Resilience of melanoma diagnostics at a tertiary-care hospital during the SARS-CoV-2 pandemic

To the Editor: On March 11, 2020, the World Health Organization elevated the coronavirus disease 2019 (COVID-19) to global pandemic status. Systems-level changes in governance, health care resource allocation, and social-behavioral norms developed worldwide in efforts to reduce viral spread. An unintended consequence of these changes was a disruption of routine preventative health care practice, leading to delay or deferral of diagnostic evaluation and therapy across multiple disciplines.¹,² In the field of melanoma, screening, biopsy, and histopathologic diagnosis form the foundation of secondary prevention. Importantly, early detection via timely screening has been shown to reduce melanoma-specific mortality.³ To evaluate the longitudinal effects of care interruptions during the COVID-19 pandemic on melanoma diagnoses, we performed a retrospective cohort analysis of patients evaluated in a tertiary care setting. The timeframe of greatest preventive care interruption was selected as March 2020 to May 2020 based on the population-level SARS-CoV-2 case count and mortality statistics for Suffolk County, Massachusetts (Fig 1).⁴

Unbiased structured data were extracted from standardized synoptic surgical pathology reports for 3160 melanoma cases between January 2016 and January 2022, comprising 1113 dermatopathology cases from MGH clinics and 2047 dermatopathology consultations reviewed for patients referred to the MGH Melanoma Center. Patient demographics, case dates, and tumor Breslow thickness were recorded; cases with Breslow thickness ≤0.1 mm and >20 mm were manually reviewed. Statistical analyses were performed using GraphPad Prism 9.3.1. Data were binned at 1-month resolution and the number of melanoma diagnoses visualized depicting seasonal and pandemic-related variation (Fig 1). Monthly melanoma diagnoses fell sharply between March and May 2020 from an overall mean of 44 to a low of 17, corresponding with peak county-wide SARS-CoV-2 mortality (Fig 1). Breslow thickness is considered the most important prognostic factor for primary cutaneous melanoma.⁵ To evaluate if patients presented with more advanced lesions during periods of reduced screening and biopsy, mean Breslow thickness was compared. Nonparametric Kruskal-Wallis analysis of variance showed a significant increase in Breslow thickness of melanomas diagnosed in April 2020 when compared to April of 2016, 2017, 2018, and 2019 (Fig 1) as well as compared to aggregate prepandemic April data (Fig 2, left; 95% confidence interval [CI]: 2.9-5.3 mm vs 1.4-2.8 mm, P < .0005). The difference was driven by loss of thin melanomas (<1 mm), suggesting that patients with more clinically advanced lesions were triaged for evaluation and biopsy during the pandemic shutdowns. There were only 2 diagnoses of primary cutaneous melanoma made on dermatopathology specimens from MGH clinics in April 2020, with Breslow thickness of 3.2 mm and
5.3 mm (range, April 2016-2019: 95% CI: 0.8-2.9 mm).
The mean Breslow thickness for consultation cases was also increased in April 2020 compared to prior years (95% CI: 1.5-5.6 mm vs 1.4-2.3 mm; \( P < .01 \)).

While the long-term effects of transiently delayed evaluation may not become apparent for several years, overall prepandemic (January 2016-March 2020) and pandemic era (April 2020-January 2022) Breslow thickness was unchanged in our cohort (Fig 2, right). This encouraging finding suggests resilience of our health care system during the COVID-19 pandemic.

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Conflict of interest

Soma Jobbagy, Kristine Chaudet, Matthew Gayhart, Veronica Klepeis, and Lyn Duncan have no interests to report. Genevieve Boland reports a relationship with Olink Proteomics, InterVenn Biosciences, Merck & Co, Iovance Biotherapeutics Inc, Palleon Pharmaceuticals Inc, and Ankyra Therapeutics. Hensin Tsao reports a relationship with Epiphany Dermatology, LazarusAI, Wolters Kluwer UpToDate, and JAAD.

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