along with good functional and aesthetic outcomes, the nasolabial flap remains one of the most useful options for reconstruction in the area of the facial triangle. ■

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Chilblain-like eruption in COVID-19 disease: possible pathogenetic role of temperature

Charlene WEE[1,2], **Hong Liang TEY**[1,2,3,4]

[1] National Skin Centre, Singapore
[2] Woodlands Health Campus, Singapore
[3] Yong Loo Lin School of Medicine, National University of Singapore
[4] Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore
charlene.wee@mohh.com.sg
teyhongliang111@yahoo.com

The coronavirus disease 2019 (COVID-19) is caused by a novel coronavirus, SARS-CoV-2, first isolated in China in 2019. It has been associated with various skin manifestations, comprising maculopapular, urticarial, vesicular eruptions, chilblain-like lesions, and livedo/necrosis [1]. There have been multiple reports [2] of chilblain-like eruption in countries coincident with the COVID-19 pandemic spread, however, the pathogenesis of the eruption remains to be elucidated. Type I interferon and cytokine response to the viral infection have been shown to result in microangiopathic changes and chilblain-like lesions [3].

Chilblains, or pernio, classically present as erythema and swelling of the extremities following cold exposure. Chilblain-like lesions are named as such as they resemble idiopathic chilblains, and the patients typically do not have a history of chilblains or collagen vascular diseases. Reported cases of COVID-19-related chilblain-like lesions have been reported from Europe, the Middle East, and United States [2] during the months of February to May, but none have been reported from tropical regions such as South America or Southeast Asia [4]. A proposed theory is that cold exposure may be a co-factor for the cutaneous inflammation that occurs in chilblain-like lesions.

In Singapore, the temperature is higher than 20°C perennially and idiopathic pernio does not typically occur. Patients with mild COVID-19 disease in Singapore have been isolated in large community facilities and out of 11,000 patients admitted under our care so far, there has only been one patient who presented with chilblain-like lesions. The patient was a 26-year-old Indian male whose nasopharyngeal swab was positive for SARS-CoV-2 based on polymerase chain reaction. He presented with mildly painful erythematous patches over his left thumb and palm on Day 15 of his COVID-19 illness. The patches became purpuric in a mildly reticular configuration the following day, associated with swelling of his left thumb (*figure 1*). His pain score was 1 to 2 out of 10. He was otherwise afebrile and systemically well. Laboratory investigations, comprising full blood count, prothrombin time, d-dimer, C-reactive protein, lactate dehydrogenase, and creatinine levels were normal. He was clinically diagnosed to have chilblain-like lesions related to COVID-19 and was prescribed paracetamol as required. Subsequent follow-up at Day 12 after onset

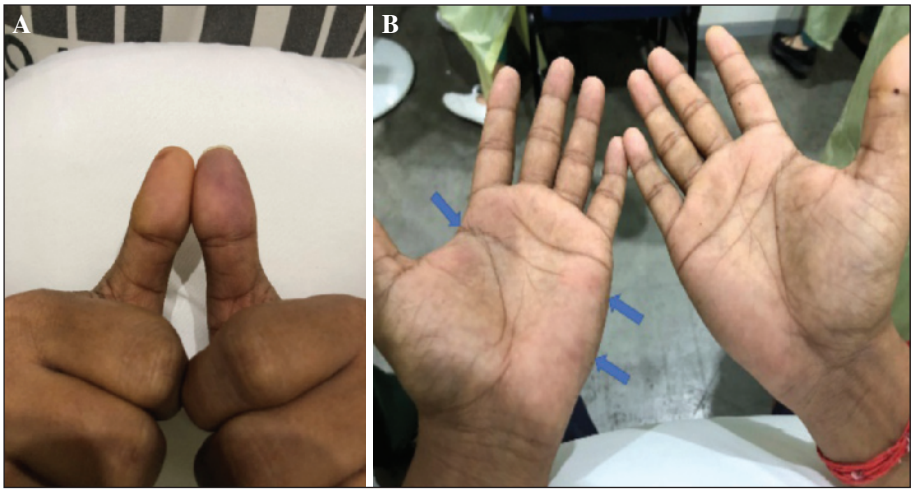

Figure 1. **A**) Reticular purpuric patch over the left thumb. **B**) Reticular purpuric patches over left palm.

revealed that his pain and swelling had markedly improved and the lesions on his palm had resolved.

