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Letter to the Editor

Skin as a mirror for coronavirus disease

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Sir,

With the rise in number of coronavirus disease (COVID-19)-positive patients in the country, we are seeing varying manifestations of the disease. Here, we report a young adult who presented with erythematous inguinal rash as one of the initial manifestations of COVID-19 infection.

A 20-year-old man came to our hospital with complaints of asymptomatic rash of groin, fever, difficulty in breathing and vomiting, of 2 days duration. His temperature, pulse rate, and respiratory rate were 38°C, 80/min, and 18/min, respectively. He denied history of intake of any medication before the onset of the disease. He had no recent contact with any allergen and there was no history of any insect bite. Physical examination revealed erythematous maculopapular rash involving the inguinal area on both sides [Figure 1]. Hence, we decided to investigate and advised complete hemogram and chest X-ray. His total leukocyte count was 7100 cells/mm^3 (polymorphs 58%, lymphocytes 36%, eosinophil 3%, and monocytes 3%). His serum levels of C-reactive protein, D dimer, and lactate dehydrogenase were 58.6 mg/L, 517.35 ng/ml, and 368.12 U/L, respectively. Chest X-ray showed right lower zone pneumonitis. We gave moisturizer and topical steroid for the rash along with antioxidant tablets. The patient was referred to regional COVID hospital where he was diagnosed as a case of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection (COVID-19).

Skin manifestations are not very common in COVID-19 infection. The common clinical features documented in studies on COVID-19 pneumonia patients are fever, dry cough, shortness of breath, myalgia, and fatigue.[1] The important case study of dermatological manifestations of COVID-19 published by Recalcati,[2] in Lombardy, Italy, included 88 patients. In this study, 20.4% of the confirmed COVID-19 patients (18/88) had developed cutaneous manifestations. It was found that most cutaneous presentations were erythematous rash (14/18, 77.8%) with a few cases of urticaria (3/18, 16.7%) and vesicle formation (1/18, 5.6%). A similar case of inguinal rash was reported by Karaca, *et al.* in a 58 year old male patient with COVID-19 infection.[3] The rash was asymptomatic, which was similar to our case, but was unilateral. They did a skin biopsy that showed extravasated red blood cells in the superficial dermis along with peripheral lymphocytic dermatitis around the vessels extending to the middle layers of the dermis. SARS-CoV-2 uses angiotensin-converting enzyme 2 (ACE2) receptors to enter the cell. The expression of ACE2 receptors in the skin and blood vessels has been shown to correlate with the immune status of the patients, although the cutaneous effects of the infection have not been clearly delineated yet.[4] Besides, no clear-cut evidence exists to suggest that the degree of cutaneous involvement is related to the severity of the disease.[5] Studies have reported cutaneous involvement in 0.2%–20% of COVID-19 patients.[6] Two different mechanisms are primarily suggested to explain the cutaneous lesions. The first is the immune response to

Figure 1: Erythematous maculopapular rash involving the inguinal area in a patient with COVID-19 disease.

the viral infection that manifests with morbilliform rash, petechial rash, erythematous-to-purpuric coalescing macules, widespread urticaria, and varicella-like vesicles. The other one is associated with vasculopathy, manifesting with peripheral cyanosis with bullae and dry gangrene, transient unilateral livedo reticularis, and red papules on fingers resembling chilblains.[7] Dermatologists can play a major role in the diagnosis of SARS-CoV-2 infections. Knowing the cutaneous manifestation of COVID-19 may help in early diagnosis and proper treatment of the patient.

Declaration of patient consent

Patient's consent not required as patients identity is not disclosed or compromised.

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Conflicts of interest

There are no conflicts of interest.

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