SARS-CoV-2, skin lesions and the role of the allergist

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To the Editor:

COVID-19 is a disease caused by severe acute respiratory syndrome coronavirus 2 of the genus Betacoronavirus (SARS-CoV-2). It was first described in Wuhan (China) on December 2019 and has spread to become a pandemic. Its clinical presentation is mainly characterized by cough, fever and dyspnea, although many other symptoms have been described within its presentation pattern. In some cases, it causes an acute respiratory distress that has lead to the death of thousands of people around the world. Furthermore, different type of skin lesions have been described during the infection period of illness due to SARS-CoV-2.¹ The first report of cutaneous manifestations described different forms of skin lesions such as erythematous rash, urticaria and chicken-pox-like vesicles.² In this exceptional situation of global health emergency, physicians are undertaking research work in order to achieve notions on the etiopathogenesis of these skin lesions. Acroischaemic lesions have also been notified and attributed to disseminated intravascular coagulation and to the expression of secondary microthrombosis due to endotelial damage.³⁻⁵ However, to date, there is no clear understanding on whether the skin lesions are secondary to the viral infection nor why there are different presentations of skin lesions for the same viral infection.

We present 4 patients with COVID-19, confirmed by positive polymerase chain reaction, who were referred to our service due to the appearance of skin lesions. Two of them developed skin lesions during hospitalization whilst presenting respiratory symptoms and the other two developed skin lesions many days after hospital discharge. Demographic data, description and histology of skin lesions, blood parameters, clinical symptoms and drugs administered are shown in table I. The algorithm of the spanish pharmacovigilance system (ASPS), which evaluates the possible implication of a drug reaction as a cause of the skin lesions⁶ was also applied. The ASPS analyzes: i) the interval between drug administration and the aparition of skin lesions, ii) the degree of knowledge of the relationship between the drug and the effect described in literature, iii) the evaluation of drug withdrawal, iv) the rechallenge effect, and v) alternative causes. Each item receives an individual subscore, and a total sum [?] 6 indicates a probable causality.⁶

As mentioned above, skin lesions appear to be a sign within patients suffering from COVID-19. To date, no hypothesis has been proposed to explain if the lesions (including the different types) are attributable to the virus, to drug adverse reactions or to any other clinical condition. In our series, small enough to draw conclusions, we have found no differences between the multiple types of skin lesions and analytical or clinical features. Even in lesions with apparent vascular involvement, which have been associated with alterations in coagulation,³⁻⁵ the values detected do not differ from those with other types of skin lesions. Regarding drug involvement, since all the patients were exposed to multiple drugs at the same time, the ASPS was

not able to differentiate the possibility of drug implication nor the immune mechanisms involved. Thus, further assays with selective (*in vitro* or *in vivo*) tests for each drug seem necessary in order to completely rule out drug involvement. In addition, since many patients worldwide are being infected with SARS-Cov-2, and many of them present similar medical history and receive the same treatments, it seems necessary to investigate the existence of an individual predisposition that facilitates the development of skin lesions. In this new scenario that we are facing in these last months, providing light on these still unresolved questions, can contribute to prevent or to manage the symptoms in an early way.

References

- Galván Casas C, Català A, Carretero Hernández G, et al. Classification of the cutaneous manifestations of COVID-19: a rapid prospective nationwide consensus study in Spain with 375 cases. Br J Dermatol. 2020 Apr 29. doi: 10.1111/bjd.19163. [Epub ahead of print]
- Recalcati S. Cutaneous manifestations in COVID-19: a first perspective. J Eur Acad Dermatol Venereol 2020. doi:10.1111/jdv.16387 [Epub ahead of print]
- Zhang Y, Cao W, Xiao M, et al. Clinical and coagulation characteristics of 7 patients with critical COVID-2019 pneumonia and acro-ischemia. Zhonghua Xue Ye Xue Za Zhi 2020;28:41
- Mazzotta F, Troccoli T. A new vasculitis at the time of COVID-19. Eur J Pediatr Dermatol (Monday's case) <http://ejpd.com> consultado 13/4/2020
- Romaní J, Baselga E, Mitjà O, et al. Lesiones pernióticas y acrales en España durante el confinamiento por COVID: análisis retrospectivo de 12 casos. Actas dermosifiliograficas (2020). doi: <https://doi.org/10.1016/j.ad.2020.04.002>
- Aguirre C, García M. Causality assessment in reports on adverse drug reactions. Algorithm of Spanish pharmacovigilance system. <http://dx.doi.org/10.1016/j.medcli.2016.06.0120025-7753/>