


## Disclosure statements

Nothing to disclose.

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# Detection of a second outbreak of chilblain-like lesions during COVID-19 pandemic through teledermatology

## Editor

Teledermatology (TD) was previously described as an efficient substitute for in-person visits for COVID-19-associated lesions.<sup>1</sup>

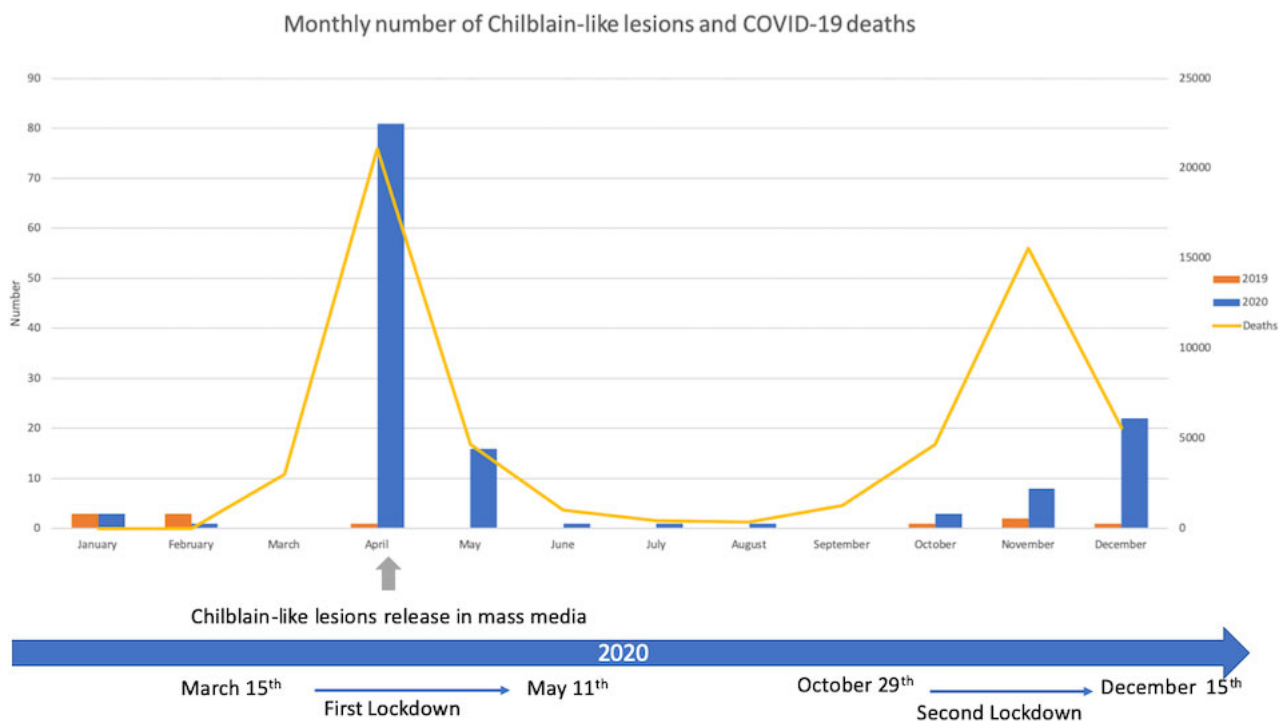
During the first COVID-19 wave, chilblain-like lesions (CLLs) were the most reported dermatological manifestation.<sup>2–4</sup> Although SARS-CoV-2 infection polymerase chain reaction and serology testing were negative for most cases, this unexpected outbreak of chilblains like lesions remained remarkable.<sup>5</sup>

To date, it is unclear whether CLL outbreak reported during the first COVID-19 pandemic is related to media release of this particular sign right after the wave or whether observed CLLs are truly associated with COVID-19 disease.<sup>6</sup> Therefore, we aimed to evaluate the prevalence of request with the stated diagnosis of CLLs observed in two TD networks (store and forward requests addressed by either general practitioner dermatologists or institutions) between January and December 2020 and to compare this prevalence to that observed between January and December 2019 in one of the two TD centres. In 2020, the monthly number of COVID-19 deaths and CLLs was visualized on the same graph. Continuous variables were compared using Wilcoxon test and categorical variable using chi-square test.

In 2020, out of 4493 TD requests, 137 were for CLLs (3%). In 2019, out of 3554 requests, 11 were for CLLs (0.3%). Between 2019 and 2020, the number of requests for CLLs increased up to ten times. Two peaks of CLL prevalence were identified in 2020, one in March/April (period 1) and another in November/December (period 2); these two periods fitted perfectly the COVID-19 peaks of deaths in France (Fig. 1). The characteristics of the requests during the COVID-19 pandemic are summarized in Table 1. Most of the requesting physicians were general practitioners ( $n = 71$  (86%) and  $n = 29$  (97%) for the periods 1 and 2, respectively). Neither patients' median age nor sex ratio significantly differed between the two time periods. A minority of patients had COVID-19 symptoms or a recent COVID-19 contact: 41% during the first period vs 23% during the second period. During the second period, more than half of physicians associated observed CLLs to COVID-19. The PCR and serology results were not available.

