


In general, the use of reflectance confocal microscopy in diseases of the dermis is hampered because of the laser depth penetration limits (~250  $\mu\text{m}$ ).<sup>5</sup> In our case, it allowed the detection in the upper dermis of bright structures of different sizes corresponding to the dense lymphohistiocytic infiltrate: the small pinpoint particles likely correlate with lymphocytes, whereas the larger pleomorphic cells with epithelioid histiocytes. Although the dermal infiltrate of epithelioid histiocytes is not specific of CGPD, it is highly suggestive of a granulomatous disease.

In conclusion, we have reported the dermoscopy and reflectance confocal microscopy features of CGPD. These techniques, combined with the clinical features, may be useful to narrow down the differential diagnosis, possibly limiting, in selected cases, the need for skin biopsy. Childhood granulomatous periorificial dermatitis is a benign and self-limiting condition, and a prompt diagnosis is important to avoid overtreatment.

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## Case Letter

Dear Editors,

*Necrotic acral lesions and lung failure in a fatal case of COVID-19*

COVID-19 is a disease which can range from paucisymptomatic cases to interstitial pneumonia and systemic

involvement with abnormal immune responses and inflammation which may lead to multiorgan failure.

A 59-year-old male smoker with COPD presented to the emergency room with dyspnoea, fever and cough. Vital signs were pulse 102 bpm, body temperature 37.5°C, oxygen saturation 97% and respiratory rate 20 breaths/minute.

Laboratory tests revealed lymphopenia, elevated D-dimer (899 ng/mL) and 4.2 mg/dL of C reactive protein. The platelet count and coagulation parameters were normal. SARS-CoV-2 was detected by PCR on a naso-pharyngeal swab specimen, and bilateral interstitial pneumonia was evident at chest CT scan.

He was admitted to the hospital and treatment with azithromycin and hydroxychloroquine was initiated.

Erythematous lesions were identified on his limbs and oxygen supplementation by nasal cannula (2 l/min) was performed for 24 hours owing to the development of hypoxemia (55 mmHg).

Because of persistent hypoxemia and high D-dimer levels, he was admitted in the intensive care unit. Concomitantly, a necrotic lesion was identified on the foot of the patient (Fig. 1).

Following the administration of tocilizumab as a single dose, no new cutaneous lesions were identified on physical examination.

A *Pseudomonas aeruginosa* superinfection diagnosed by blood culture lead to death.

There are several hypotheses concerning skin involvement in COVID-19: SARS-CoV-2 induces immune



**Figure 1** Necrotic lesion on the left sole of the patient. Ischemic and erosive necrotic plaque extending to the dermis on the left heel of the patient which is surrounded by an erythematous area and skin desquamation. Above and on the left of the main lesion, two other less defined necrotic foci are visible.

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complexes formation with inflammation and vasculitis. Skin biopsies of patients deceased due to COVID-19 showed small vessel thrombosis with no viral skin identification,<sup>1</sup> suggesting that tissue abnormalities are due to systemic toxicity triggered by a disproportionate immune response, rather than to direct viral spread.

Another hypothesis is that the virus itself causes vascular damage, binding to angiotensin-converting enzyme 2 receptor, which is widely expressed in endothelial cells.<sup>2</sup> Moreover, severe infections result in disseminated intravascular coagulopathy (DIC), with further skin damage.

A recent overview revealed that among the known cutaneous COVID-19 manifestations maculopapular exanthems are the most frequently reported.<sup>5</sup>

In a recent study that included 375 COVID-19 patients, acral ischemic lesions were classified into two groups: 'pseudo-chilblain' and 'livedo or necrosis'.<sup>4</sup> Livedo or necrosis frequently involved the acral regions and were related to older age and severe disease with up to 10% mortality.<sup>4</sup> Acral cyanosis, blistering and gangrene were reported in seven critical COVID-19 subjects, with altered coagulation leading to DIC and death in 5 cases, suggesting that acral ischemia resulted from vascular occlusion due to endothelial damage rather than primary viral lesions.

Our report suggests that acral lesions are favoured by hypoxemia and tissue hypoxia due to smoke-induced COPD and pneumonia, hence smoking cessation may be beneficial in the improvement of the prognosis.<sup>5</sup>

In conclusion, the early identification of cutaneous lesions may help to rapidly start treatment, since their worsening may be related to a severe systemic involvement.

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## Correspondence Letter

Dear Editor

*Response of a tertiary dermatology department to COVID-19*

A novel coronavirus named severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was reported in December 2019 causing the disease known as COVID-19. As of March 24th, 2020 there have been 195 countries affected with 387 354 cases and 16 758 deaths. In Australia every state has been affected and as of March 24th there were 2136 cases with 8 deaths.<sup>1</sup> A significant rise in case numbers is expected in the coming weeks.

China's lockdown measures are considered the main factor in a decline in transmission from a median daily reproduction rate of 2.35 to 1.05 within a week.<sup>2</sup> The Dermatology department of West China Hospital implemented several changes. Clinics were reduced to emergency cases, teledermatology was implemented, only one support person was allowed to accompany patients, upon entry to the department patients had their temperatures measured as well as wearing masks and having travel histories recorded. Doctors were mandated to wear full PPE.<sup>3</sup>

Due to the unprecedented nature of this pandemic there has been uncertainty regarding what changes should be implemented to Australian dermatology services.

Given the reported efficacy of China's response in reducing COVID-19 transmission, we are employing similar protocols (Table 1). At the Department of Dermatology, Liverpool Hospital, we have deferred non-urgent cases from surgical and medical clinics. We have defined urgent

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