

infection-control measures and had the opportunity to ask questions. The main limitation is we surveyed patients who actually attended hospital for surgery, although a third of patients had COVID-19 risk factors and over a quarter were over 70 years old.

In conclusion, it is clear that patients strongly appreciated continued MMS services during the pandemic and continuation of surgery helps reduce treatment delays and backlogs. Our key lessons for any future pandemic or second wave are that MMS services should continue to run with patients prioritized based on clinical judgement and limiting risks. Effective patient communication is vital prior to surgery to prepare patients and alleviate their concerns. Finally, it is important that multiple infection-control measures are implemented to reduce transmission. We can and should strive to continue to deliver high-quality care and reduce associated risks to provide the best outcomes for patients. This will be critical in any second wave or future pandemics.

P. Nicholson,¹  F. R. Ali,¹  R. Patalay,¹ E. Craythorne¹ and R. Mallipeddi¹

¹*Dermatological Surgery & Laser Unit, St John's Institute of Dermatology, Guy's & St Thomas' NHS Foundation Trust, London, UK*

E-mail: raj.mallipeddi@gstt.nhs.uk

Conflict of interest: the authors declare that they have no conflicts of interest.

Accepted for publication 13 August 2020

Reference

- Nicholson P, Ali FR, Mallipeddi R. Impact of COVID-19 on Mohs micrographic surgery: UK-wide survey and recommendations for practice. *Clin Exp Dermatol* 2020. <https://doi.org/10.1111/ced.14356>

Recognizable vascular skin manifestations of SARS-CoV-2 (COVID-19) infection are uncommon in patients with darker skin phototypes

doi: 10.1111/ced.14421

Reported cutaneous manifestations of SARS-Cov-2 infection include maculopapular rash, urticarial rash, varicelliform or vesicular lesions, petechiae/purpura, livedoid/necrotic lesions, chilblain-like lesions ('COVID toes'), erythema multiforme-like lesions¹ and aphthous ulcers.² These cutaneous manifestations have been mostly reported from countries with populations of lighter skin

Table 1 Details of the patients possible COVID-19-related cutaneous features included in the study.

Patient	Age, years	Sex	Lesion morphology/ diagnosis	Site(s)	Duration	Severity of COVID-19 symptoms	Comorbidities	Other relevant features/comments
1	54	F	Weals	Limbs	2 days	Mild	None	No prior history of weals. The patient also reported a burning sensation over the palms and soles
2	24	M	Desquamation	Palms and soles	4 days	Mild	AML	Desquamation started just after resolution of fever
3	59	F	Weals	Limbs, trunk	7 days	Mild	DM	No prior history of weals
4	31	M	Petechiae	Trunk	3 days	Severe	CML	–
5	19	M	Purpura	Arms and legs	4–5 h	Moderate	None	No thrombocytopenia. Patient died after 1 day of admission
6	40	M	Purpura	Periumbilical area and flank	7 days	Severe	Acute on chronic liver failure	Thrombocytopenia
7	50	F	Chilblain-like	Toes of both feet	15 days	Mild	DM	Lower limb ischaemia as documented by Doppler ultrasonography
8	55	M	Weals	Arms	Acute onset for 7 days ^a	Mild	Chronic kidney disease, hypothyroidism	–
9	28	M	Minor aphthous ulcers	Oral cavity	4 days	Mild	None	No prior history of recurrent oral aphthosis
10	39	M	Macular erythematous rash	Face, trunk	3 days	Mild	DM, hypertension	Occurred in the resolving phase

AML, acute myeloid leukaemia; CML, chronic myeloid leukaemia; DM, diabetes mellitus; ^apatient already had a 2-year history of chronic weals, but the acute episode, lasting for 7 days, correlated temporally with his COVID-19 diagnosis.



