

Covid- 19 in the skin ?

Abstract :

There has been a great emergence of skin manifestations due to Covid-19 infections in patients around the world. More than 1500 articles have been published on the subject, and these cutaneous manifestations reflect the large spectrum of viral interactions with the skin.

The phenomenon :

According to different worldwide reports, cutaneous manifestations percentage in Covid-19 infected patients range from 0.2% to 45% . Case series studies conducted in the USA and European countries provide that maculopapular eruptions are the most common presentation, along with erythema pernio-like lesions (EPL). Less frequent manifestations include urticaria, vesicular conditions, livedo, purpura and necrosis.

maculopapular eruptions. Statistically more seen in adults with COVID-19

A 44-year-old woman with an erythematous maculopapular rash affecting the trunk and upper limbs. The rash preceded the onset of other COVID-19 symptoms (myalgia, anosmia, low-grade fever, andodynophagia). PCR for SARS-CoV-2 was positive. (1)

Pernio-like lesions : Statistically more seen in children with COVID-19 .

Photograph from a reported case of a 15 year-old girl with circumscribed erythematous and edematous lesions, bluish-red color, on the dorsal surfaces of the toes of the left foot. (2)

Pathophysiology :

Understanding the pathophysiology of this phenomenon is crucial ; organs develop a Sars-CoV-2 infection when they present functional ACE2 (angiotensin-converting enzyme 2)

and TMPRSS2 (transmembrane protease serine2) receptors.

ACE2 is generally found in alveolar epithelial cells hence the high susceptibility of lungs to the virus. As it happens, some studies have proved the presence of ACE2 in hair follicles and the basal layer of the epidermis, and skin sample have shown the presence of ACE2 in the endothelial cells of dermal vessels.

We may divide the skin manifestations into two types :

- 1) Inflammatory ; An immune response to viral nucleotides
- 2) Vascular ; secondary to thrombosis, vasculitis or vasculopathies.

Vesico-bullous lesions, statistically more seen in adult patients with COVID-19. (3)

Livedo racemosa, purpura and necrosis of the extremities in a patient with COVID-19. (4)

Final Considerations

Various lesion morphologies were reported in different parts of the world, which can be attributed to genetic differences. The exclusion of possible differential diagnoses is crucial to study the association between skin manifestations and Covid-19.

All data are sourced from this article, for more informations please refer yourself to it :

- Camila Arai Seque, Milvia Maria Simões e Silva Enokihara, Adriana Maria Porro, Jane Tomimori, *Skin manifestations associated with COVID-19*, Anais Brasileiros de Dermatologia.

(1) (3) (4) The images and cases were sourced from this articles:

- Alba Catala, Cristina Galván-Casas, Gregorio Carretero-Hernández et al.

Maculopapular eruptions associated to COVID-19: A subanalysis of the COVID-Piel study

(2) The image and case were sourced from this articles:

- Giuseppe Ruggiero, Fabio Arcangeli, Torello Lotti *Therapy for probable COVID-19 associated erythema pernio-like lesions in pediatric age. Case report*