Changes in melanoma care practices during the COVID-19 pandemic: a multi-institutional cross-sectional survey

Michael S Chang[1,2] BA, Sancy A Leachman[3] MD PhD, Elizabeth G Berry[3] MD, Clara Curiel-Lewandrowski[4] MD, Alan C Geller[5] RN MPH, Douglas Grossman[6-8] MD PhD, Caroline C Kim[9,10] MD, Jennifer A Stein[11] MD PhD, Susan M Swetter[12,13] MD, Rebecca I Hartman[1,2,14] MD MPH

Affiliations: [1]Harvard Medical School, Boston, Massachusetts, USA, [2]Department of Dermatology, Brigham and Women's Hospital, Boston, Massachusetts, USA, [3]Department of Dermatology & Knight Cancer Institute, Oregon Health & Science University, Portland, Oregon, USA, [4]Department of Dermatology and the University of Arizona Cancer Center, University of Arizona, Tucson, Arizona, USA, [5]Department of Social and Behavioral Sciences, Harvard TH Chan School of Public Health, Boston, Massachusetts, USA, [6]Huntsman Cancer Institute, University of Utah, Salt Lake City, Utah, USA, [7]Department of Dermatology, University of Utah, Salt Lake City, Utah, USA, [8]Department of Oncological Sciences, University of Utah, Salt Lake City, Utah, USA, [9]Department of Dermatology, Tufts Medical Center, Boston, Massachusetts, USA, [10]Partners Healthcare, Newton Wellesley Dermatology Associates, Wellesley, Massachusetts, USA, [11]The Ronald O. Perelman Department of Dermatology, New York University Grossman School of Medicine, New York, New York, USA, [12]Stanford University Medical Center and Cancer Institute, Stanford, California, USA, [13]Dermatology Service, Veterans Affairs Palo Alto Health Care System, Palo Alto, California, USA, [14]Department of Dermatology, VA Integrated Service Network 1 (VISN-1), Jamaica Plain, Massachusetts, USA

Corresponding Author: Rebecca I Hartman MD MPH BWH, Department of Dermatology, Harvard Medical School, *221 Longwood Avenue, Boston, MA 02215, Tel: 617-732-4918 Fax: 617-582-6060, Email: rhartman@bwh.harvard.edu*

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To the Editor:

The coronavirus disease 2019 (COVID-19) pandemic has impacted healthcare delivery considerably. During the onset of COVID-19 in the United States from March to May 2020, outpatient care and elective surgeries declined by nearly 70% [1,2]. For primary cutaneous melanoma biopsied with uninvolved margins, National Comprehensive Cancer Network (NCCN) short-term guidance initially recommended deferring wide local excision (WLE) and sentinel lymph node biopsy (SLNB) for up to three months and prioritizing surgery for T3/T4 melanomas [3]. Recent findings suggest that delays in melanoma treatment may increase mortality [4]. We sought to assess impact of COVID-19 on melanoma specialist practices in the U.S.

From June 6 to September 17, 2020, an electronic survey was administered to Melanoma Prevention Working Group (MPWG) members, comprised of interdisciplinary academic melanoma specialists involved in the National Cancer Trials Network. Participants were sourced from the MPWG mailing list (N=237) to identify U.S. dermatologists who treat melanoma patients. Respondents were limited to one melanoma specialist per site to capture institution-level experiences (N=51 total). Surveyed data included provider demographics and changes in melanoma practices. Our exposure was defined as "before COVID-19 closures" (January 2020) and "during COVID-19 closures" (greatest impact from March-May 2020). The Brigham and Women's Hospital Institutional Review Board approved this study.

Eighteen providers from distinct institutions responded (response rate 35.3%), (**Table 1**). Most physicians (N=17; 94.4%) practiced in academic centers in urban/metropolitan (N=11; 61.1%) settings, in the Northeast (N=9; 50%), West (N=5; 27.8%), Midwest (N=2; 11.1%), and South (N=2; 11.1%). All providers were aware of NCCN short-term guidelines (N=18; 100%) and nearly half reported personal protective equipment shortages at their site (N=8; 44.4%). The estimated duration of initial

Table 1. *Changes in practice and surgical management by Melanoma Prevention Working Group respondents for patients with melanoma.*