Our results highlight the following: (1) an increase in the number of TD requests for CLLs between 2019 and 2020, (2) two peaks of TD requests for CLLs concomitant with peaks of COVID-19 deaths in 2020 and (3) general practitioners as major requesting physicians.

The causal link between chilblain-like lesion and COVID-19 is highly controversial.<sup>7</sup> Similar to the first CLL outbreak, which was observed away from cold weather, TD networks also enabled the detection of a second CLL outbreak before the cold weather of winter and concomitant with the second peak of COVID-19 deaths in France. These findings confirmed the second wave of CLLs previously described by Piccolo *et al.*<sup>8</sup> The clinical and histopathological features of COVID-19-associated CLLs have been described as similar to non-COVID-19-associated CLLs. Histological studies showed a mild interface dermatitis featuring vacuolar degeneration of



**Figure 1** Monthly requests for chilblain-like lesion in 2020 and in 2019 and COVID-19 death curve in 2020.

**Table 1** Characteristics of TD requests during the two pandemic outbreaks in France

		Chilblain-like lesions Period 1 N (%) N = 82	Chilblain-like lesions Period 2 N (%) N = 30	P
	Period	April	November–December	
Centre, n	Centre 1	16	20	
	Centre 2	66	10	
Requesting physician n (%), NA = 4	GP	71 (86)	29 (97)	
	Institution	2 (2)	1 (3)	
	Dermatologist	5 (6)	0 (0)	
Median age (range) in years IQR [25–75]		29 (21–39) NA = 5	23,5 (18,8–36) NA = 2	0.3
Female		49 (59)	15 (50)	0.3
Past chilblain history		2 (2,3) NA = 39	1 (3,3)	–
Raynaud phenomenon		0 (0) NA = 40	3 (10)	–
COVID symptoms or contact, yes		34 (41)	7 (23) NA = 1	0.2
Physicians' suspicion of COVID association		42 (51) NA = 39	18 (60)	–

the basal epidermal layer, and SARS-CoV-2 in endothelial cells of skin biopsies was detected by immunohistochemistry and electron microscopy.<sup>9</sup>

As in previously reported literature, the majority of TD CLLs were observed in young and healthy patients, with no sex predilection.<sup>2</sup> CLLs seem to be associated with asymptomatic or

mildly symptomatic COVID-19 patients.<sup>10</sup> The low rate of past history of chilblain or Raynaud phenomenon highlights the absence of associated autoimmune disease in most cases.<sup>10</sup>

In conclusion, our study reinforces the hypothesis that the association between CLLs and COVID-19 infection is not fortuitous. It also places TD as a good alternative for face-to-face consultations for detecting early dermatological manifestations during times of crisis.

### IRB approval status

AP-HP Henri Mondor IRB# 00011558 and CEERB Paris Nord IRB# 00006477.

### Conflicts of interest

None to declare.

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## SARS-CoV-2: skin diseases, mask wearing and unpleasant sensations

Editor

The requirement to wear masks as part of barrier measures to prevent the transmission of SARS-CoV-2 has generated many

**Table 1** Demographic data

	No skin disease N = 5196		Skin disease not involving the face N = 1075		Skin disease involving the face N = 950		P value
Country	N	%	N	%	N	%	<0.001
France	1445	27.8	213	19.8	227	23.9	
Germany	1044	20.1	177	16.5	179	18.8	
Spain	1319	25.4	359	33.4	325	34.2	
Italy	1388	26.7	326	30.3	219	23.1	
Age	49 ± 28		45 ± 24		35 ± 25		<0.001
Sex	N	%	N	%	N	%	
Women	2544	49	555	51.6	542	57.1	<0.001
Men	2652	51	520	48.4	408	42.9	
Area	N	%	N	%	N	%	0.003
Urban area	2451	47.2	536	49.9	474	49.9	
Semi-urban area	1627	31.3	334	31.1	322	33.9	
Rural area	1118	21.5	205	19.1	154	16.2	
Wear Mask	N	%	N	%	N	%	<0.001
0–4 h	2861	55.1	514	47.8	370	38.9	
4–8 h	1604	30.9	384	35.7	369	38.8	
>8 h	731	14.1	177	16.5	211	22.2	
Unpleasant sensation	1846	35.5	571	53.1	655	68.9	<0.001
Itch	722	13.9	233	21.7	292	30.7	<0.001
Tingling	714	13.7	246	22.9	321	33.8	<0.001
Sensation of tightness	612	11.8	168	15.6	210	22.1	<0.001
Burning sensation	299	5.8	111	10.3	128	13.5	<0.001
Protect from others look	2180	42	383	35.6	554	58.3	<0.001