

## The impact of the COVID-19 pandemic on diagnostic delay of skin cancer: a call to restart screening activities

To the Editor

The COVID-19 pandemic has led to delays in diagnosis and treatment of patients with skin cancer: presentational delay of patients to the physician, diagnostic referral delay due to restrictions of diagnostic capacities, and/or treatment delay (decision to defer treatment due to increased risk of COVID-19 transmission or health policy restrictions to treatment capacities).

A significant decrease in skin cancer diagnoses during the lockdown months in 2020 has been reported in studies from the UK Northern Cancer Network,<sup>1</sup> and in US dermatology practices.<sup>2</sup> A decrease in skin cancer referrals during the lockdown was reported in a study in the National Cancer Control Program in Ireland.<sup>3</sup> In a survey conducted by the Global Coalition for Melanoma Patient Advocacy, dermatologists across 36 countries estimated that one-fifth (21%) of melanoma cases went undiagnosed and that one-third of skin check appointments were missed due to the pandemic.<sup>4</sup>

Furthermore, there are concerns that diagnostic delay may be associated with thicker and higher stage skin tumours.

Retrospective single-centre studies in a small number of patients have reported conflicting results on the Breslow thickness of melanomas diagnosed before and after COVID-19 lockdown, with some studies reporting an increase in thickness<sup>5</sup> and others, a decrease.<sup>6</sup> A Spanish modelling study based on the rate of growth of melanomas predicted that with a 1-month diagnostic delay, there would be an upstaging rate of 21%, while with a 3-month diagnostic delay, there would be an upstaging in 45% of cases.<sup>7</sup> In another modelling study, for patients with invasive cutaneous melanoma in England, UK, a 3-month delay to diagnosis was predicted to result in a reduction in long-term 10-year cancer-specific net survival ranging from 3.13% in patients 30–39 years old, to 7.32% in patients 70–79, and 12.56% in patients of 80+ age.<sup>8</sup>

Published recommendations on screening for skin cancer during the COVID-19 pandemic are presented in Table 1.<sup>9,10</sup> It has been proposed that in order for skin cancer screening to be cost-effective, high-risk individuals should be targeted. This is even more so during the COVID-19 pandemic. In the pre-COVID era, it was reported that even patients diagnosed with melanoma did not perform skin self-examination (SSE) on a regular basis.<sup>11</sup> During the COVID-19 pandemic, more patients may be inclined to perform SSE and to have fewer follow-up clinic visits. In addition, primary care physicians may assist in skin cancer screening during the COVID-19 pandemic to prevent visits to the

**Table 1** Recommendations on screening for skin cancer during the COVID-19 pandemic

	Screening for skin cancer in individuals with no prior history of skin cancer	Screening for skin cancer in patients diagnosed with melanoma
<b>EADV Melanoma Task Force position statement<sup>9</sup></b>	<p>May be postponed for max 2–3 months:</p> <p>Periodical examinations due to increased melanoma risk</p> <p>The use of teledermatology is recommended for routine check-ups</p>	<p>May be postponed for max 2–3 months:</p> <p>In COVID-19 lockdown, follow-up visits and imaging may be postponed in asymptomatic patients with stage 0-IIA</p> <p>Tumour-free, high-risk patients should continue to have physical and imaging exams, especially during the first 3 years after surgery of the primary tumour</p> <p>All patients should be educated and encouraged to perform skin self-examination once per month</p>
<b>Belgian Association of Dermato-Oncology position paper<sup>10</sup></b>	<p>Urgent care. No postponement:</p> <ul style="list-style-type: none"> <li>-Referral for possible skin cancer</li> <li>-Planned digital dermoscopy follow-up of specific lesion(s) after 3–4 months</li> </ul> <p>Semi-urgent care. Can be postponed for max 8–12 weeks:</p> <ul style="list-style-type: none"> <li>-Dysplastic nevus syndrome with family history of melanoma</li> </ul> <p>Low priority. Can be postponed beyond 12 weeks:</p> <ul style="list-style-type: none"> <li>-Dysplastic nevus syndrome with negative personal/family history of melanoma</li> </ul>	<p>Urgent care. No postponement:</p> <ul style="list-style-type: none"> <li>-Referral for possible skin cancer</li> <li>-Planned digital dermoscopy follow-up of specific lesion(s) after 3–4 months</li> <li>-Follow-up of stage II and stage III melanoma within first 2 years of follow-up</li> <li>-Follow up of multiple primary melanomas</li> <li>-Follow-up SCC of moderate/poor differentiation or prior metastasis or transplant patient or history of multiple SCCs</li> <li>-Any patient with skin cancer history who is worried (first triage by teleconsultation)</li> </ul> <p>Semi-urgent care. Can be postponed for max 8–12 weeks:</p> <ul style="list-style-type: none"> <li>-Follow-up of stage II and stage III melanoma after 2 years of follow-up</li> <li>-Follow-up stage I melanoma and in situ melanoma</li> <li>-Follow-up low-risk SCC</li> <li>-Follow-up multiple BCC</li> </ul> <p>Low priority. Can be postponed beyond 12 weeks:</p> <ul style="list-style-type: none"> <li>-Follow-up BCC</li> </ul>

hospitals after education on whole-body skin examination, on mnemonic signs such as the ABCDE rule and the 'ugly duckling' sign and possibly on the use of dermoscopy.

