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CASE AND RESEARCH LETTERS

How Has the COVID-19 Pandemic and Lockdown Affected Breslow Thickness in Cutaneous Melanoma?*

¿Cómo ha afectado la pandemia y el confinamiento por COVID-19 al espesor de Breslow de los melanomas cutáneos?

To the Editor,

The potential impact of delayed diagnosis and treatment on prognosis in cutaneous melanoma is concerning. On March 15, 2020, the Spanish Government declared a nationwide state of alarm due to the COVID-19 pandemic and the country entered lockdown, leading to the interruption of face-to-face primary care and specialist visits for conditions other than COVID-19 and a switch to telephone and online consultations for priority and urgent care. The Dermatology Department at Complejo Hospitalario de Navarra (CHN) cancelled all first-time visits between March 16 and April 22, but continued with in-hospital and remote interdisciplinary consults and conducted essential first and follow-up visits telematically or by telephone. Surgical procedures for the excision of squamous cell carcinomas and melanomas also continued.

The aim of this study was to analyze Breslow thickness in patients diagnosed with cutaneous melanomas between March and October 2020 and compare our findings with data from the same period in 2018 and 2019 to determine whether the diagnosis of malignant melanocytic lesions might have been delayed due to changes to primary care, lockdown, and/or fear of COVID-19 among the general population.

This was a descriptive, retrospective, cross-sectional study of all primary cutaneous melanomas diagnosed at the CHN in Pamplona and Hospital García Orcyoyen in Estella, which serve a population of 545488 inhabitants.¹ Patients diagnosed with recurrences or metastases were excluded.

Breslow thickness was analyzed as a continuous quantitative variable (in millimeters) and an ordinal variable with 5 categories: melanoma in situ, ≤ 1 mm, >1 -2 mm, >2 -4 mm, and >4 mm. Means and categorical variables were compared using the *t* test and linear trend χ^2 test, respectively, with 95% confidence intervals and a statistical significance level of $P < .05$ in both cases.

We studied 210 melanomas: 78 (37.1%) diagnosed in 2018, 77 (36.7%) diagnosed in 2019, and 55 (26.2%) diagnosed in 2020. As Breslow thickness did not differ significantly between 2018 and 2019 ($P = .424$; $P = .245$) (Fig. 1), the 2 periods were combined to compare with 2020. Mean (SD) Breslow thickness was 1.1 (2.29) mm in 2018-2019 and 2.28 (4.29) mm in 2020. The difference neared statistical significance ($P = .056$). The most noteworthy finding was the existence of significant differences in Breslow thickness categories between 2018-2019 and 2020 ($P = .02$). Overall, 47.1% of melanomas diagnosed in 2018-2019 were in situ; 25.2% measured ≤ 1 mm, 12.3% >1 -2 mm, 9% >2 -4 mm, and 6.5% >4 mm (Fig. 2). In 2020, 21.8% of the melanomas were in situ, 30.9% measured ≤ 1 mm, and 21.8% measured >1 -2 mm. The other 2 subgroups (>2 -4 mm and >4 mm) each accounted for 12.7% of all tumors (Fig. 2). The proportion of melanomas in situ was strikingly lower in 2020 (21.8%) than in 2018-2019 (47.1%), but the opposite trend was seen for thicker melanomas, as 78.1% of all melanomas diagnosed in 2020 were invasive (>0.1 mm) compared with 53% in 2018-2019. Of note, 25.4% of these melanomas were >2 mm (vs. 15.5% in 2018-2019) and there were 3 very thick tumors (18 mm, 19 mm, and 20 mm). These findings were to be expected, as it has been estimated that the proportion of large, thick melanomas increases substantially after 1 month of diagnostic delay.²

Difficulties accessing primary and specialist care due to lockdown during the COVID-19 pandemic led to the diagnosis of fewer and thicker tumors. It can therefore be considered that their diagnosis was delayed.³⁻⁵ Patients may also have experienced diagnostic delays because they were afraid of becoming infected with SARS-CoV-2, underestimated the seriousness of their skin lesion, or did not seek care for small, asymptomatic, or hidden lesions.⁶

Once the main lockdown period ended, face-to-face visits, with fewer patients, were reestablished and normal surgical activity resumed. Virtual consults with images were encouraged and rapid appointment pathways established. The pandemic has brought to the fore the potential of teledermatology. Primary care physicians, however, need training

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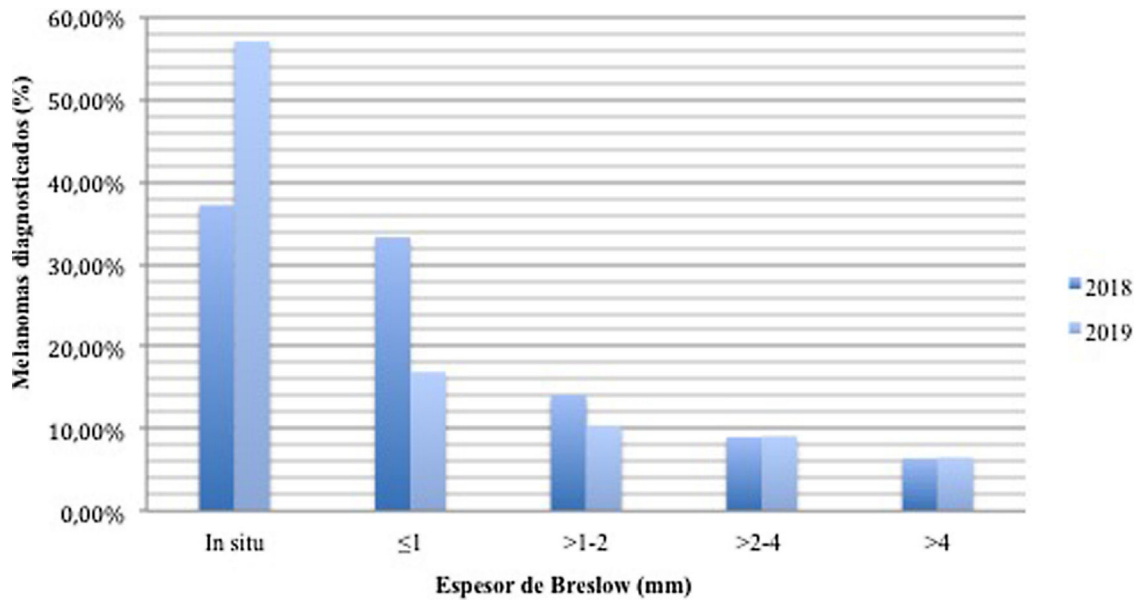


