 patient.⁵

Moreover, beau lines, which are unguinal harbingers of systemic processes and are associated to an altered nail matrix functionality, have been linked to SARS-CoV-2 infection in a 45-year-old man.⁶ A salient characteristic of Alobaida et al⁶'s case report is that the nail lesions appeared around 16 weeks after the diagnosis of COVID-19, which supports our findings.

It is notable that nail abnormalities can provide useful information regarding underlying systemic diseases.⁷ For instance, yellow nails and nail bed telangiectasia can be signs of chronic obstructive pulmonary disease, while clubbing and melanonychia may be seen in viral infections.⁷

The published evidence and our findings raise the question of what are the mechanisms involved in the appearance of unguinal abnormalities in COVID-19 patients? And how can such mechanisms give rise to such protean manifestations?

Although speculations about the pathogenesis of unguinal manifestations have been made, no definitive conclusion has been reached yet. Complement-mediated microvascular injury may be a possible explanation behind this phenomenon.^{2,8} Furthermore, low serum iron levels have been correlated to disease severity; hence, ferropenia may be connected to the appearance of nail signs like in our patient.⁹ Sex-related immunity factors may play a role as well, but further studies are necessary to draw conclusions.

The patient in this manuscript have given written informed consent to publication of their case details.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Antonella Tammaro: This author is the primary physician of the patient and supervisor of the process. The author created the idea, reviewed the manuscript, photography, data collection, and follow-up.

Ganiyat Adenike Ralitsa Adebajo: The author took part in diagnosis, patient care, and follow-up. The author took part in literature review, writing, and preparation of the manuscript. The author reviewed the manuscript, photography and literature review.

Hans-Peter Erasmus: The author took part in literature review, writing, and preparation of the manuscript. The author reviewed the manuscript, photography, and literature review.

Camilla Chello: The author took part in diagnosis, patient care, and follow-up. The author took part in literature review, writing, and preparation of the manuscript. The author reviewed the manuscript, photography, and literature review.

Aldo Pezzuto: The author took part in literature review, writing, and preparation of the manuscript. The author reviewed the manuscript, photography and literature review.

Sergio Ramirez-Estrada: The author took part in diagnosis, patient care, and follow-up. The author took part in literature review, writing, and preparation of the manuscript. The author reviewed the manuscript, photography, and literature review.

Jordi Rello: This author is the primary physician of the patient and supervisor of the process. The author created the idea, reviewed the manuscript, photography, data collection, and follow-up.

DATA AVAILABILITY STATEMENT

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

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