Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Chilblain-like acral lesions in long COVID-19: management and implications for understanding microangiopathy

We read with interest the Comment by Devon E McMahon and colleagues[1] describing the range of cutaneous manifestations of COVID-19. We agree that most acral chilblain-like or pernio-like lesions (commonly referred to as COVID toes) occur in young, previously healthy patients with relatively mild COVID-19 and frequently negative tests for SARS-CoV-2. Most resolve spontaneously without any treatment approximately 2 weeks from onset, particularly in children and adolescent patients. However, in our multidisciplinary post-COVID-19 follow-up clinic of adult patients and specialist tertiary referral centre for paediatric and adolescent rheumatology, we have observed a subgroup of patients with persistent chilblain lesions, similar to McMahon and colleagues' report. Clinically these chilblain-like lesions resemble the digital vasculopathy of connective tissue disease. If the lesions do not resolve within 30 days of onset, we recommend screening for other underlying causes (which might have been triggered by COVID-19) and therapeutic options including aspirin, topical corticosteroids (with oral prednisolone in severe cases), hydroxychloroquine and vasodilators, and prostacyclin analogues (eg, iloprost) if refractory (appendix). Our recommended management framework is based on the UK and British Society for Rheumatology guidelines for the management of Raynaud's phenomenon and digital ischaemia in systemic sclerosis.[2,3] The optimal management, including treatment duration, of chilblain-like lesions in patients with long COVID is currently unclear and will probably evolve as clinical experience and data accumulate for this new disease.

See Online for appendix

As the COVID-19 pandemic continues unabated, attention is now turning to the considerable proportion of patients with multiorgan morbidity, including unexplained symptoms such as dyspnoea and fatigue, that persist well beyond the initial viraemic phase, exerting pressure on already strained health-care resources. Endothelial cell dysfunction, hypercoagulability, and inflammation are considered central to the aetiopathogenesis in acute COVID-19, but there is a growing need to characterise the clinical course of symptoms and disease mechanisms of long COVID to facilitate prognostication and targeted interventions.

Nailfold capillaroscopy enables identification of microcirculatory morphological alterations and is widely used in rheumatological practice. There is emerging evidence to support the utility of nailfold capillaroscopy to detect and quantify endothelial alteration in COVID-19.[4] Microvascular abnormalities have been observed on nailfold capillaroscopy in both fingers and toes of patients with COVID-19, even when lesions are confined to the toes, suggesting that chilblains might be an overt manifestation of a systemic process.[5] We propose that nailfold microangiopathy, as assessed by capillaroscopy, might represent a peripheral measure of central pathology. Nailfold capillaroscopy might provide a surrogate, non-invasive digital window to the lung to investigate unexplained dyspnoea.

We call for further research to investigate microangiopathy in long COVID and advocate prospective, longitudinal data capture for patients with persistent chilblain-like lesions in COVID-19, including nailfold capillaroscopy where available, to better understand pathomechanisms and inform evidence-based guidelines.

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