



Letter to the Editor

Differentials of red toes in dermatology – Are COVID toes real?

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Received : 17 May 2020
Accepted : 21 May 2020
Published : 21 August 2020

DOI
10.25259/IJMS_93_2020

Quick Response Code:



Dear Editor,

There are emerging data on the cutaneous manifestations of COVID-19 and aside from the usual suspects associated with viral exanthems; an interesting feature has grabbed headlines, namely, COVID toes. Labeled as a harbinger of SARS-CoV-2 by some, it appears to be present in many who are asymptomatic.

In a recent case report of a young male with a history of psoriasis and COVID-19 infection-induced chilblains, the authors postulate that an early and robust interferon (IFN)-1 response, particularly in young patients, mutes early viral replication. This infection triggers the expression of IFN-inducible genes and the inflammation causes microangiopathic changes, producing a chilblain lupus erythematosus-like eruption.^[1]

A similar case series has been reported from Spain where the authors hypothesize that chilblain-like lesions could be a late manifestation of COVIDs n.^[2] In the absence of histological corroboration and paucity of test to confirm COVID, it is of no definitive conclusion on this finding and the possible mechanism – whether vasculitis or the presence of microthrombi.

Historically, chilblains have been known to occur as an abnormal vascular response to cold, presenting as tender pruritic reddish lesions located symmetrically on acral sites commonly on feet. Vasospasm is the primary pathophysiologic finding and symptoms generally appear 12–24 h after cold exposure and resolves within a few weeks. The histological picture is that of perieccrine inflammation, in idiopathic perniosis, along with basal layer vacuolation, and necrotic keratinocytes within the epidermis.^[3] Uncomplicated cases resolve spontaneously with the onset of warmer seasons and on protection of hands and feet from cold stimuli.

In the case of chilblain lupus, patients commonly have a positive rheumatoid factor and speckled antinuclear antibody pattern, but cryoglobulins and cryoprecipitates are negative. It is a rare variant of chronic cutaneous lupus erythematosus and 20% eventually develop SLE. Here, immunologic abnormalities and microvascular injury, provoked by cold temperatures leads to a hypercoagulable state.^[4]

Erythromelalgia also presents similarly with red toes, though the aggravating and relieving factor is the opposite of perniosis. It is characterized by paroxysmal hyperthermia of the extremities resulting in painful erythema and intense burning. Cold exposure provides relief while warmth worsens the symptoms. Thermography studies have reflected vasospastic response, suggesting that the reactive hyperemic phase may be triggered by the initial vasospasm.^[5]

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Along this clinical spectrum of reddish purplish toes, lie Raynaud's phenomenon, connective tissue disorders, vasculitides, drug reactions, and perniosis. A strong clinical and serological correlation is needed for including or excluding a diagnosis.

What we have right now is an interesting presentation of an old entity chilblain, but without its classical precipitating factor-cold. Whether "COVID-19 toes" becomes a subtype of chilblains or evolves as a separate entity, only data and time will determine. For now, it appears that interplay of a sudden and heightened inflammatory response, increased viscosity and changes to small vessel vasculature are causing the changes. It may be safe to presume that it is a good prognostic marker, almost exclusively seen in young adults and unlikely to be a coincidental phenomenon.

Declaration of patient consent

Patient's consent not required as there are no patients in this study.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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How to cite this article: Shishak M, Shishak S, Rajput S. Differentials of red toes in dermatology – Are COVID toes real? *Indian J Med Sci* 2020;72(2):112-3.