Figure 1 (a) Urticarial lesions in 55-year-old man (Patient 8); (b) desquamation of skin over palms and soles of a 24-year-old man (Patient 2); (c) chilblain-like lesions in a 50-year-old woman (Patient 7); (d) purpurral rash in a 19-year-old man (Patient 5).

phototypes, with a paucity of data from the populations with darker skin phototypes.³ We conducted a prospective study to report the prevalence and patterns of cutaneous manifestations in patients with COVID-19 from India.

We included all patients in an inpatient department at a dedicated centre for COVID-19-positive patients at the All India Institute of Medical Sciences, India from 11 June to 10 July 2020. The patients were admitted following a positive PCR reaction for COVID-19. All the inpatients were screened for any cutaneous lesions by a single dermatologist (RP).

Of 138 patients admitted in a 30-day period, 10 (7.25%) had cutaneous manifestations (Table 1). All 10 patients had Fitzpatrick skin types IV or V. In all our patients, the cutaneous features followed the symptoms of COVID-19.

We devised the following criteria to distinguish COVID-19-related cutaneous manifestations from incidental or unrelated skin findings. The major criterion was a temporal correlation with the onset of COVID-19 symptoms or positivity, with a range of -2 to 21 days from systemic symptoms; this range was decided on after analysing the various cases reported in the literature.⁴ Minor criteria were (i) resemblance to the previously reported cutaneous features of COVID-19, and (ii) no other plausible explanation for the skin lesions. For inclusion, the major criterion and at least one of the two minor criteria had to be present. Using these criteria, all 10 patients were judged to have COVID-19-related lesions (Table 1). Some of the presenting features are shown in Fig. 1.

There seems to be a wide variation in the prevalence of cutaneous manifestations, ranging from 0.2% in a study on Chinese patients,⁵ through 7.25% in our study to 20.4% in a study from Italy.⁶ Reported vascular cutaneous manifestations, such as chilblain-like lesions, live-doid/necrotic lesions, vasculitis and vasculopathic ulcers, are uncommon in Indian patients. Geographical differences have also been observed in the severity of COVID-19 symptoms and the mortality rates across various parts of the world, with India having a low case fatality rate. The explanation for this is not known; however, lipoprotein A has been identified to be an independent risk factor for cardiovascular, peripheral arterial and cardiovascular diseases, and impaired fibrinolysis. Levels of lipoprotein A are about twice as high in people of African descent than in white, Hispanic and many Asian populations, whereas only intermediate levels are seen in South Asian populations. In addition, the prevalence of minor allele frequency for Factor V Leiden mutation is higher in whites than in Asians. These differences in thrombophilic genetic conditions could explain the higher frequency of vascular cutaneous manifestations and fatalities in American and European compared with Asian populations.⁷

Recognition of cutaneous features is important for dermatologists, as these may appear before the systemic symptoms or before SARS CoV-2 positivity is established, or may even be the sole manifestations in systemically asymptomatic patients. This study is limited by its small sample size, but its strength is that the patients were screened by a dermatologist who was directly involved in the care of the COVID-19 inpatients.

R. Pangti,¹  S. Gupta,¹  N. Nischal² and A. Trikha³

¹Departments of, Department of Dermatology and Venereology, All India Institute of Medical Sciences, New Delhi; ²Department of Medicine, All India Institute of Medical Sciences, New Delhi and ³Department of Anaesthesiology, Pain Medicine and Critical Care, All India Institute of Medical Sciences, New Delhi, India
E-mail: someshgupta@hotmail.com

Conflict of interest: the authors declare that they have no conflicts of interest.