Chilblain-like lesions in COVID-19 have been reported to present asymmetrically as erythematous to violaceous macules, papules, or plaques at acral regions and may be associated with swelling or blistering. The lesions affect the feet more than the hands, tend to affect young patients with milder symptoms, and seem to occur later in the course of COVID-19 disease [1]. Our patient's presentation was consistent with these characteristics. Histopathology of COVID-19-associated chilblain-like lesions was reported to consist of a superficial and deep perivascular lymphocytic infiltrate with mild basal-vacuolar alteration, consistent with idiopathic chilblains. Other reported features include papillary dermal oedema, erythrocyte extravasation, dermal mucin deposition, and deep vessel thrombi [5].

As idiopathic chilblains rarely occur in environments with high temperature, physicians encountering such an eruption should consider the possibility of underlying COVID-19 disease during this pandemic. ■

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Atrophic annular papules and plaques in an elderly patient

Lula MARIA NIETO-BENITO, E. DE LA TORRE HERNANDEZ-RUIZ, I. BALAGUER-FRANCH

Department of Dermatology, Hospital General Universitario Gregorio Marañón, Universidad Complutense de Madrid, Spain
lula.m.nieto@gmail.com

A 79-year-old man with a personal history of diabetes mellitus presented with a six-month history of asymptomatic cutaneous lesions that had started on the elbows and knees with progression to the lumbar and abdominal area. The patient had applied only emollients, and no new medication had been introduced. The patient did not refer to any other mucocutaneous or systemic symptoms, sun exposure or photosensitivity. On clinical examination, polycyclic annular plaques with an atrophic centre and well-defined borders, symmetrically distributed on elbows, knees and trunk (*figure 1A*), were observed. Total remission was obtained after 8-10 months of follow-up without pharmacological intervention, but with sun avoidance.

Histopathological studies showed a preserved epidermis with a granulomatous inflammatory infiltrate in the papilar and superficial reticular dermis (*figure 1B*). Multiple giant multinucleated cells were observed in the dermis (*figure 1C*), associated with elastolysis and elastophagocytosis, also demonstrated using orcein stain (*figure 1D*). Annular elastolytic giant cell granuloma (AEGCG) was diagnosed.

AEGCG is an uncommon granulomatous skin disease, which typically occurs in middle-aged patients [1] and in both sexes equally. Although its pathogenesis remains unclear, it is though that factors such as ultraviolet radiation [2], heat and others [3] might change the antigenicity of these fibres and contribute to the inflammatory reaction and posterior elastolysis [2, 3]. When this condition affects sun-exposed skin, it is termed "actinic granuloma" [4]. Whether AEGCG should be considered as a separate entity or a subtype of granuloma annulare (GA) is a matter of debate [5]. Apart from the skin, cases of eye or multisystemic involvement have been described, which differentiate AEGCG from GA [6]. Although diabetes mellitus was not initially related to this condition, it has been found to be more common in patients with AEGCG, as in the present clinical case. There are few reports describing an association between AEGCG and malignancies [3, 5], including haematological disorders and solid neoplasms.

AEGCG is characterized clinically by polycyclic and annular papules and plaques with raised and well defined erythematous borders that grow centrifugally, leaving an atrophic centre [4]. Lesions can grow up to several centimetres and the atrophic part can also show hypopigmentation. These lesions are usually asymptomatic, but some patients complain of pruritus or a burning sensation [5]. Four variants of this condition have been described [6] and can be present simultaneously in the same patient: popular, reticular, localized and generalized forms. The condition usually lasts for months or years, when new lesions may appear, but spontaneous remission occurs in the majority of patients [2].

Histopathologically, AEGCG demonstrates an interstitial inflammatory infiltrate in the dermis, mainly composed of histiocytes, some in a giant multinuclear cell configuration, with lymphocytes and other inflammatory cells [1-3]. No palisading granuloma configuration is usually found. Necrobiosis and mucine deposition are also absent. Giant cells may be found to be digesting elastic fibres (elastophagocytosis), which can be observed in preparations with orcein stain, in which an absence or scant numbers of well-configured fibres can be seen along with fragmentation (elastolysis) [3-5]. As lesions have an annular configuration, the clinically active border correlates to the inflammatory granulomatous infiltrate with giant multinucleated cells and elastophagocytosis, whereas the