Figure 1 Clustered bar graph showing the percentage of melanomas diagnosed in each Breslow thickness categories (melanoma in situ, ≤ 1 mm, $>1-2$ mm, $>2-4$ mm, and >4 mm) in 2018 and 2019.

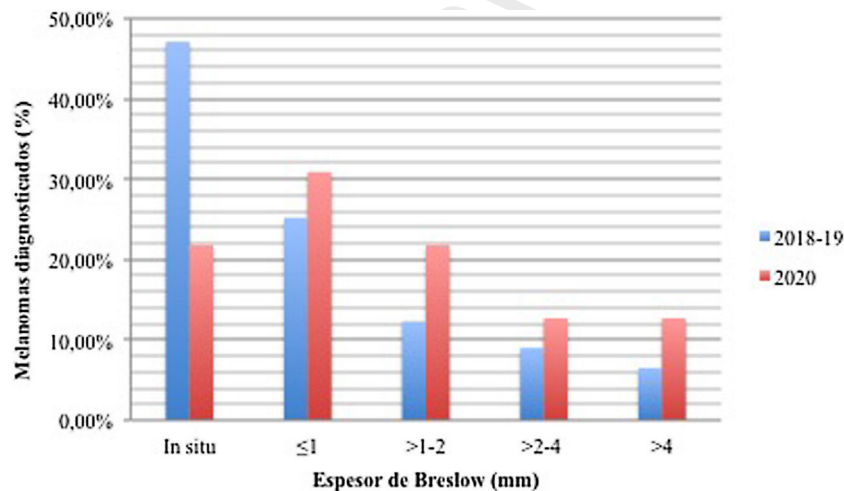


Figure 2 Clustered bar graph showing the percentage of melanomas diagnosed in each Breslow thickness category (melanoma in situ, ≤ 1 mm, $>1-2$ mm, $>2-4$ mm, and >4 mm) in 2018-2019 and 2020.

86 in both dermatology and photography, and face-to-face vis-
 87 its are important for obtaining high-quality clinical and
 88 dermoscopic images. Now is the time to invest in training
 89 to facilitate access to dermatologists through quality teled-
 90 ermatology services, while also increasing awareness of the
 91 importance of face-to-face assessments in our specialty.

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95 Conflicts of Interest

96 The authors declare that they have no conflicts of interest.

References

1. Instituto estadístico de Navarra. Departamento de Salud del Gobierno de Navarra. Zonificación sanitaria de Navarra a fecha de 1 de enero de 2016, Available from: https://www.navarra.es/home_es/Temas/Portal+de+la+Salud/Profesionales/Informacion+tecnica/Sanidad/zonificacion+sanitaria+navarra.htm. [Accessed 6 March 2021].
2. Tejera-Vaquerizo A, Cañueto J, Toll A, Santos-Juanes J, Jaka A, Ferrandiz-Pulido C, et al. Estimación del efecto en el tamaño y la supervivencia de los tumores cutáneos debido al confinamiento por COVID-19: modelo basado en un crecimiento exponencial. *Actas Dermosifliogr.* 2020;111:629–38, <http://dx.doi.org/10.1016/j.ad.2020.05.001>.
3. Martorell-Calatayud A, Nagore E, Botella-Estrada R, Scherer D, Requena C, Serra-Guillén C, et al. Defining fast-growing melanomas: reappraisal of epidemiological, clinical,

- 113 and histological features. *Melanoma Res.* 2011;21:121–8,
114 <http://dx.doi.org/10.1097/CMR.0b013e328342f312>.
- 115 4. Tejera-Vaquerizo A, Nagore E, Meléndez JJ, López-
116 Navarro N, Martorell-Calatayud A, Herrera-Acosta A,
117 et al. Chronology of metastasis in cutaneous melanoma:
118 growth rate model. *J Invest Dermatol.* 2012;132:1215–21,
119 <http://dx.doi.org/10.1038/jid.2011.433>.
- 120 5. Crocetti E, Caldarella A, Buzzoni C. Thickness and diame-
121 ter in melanoma: is there a relation? *Tumori.* 2015;102:e1–3,
122 <http://dx.doi.org/10.5301/tj.5000369>.
- 123 6. Porcar Saura S, Pons Benavent M, Guillén Climent S, García
124 Vázquez A. Actitud de los paciente con tumores cutáneos durante
125 la pandemia COVID-19. *Actas Dermosifiliogr.* 2021;112:182–98,
<http://dx.doi.org/10.1016/j.ad.2020.08.005>.

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