Characteristics	Mean (SD)	Mean delay (weeks)	P-value[1]
Difference in weekly visits before and after COVID-19 closure[2]			
New in-person visits	-4.0 (3.1)	-	<0.001
New telemedicine appointments	0.67 (1.3)	-	0.04
Follow-up in-person visits	-23.2 (18.6)	-	<0.001
Follow-up telemedicine appointments	3.4 (4.0)	-	0.002
Delays in surgery for new patients with melanoma[2,3,4]			
Stage T0, in situ			-
Delay WLE (negative margins), (%)	38.8 (45.9)	6.0 (2.14)	
Delay WLE (positive margins), (%)	36.4 (42.4)	6.5 (2.14)	
Stage T1a			-
Delay WLE (negative margins), (%)	35.3 (44.1)	6.4 (2.4)	
Delay WLE (positive margins), (%)	32.9 (39.9)	5.3 (2.1)	
Stage T1b			-
Perform WLE, delay SLNB (negative margins), (%)	27.5 (39.1)	6.8 (1.1)	
Perform WLE, but delay SLNB (positive margins), (%)	22.0 (29.4)	7.0 (1.3)	
Delay WLE + SLNB (negative margins), (%)	10.0 (23.7)	5.0 (1.4)	
Delay WLE + SLNB (positive margins), (%)	5.0 (12.7)	5.0 (1.4)	
Stage T2/T3/T4			-
Perform WLE, delay SLNB (negative margins), (%)	13.3 (24.0)	5.3 (3.1)	
Perform WLE, delay SLNB (positive margins), (%)	15.6 (26.5)	4.0 (2.0)	
Delay WLE + SLNB (negative margins), (%)	2.2 (6.7)	4.0	
Delay WLE + SLNB (positive margins), (%)	1.1 (3.3)	6.0	

Abbreviations: COVID-19, coronavirus disease-19; SD, standard deviation; WLE, wide local excision; SLNB, sentinel lymph node biopsy.
[1]Paired t-tests were used to calculate significance (alpha=0.05).
[2]Defined pre and post pandemic, as January 2020 versus March-to-May 2020.
[3]American Joint Committee on Cancer 8th edition criteria were used to define staging.
[4]Percentages are of all patients and are not site-specific.

COVID-19 closures to clinic practices were 8.5 weeks (standard deviation [SD] 3.5).

Mean in-person weekly visits for new melanoma patients significantly decreased from 4.8 to 0.8 (SD: 3.1; P<0.001) from March-May 2020 (**Table 1**). Mean weekly telemedicine visits for new melanoma patients increased from 0 to 0.67 (SD 1.3; P=0.04). Most asymptomatic, early-stage (I and II) follow-up patients were re-scheduled for in-person appointments (mean delay of 10.9 weeks), (SD 5.0). Nearly half of early-stage patients with symptomatic/concerning lesions were seen in-person (41.1%; SD 43.6) and half via telemedicine with later in-person follow-up (44.4%; SD 44.0). Providers reported delaying WLE for approximately one-third of T0/T1a melanomas, regardless of margin status on the biopsy specimen (average delay of approximately 6 weeks), (**Table 1**). Conversely, nearly all patients with T2-T4 tumors underwent WLE as scheduled, although up to 15.6% had delays in SLNB of 4.0-5.3 weeks, depending on biopsy margin status.

We found significant changes to melanoma specialist clinic practices during the COVID-19 pandemic. New melanoma patient in-person visits were reduced significantly, which was not offset by the increase in telemedicine appointments. Asymptomatic follow-up visits were largely deferred, whereas appointments for those with concerning

lesions were pursued in-person or via telemedicine. Overall, these delays are in-line with prior publication of estimated diagnostic delays associated with the COVID-19 pandemic [5]. Based on a previously published mean melanoma growth rate (0.11mm/month), our observed delays in screening follow-up patients for new melanoma diagnoses could potentially cause an estimated mean 0.28 mm increase in tumor thickness [6]. Not all survey respondents followed NCCN guidance, potentially owing to differences in COVID-19 prevalence, governmental responses, and practice settings.

Limitations include selection, recall, and response biases inherent to survey design. Although our cohort is nationally representative, it consists of mostly academic specialty dermatologists and may not represent nationwide practices. Given the short time-frame of this survey, further research is needed to understand the long-term impact of practice delays on melanoma staging/outcomes.

Potential conflicts of interest

The authors declare no conflicts of interest.

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