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LETTER

Erythematous-edematous type of chilblain-like lesions and COVID-19: An Indian perspective

Dear Editor,

Coronavirus disease 2019 (COVID-19) is an infectious disease caused by the recently discovered coronavirus. Cutaneous manifestations in COVID-19 are increasingly being reported, chilblain-like lesions being one of the most commonly reported features.[1] We hereby report a series of cases of erythematous-edematous type of chilblain-like lesions in patients with COVID-19. To the best of our knowledge, this is the first of its kind series reported from India.

The patients had been admitted to COVID isolation ward, with complaints of fever, dry cough and a flu-like illness. Diagnosis of COVID-19 was confirmed by reverse transcriptase polymerase chain reaction test. During their stay in the hospital, the patients complained of a peculiar sensation over the distal aspect of fingers and toes. Four of them (aged 45, 52, 32 and 29 years) complained of tingling and burning sensation over the distal aspect of the toes, 2 days prior to the onset of redness (Figure 1). The most interesting patient of our series was a young gentleman (aged 27 years) who presented with burning sensation and severe painful erythema of the palms (not seen in other cases) gradually progressing to involve the dorsal aspect of the fingers (Figure 2). We did not find any other neurological abnormality in these patients.

The burning and tingling sensation could not be attributed to any other systemic or cutaneous etiology. Although two patients (aged 52 and 32 years) were diabetic, they did not have any such complaints prior to the diagnosis of COVID-19. Pure neuritic leprosy was excluded in our patients on the basis of time of onset of the lesions, nonspecific findings on nerve conduction velocity and resolution of the symptoms following recovery from the disease. One of our patients presented with symptoms of "erythromelalgia," and this could be attributed to microvascular thrombotic injury. Complement-associated microvascular injury and thrombosis have been already implicated in the pathophysiology of severe COVID-19 infection, and the development of erythromelalgia-like symptoms could be attributed to a similar mechanism.

Therefore, the temporal association, complaints of the peculiar neurological sensation followed by development of erythema and swelling in our patients support the probable association of the cutaneous manifestations with COVID-19. The patients had been advised symptomatic treatment, and the signs and symptoms disappeared following recovery from the disease.

In a recent study published by Recalcati et al from Italy, the most common signs were erythematous rash (77.8%) followed by urticaria (16.7%) and vesiculation (5.6%).[2] Other skin changes that have been reported include dusky acrocyanosis and dry gangrene from China,[3] chicken-pox like rash from Italy,[2] transient unilateral livedo reticularis from the United States,[4] dengue-like rash from Thailand[5] and plaques in the heels from Spain.[6] In one of the largest series published from Spain, cutaneous manifestations were pseudochilblains (19%), vesicular eruptions (9%), urticaria (19%), maculopapular rashes (47%) and livedo (6%).[7] In the Spanish series, 19% of the cases were classified as "pseudochilblains," characterized by the presence of asymmetrical areas of erythema and edema over the hands and feet.[7] In another series published from Italy, the authors noticed an outbreak of chilblain-like lesions in Italy contemporary to COVID-19 epidemic, who reported two varieties of lesions, namely erythematous-edematous type and blistering type.[8] However, in our series, we came across the former type only. In another Spanish series, all the patients were asymptomatic. All of them presented to the physician, with chilblain-like lesions, those being the first signs of COVID-19.[9]

According to a recently published systematic literature review of articles describing cutaneous manifestations due to COVID-19 (using Preferred Reporting Items for Systematic Reviews guidelines), it was pointed out that cutaneous manifestations of COVID-19 in darker skin have not been reported, and the journals should give priority to publishing articles mentioning the skin changes due to COVID-19 in dark skin. Our series of patients would definitely be the first of its kind, in order to fill up this lacuna of paucity of documentation of cutaneous changes in dark skin.[10]

Contrary to the common belief of chilblain-like lesions being the cutaneous manifestations of COVID-19, a recent study suggested that acral skin lesions are not a specific marker of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection.[11]

To summarize, there is a dire need of larger prospective studies to determine whether acral skin lesions are specific manifestations of this disease, and such lesions should not be considered as a sign of COVID-19 in asymptomatic patients. Further research is required to ascertain the utility of chilblains and chilblain-like lesions (pseudochilblains) in the diagnosis and prognosis of the disease.[12] The purpose of documentation of our series is to highlight the occurrence of chilblain-like lesions in patients of Indian origin, and the presence of a peculiar neurological sensation prior to the development of erythema adds to the intriguing nature of the disease.

FIGURE 1 Erythema and swelling of the tips of toes in four patients

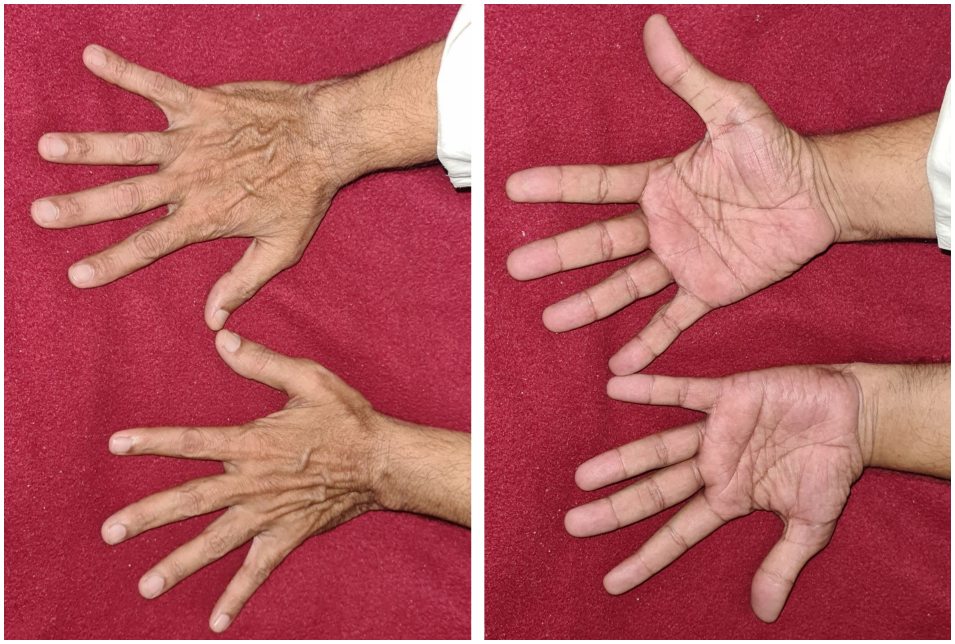

FIGURE 2 Distinct erythematous discoloration over the palms and mild erythema over the dorsum of fingers

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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