



COVID FINGERS AND TOES: AN INNOCUOUS MANIFESTATION OF SARS-COV-2 INFECTION: CASE REPORT

Pediatrics

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ABSTRACT

Nearly 9 months into the COVID-19 pandemic, the patients of SARS-CoV-2 infection have presented with various clinical manifestations, including dermatological manifestations which are less common. The dermatological findings which are non-progressive and clinically insignificant are easily missed as they are not reported to a dermatologist, especially when they are the only manifestation of SARS-CoV-2 infection. It is important to understand the significance of these rashes as some of the immunological events can have complications like Kawasaki disease. Hereby we present a case of a SARS-CoV-2 positive child who presented with urticarial rash following 5 days of SARS-CoV-2 infection.

KEYWORDS

COVID-19, Paediatrics, Dermatology, SARS-CoV-2

CASE REPORT:

A 7-year-old girl residing in and hailing from Maharashtra, India, 1st by order of birth and born of non-consanguineous marriage presented with a history of erythematous, elevated, painless, non-itching lesions without central clearing over knuckles on both hands.

She was in close contact with two family members who tested positive for Reverse Transcriptase Polymerase Chain Reaction[RT-PCR] test for SARS-CoV-2, performed on nasopharyngeal swabs. All close contacts of the two cases underwent RT-PCR testing for SARS-CoV-2 infection. This resulted in two more of her relatives testing positive, but her report came negative. She was advised home quarantine for 14 days. On the 5th day of the first family member being tested positive, she noticed reddish painless non-pruritic lesions over knuckles on both hands and was taken to a general physician for the same. A repeat RT-PCR on her nasopharyngeal swab was advised, which came positive the next day.

She was immediately taken to COVID Care Centre and referred to us, a dedicated COVID Hospital. A detailed history was taken and meticulous examination done. She had no fever, throat pain or any typical respiratory complaints. No other skin lesions were seen on day 1 of admission and showed normal proximal nail folds. Lesions were of 2*2cms size, on the dorsum of knuckles, with variegated margins, clear borders and no central clearing. There were a few satellite lesions around the left wrist(fig.1).



Fig.1 Erythematous lesions affecting knuckle areas of left hand of the patient with some satellite lesions around the left wrist

Proximal interphalangeal joints underlying the lesions showed no restriction of movement, were non-tender and normal on examination. The patient had no history of Raynaud phenomenon, urticaria, acrocyanosis, chilblains, photosensitivity

or allergies. The patient had no history of any drug intake, including traditional or Ayurvedic medications. There was no history of recent vaccine administration, no travel history, or any animal or arthropod contact.

She was a known case of Congenital Complete Heart Block with a basal heart rate of 58 per minute without any discomfort and was not on any medications for it. Etiology was unknown, and investigations like ANA for autoimmune causes were not done. She underwent a battery of investigations viz. complete blood count, erythrocyte sedimentation rate, renal function test, liver function test, Thyroid Stimulating Hormone levels, all of which had normal results. Radiographs of chest and hands were normal. Electrocardiogram showed a complete heart block, and Echocardiography showed trivial tricuspid regurgitation with minimal pulmonary hypertension.

On day 3 of admission, she developed similar lesions on the left forearm and all toes of both feet, acute on onset and non-progressive. She was observed in an isolation ward and not given any medications for the skin condition. The lesions faded within 7 days, leaving no hypo/hyperpigmentation. Repeat RT-PCR on her nasopharyngeal swab tested negative on day 7. She was asymptomatic and without any skin lesions hence was discharged and advised home quarantine for 7 days.

DISCUSSION:

The dermatological manifestations of SARS-CoV-2 are being studied and reported with varied phenotypes not characterized well as yet. Studies done on clinical characteristics of SARS-CoV-2 infection revealed the presence of cutaneous manifestations in 0.2% cases in a study done in China[1] and 20.4% in a study done in Italy[2].

These manifestations include urticaria[3], petechial rash[4], erythematous papules and plaques[5] to name a few.

Another interesting dermatological manifestation, "COVID toes", affecting the peripheries, is being widely discussed to decipher whether it really is a SARS-CoV-2 manifestation or just epiphenomenal as its pathophysiology remains unexplained. Extensive media coverage and possible detection bias could result in some being idiopathic pernio[6]. Hence decision-making becomes arduous when COVID-related skin manifestations are the sole presentation as in our case(fig.1).

Children with pernio-like lesions and no previous history of chilblains, Raynaud phenomenon, or collagen vascular diseases

like lupus erythematosus have lacked criteria sufficient to allow a SARS-CoV-2 test.

COVID-19 robustly triggers the expression of IFN inducible genes which, though instrumental in antiviral protection, can be deleterious, especially with delayed expression resulting in concurrent hypercytokinemia[7]. While some authors reported a muted cytokine response possibly in elderly patients, some hypothesized that young patients exhibit an early response, thereby muting early viral replication. The IFN-I response, however, induces microangiopathic changes, producing chilblain lupus erythematosus like eruptions.

Thus, IFN-I response in young patients may be advantageous, whereas delayed or insufficient response in older patients, disadvantageous. In short, COVID-19 infection-induced chilblains may portend an indolent course and a good prognosis.

CONCLUSION:

The association of varied spectrum of skin manifestations in COVID-19 lack temporal association with the disease. Still, these are to be characterized and studied widely. Dermatological manifestations of COVID-19 that are usually innocuous, especially in children, maybe due to early INF induction stopping further replication. Skin lesions due to COVID-19 are easily missed, especially when they are the only presentation like in this case. Thus, there is a need for meticulous examination history for skin manifestation.

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