Teleconsultation is advised whenever possible.<sup>9,10</sup> Teledermatology may be used for the triage of individual concerning lesions, and for virtual melanoma checks, especially for those at highest risk of SARS-Cov-2 infection including frail or elderly patients, and those with chronic diseases or immunosuppression.<sup>12</sup> Teledermatology cannot replace medical inspection, dermoscopy and physical examination. However, teledermatology can help identify those patients who should present in person for an examination. In our experience, this is necessary in approximately one-third of patients. Among proactive measures to raise awareness on skin cancer screening and diagnosis during the pandemic, TV spots and social media may bring tangible and user-friendly messages to the public.

In conclusion, we have entered a phase of delayed care in the diagnosis and treatment of skin cancer patients due to the Covid-19 pandemic. The actual impact of the pandemic on staging, survival and mortality will continue to be assessed as further empirical evidence accumulates. Once the pandemic is reasonably under control, we should undertake multifaceted efforts to care for those patients who have not been diagnosed or treated.

### Conflicts of interest

Dr. Garbe reports grants and personal fees from BMS, personal fees from MSD, grants and personal fees from NeraCare, grants and personal fees from Novartis, personal fees from Philogen, grants and personal fees from Roche, grants and personal fees from Sanofi, outside the submitted work. Dr Stratigos reports personal fees and/or research support from Novartis, Roche, BMS, Abbvie, Sanofi, Regeneron, Genesis Pharma, outside the submitted work. Dr Dessinioti has no conflict of interest to declare.

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### References

- Andrew TW, Alrawi M, Lovat P. Reduction in skin cancer diagnoses in the UK during the COVID-19 pandemic. *Clin Exp Dermatol* 2021; **46**: 145–146.
- Marson JW, Maner BS, Harding TP *et al.* The magnitude of COVID-19's effect on the timely management of melanoma and nonmelanoma skin cancers. *J Am Acad Dermatol* 2021; **84**: 1100–1103.
- Murray G, Roche D, Ridge A, Hackett C, Tobin AM. Response to 'Reduction in skin cancer diagnosis, and overall cancer referrals, during the COVID-19 pandemic'. *Br J Dermatol* 2021; **184**: 580–581.

- Survey reveals one fifth of melanomas, globally, went undiagnosed during COVID-19 pandemic. URL <https://spotthedot.org/en/news/survey-reveals-one-fifth-of-melanomas-globally-went-undiagnosed-during-covid-19-pandemic/>. (last assessed: 10 May 2021).
- Shannon AB, Sharon CE, Straker RJ, 3rd *et al.* The impact of the COVID-19 pandemic on the presentation status of newly diagnosed melanoma: a single institution experience. *J Am Acad Dermatol* 2021; **84**: 1096–1098.
- Ricci F, Fania L, Paradisi A *et al.* Delayed melanoma diagnosis in the COVID-19 era: increased breslow thickness in primary melanomas seen after the COVID-19 lockdown. *J Eur Acad Dermatol Venereol* 2020; **34**: e778–e779.
- Tejera-Vaquero A, Nagore E. Estimated effect of COVID-19 lockdown on melanoma thickness and prognosis: a rate of growth model. *J Eur Acad Dermatol Venereol* 2020; **34**: e351–e353.
- Sud A, Torr B, Jones ME *et al.* Effect of delays in the 2-week-wait cancer referral pathway during the COVID-19 pandemic on cancer survival in the UK: a modelling study. *Lancet Oncol* 2020; **21**: 1035–1044.
- Arenbergerova M, Lallas A, Nagore E *et al.* Position statement of the EADV Melanoma Task Force on recommendations for the management of cutaneous melanoma patients during COVID-19. *J Eur Acad Dermatol Venereol* 2021; **35**: e427–e428.
- Brochez L, Baurain JF, Del Marmol V *et al.* Recommendations for skin cancer consultation and surgery during COVID-19 pandemic. *J Eur Acad Dermatol Venereol* 2020; **34**: 1876–1878.
- Dieng M, Smit AK, Hersch J *et al.* Patients' views about skin self-examination after treatment for localized melanoma. *JAMA Dermatol* 2019; **155**: 914.
- Janda M, Swetter SM, Horsham C, Soyer HP. Virtual melanoma checks during a pandemic. *Br J Dermatol* 2020; **183**: 752–753.

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## Cutaneous manifestations of patients hospitalized with coronavirus disease 2019 (COVID-19)

Dear Editor

In December 2019, a new member of the coronavirus family emerged in Wuhan city in Hubei Province of China, and rapidly spread all over the world causing a pandemic.<sup>1,2</sup> A recent Cochrane review categorized different presentations of coronavirus disease 2019 (COVID-19) into four groups: respiratory, systemic, cardiovascular and gastrointestinal. However, some bizarre manifestations like olfactory problems,<sup>3</sup> thrombotic events<sup>4</sup> and even mental problems<sup>5</sup> may exist with this infection. One of these rare presentations is skin involvement that can even be the first presentation of the disease.<sup>6</sup> Dermatologic signs and symptoms of COVID-19 are diverse and still need investigation to be completed. We conducted a study between September and October 2020 on 387 COVID-19 hospitalized patients in Imam Reza Hospital of Mashhad, Iran. All COVID-19 cases were confirmed according to the diagnosis of pulmonologists and infectious disease specialists based on polymerase chain reaction test