Accepted for publication 13 August 2020

References

- 1 Jia JL, Kamceva M, Rao SA, Linos E. Cutaneous manifestations of COVID-19: a preliminary review. *J Am Acad Dermatol* 2020; **83**: 687–90.
- 2 Dominguez-Santas M, Diaz-Guimaraens B, Fernandez-Nieto D *et al*. Minor aphthae associated with SARS-CoV-2 infection. *Int J Dermatol* 2020; **59**: 1022–3.
- 3 Lester JC, Jia JL, Zhang L *et al*. Absence of skin of colour images in publications of COVID-19 skin manifestations. *Br J Dermatol* 2020; **183**: 593–5.
- 4 Tang K, Wang Y, Zhang H *et al*. Cutaneous manifestations of the coronavirus disease 2019 (COVID-19): a brief review. *Dermatol Ther* 2020; e13528. <http://doi.org/10.1111/dth.13528>
- 5 Guan WJ, Ni ZY, Hu Y *et al*. Clinical characteristics of coronavirus disease 2019 in China. *N Engl J Med* 2020; **382**: 1708–20.
- 6 Recalcati S. Cutaneous manifestations in COVID-19: a first perspective. *J Eur Acad Dermatol Venereol* 2020; **34**: 212–13.
- 7 Criado PR, Abdalla BMZ, de Assis IC *et al*. Are the cutaneous manifestations during or due to SARS-CoV-2 infection/COVID-19 frequent or not? Revision of possible pathophysiologic mechanisms. *Inflamm Res* 2020; **69**: 745–56.

Fast-tracking teledermatology into dermatology trainee timetables, an overdue necessity in the COVID era and beyond

doi: 10.1111/ced.14427

Teledermatology is defined as using technology-enabled healthcare delivery models to provide dermatology patient care, from a distance.^{1,2} The increasing use of teledermatology has primarily been driven by a significant rise in demand on Dermatology departments and a shortage of consultant dermatologists in the UK.³ The British Association of Dermatologists supports the use of teledermatology as a means of improving access to dermatology professionals.⁴ Currently, teledermatology in the NHS plays a particularly important role in triaging referrals on the skin cancer 2-week-wait (2WW)

pathway, given the necessity for rapid lesion assessment, the ever-increasing volume of 2WW referrals received by Dermatology departments, and the significant proportion of benign lesions referred that do not require a face-to-face consultation. Skin cancer 2WW referrals to our centre have sharply increased by 44.1% over the past 2 years, and in the 12 months preceding the UK COVID-19 lockdown (March 2019 to February 2020) represented 41.8% of all referrals to the Dermatology department. Teledermatology for 2WW referrals was implemented at our centre in 2019 to manage this demand.

As skin cancer services must be consultant-led, and teledermatology is particularly amenable to solitary working, there is a risk that the need to educate trainees in the practice of teledermatology is being neglected. This may be compounded by the effects of the COVID-19 pandemic, during which the over-riding priority has been to maintain clinical services. UK dermatology trainees do not currently receive any formal teledermatology training as part of the Joint Royal College of Physicians Training Board national curriculum, and so the overdue addition of teledermatology to the curriculum from August 2021 is welcomed.⁵ We propose that supervised teledermatology clinics must be fast-tracked into trainee timetables nationwide, enabling the next generation of dermatologists to become adept and experienced in this relatively novel practice.

One way for trainees to become involved in teledermatology would be to shadow a consultant teledermatology clinic list until they become familiar with the technique. Subsequently, the trainee would take on their own reduced teledermatology list in parallel with the consultant, with a review of all trainee cases at the end of each session; the number of cases per session could be built up gradually over time. Consultant clinic templates and job plans would clearly need to be adjusted accordingly. Such an approach would mirror training techniques practised by other visual specialties such as ophthalmology and radiology. At our centre, we have also established a weekly teledermatology multidisciplinary team meeting attended by consultants and trainees, at which challenging cases are discussed for consensus; this not only enhances patient outcome and safety, but also promotes teledermatology training. We propose that such a model could be adopted widely across NHS trusts.

Fast-tracking teledermatology clinics into trainee timetables is an essential step to prepare the trainee for life as a consultant, which will inevitably involve some aspect of regular teledermatology work in the years ahead. The COVID-19 pandemic has necessitated and hastened the adoption of teledermatology across the UK, and in doing so has sharply highlighted the effectiveness, flexibility and overall importance of this practice.