postoperatively.[3-5] This study is the first to quantify anxiety at progressing stages of MMS. Based on our study, interventions targeting anxiety would likely best be performed preoperatively (especially overall anxiety) or between the last stage of Mohs surgery and the repair (especially scar-related anxiety).

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Underuse of sentinel lymph node biopsy for early-stage melanoma

To the Editor: Sentinel lymph node biopsy (SLNB) plays a crucial role in the prognostication of cutaneous melanoma. Current guidelines by the National Comprehensive Cancer Network recommend offering SLNB to patients with intermediate-thickness melanoma (stage IB to IIC).[1] While the landmark MSLT-I trial[2] demonstrated no survival benefits to SLNB, later studies have concluded the opposite.[3,4] SLNB also carries defined surgical morbidity. Therefore, the value of lymphatic mapping for any given patient remains a topic of controversy. In this multi-institutional retrospective study, we sought to identify factors associated with SLNB noncompletion, the documented rationales in clinical practice, and impact on survival.

We identified 1040 patients at Massachusetts General Hospital and Dana-Farber Cancer Institute with melanomas >1-mm thick. Reasons for noncompletion were determined using chart review and classified into 3 categories: advanced age and/or comorbidities, patient deferral, and unknown. Patients ≥80 years old at diagnosis without a documented reason for noncompletion were determined to be due to advanced age/comorbidities. We used multiple logistic regressions to identify factors associated with SLNB noncompletion and adjusted for multiple hypotheses testing with the Benjamini-Hochberg correction. Finally, to investigate the downstream impact of SLNB, we built multivariate Cox proportional-hazards models for recurrence-free survival (RFS) and overall survival adjusted for age, sex, Breslow thickness, ulceration, and history of a previous melanoma.

We found 260 (25%) eligible patients did not undergo SLNB (Table I). Of these patients, 168 (65%) were due to age or comorbidities. The most common comorbidities were history of cancer (30.4%), chronic pulmonary disease (17.6%), and peripheral vascular disease (13.5%). Further, 33 (13%) patients deferred biopsy after discussion.

Table I. Patient and tumor characteristics of the studied cohort

Characteristic	All SLNB recommended *N* = 1040*	SLNB performed *N* = 780	SLNB not performed			*P* value†
			Reason unknown *N* = 59	Age/comorbidity *N* = 168	Patient declined *N* = 33	
Age	63 (51-74)	60 (49-68)	72 (57-77)	80 (76-84)	75 (65-78)	<.001
Sex						.003
Female	436 (42)	341 (44)	21 (36)	64 (38)	10 (30)	
Male	604 (58)	439 (56)	38 (64)	104 (62)	23 (70)	
Race						.813
White	1023 (98)	766 (98)	57 (97)	167 (99)	33 (100)	
Other/unreported	17 (1.6)	14 (1.8)	2 (3.4)	1 (0.6)	0 (0)	
Insurance						<.001
Medicare	518 (50)	333 (43)	31 (53)	126 (75)	28 (85)	
None/self-pay	87 (8.4)	53 (6.8)	13 (22)	20 (12)	1 (3.0)	
Private	435 (42)	394 (51)	15 (25)	22 (13)	4 (12)	
Marital status						<.001
Married	695 (67)	539 (69)	38 (64)	97 (58)	21 (64)	
Divorced	64 (6.2)	53 (6.8)	3 (5.1)	7 (4.2)	1 (3.0)	
Single	148 (14)	121 (16)	7 (12)	16 (9.5)	4 (12)	
Widowed	100 (9.6)	42 (5.4)	11 (19)	42 (25)	5 (15)	
Other/unknown	33 (3.2)	25 (3.2)	0 (0)	6 (3.6)	2 (6.1)	
Median income, (in $1000)	96 (76-117)	96 (77-117)	99 (74-133)	96 (75-117)	93 (84-107)	.79
Melanoma stage						
I	543 (52)	414 (53)	32 (54)	85 (51)	12 (36)	
II	497 (48)	366 (47)	27 (46)	83 (49)	21 (64)	
Breslow thickness	1.78 (1.25-2.90)	1.75 (1.25-2.80)	1.43 (1.14-2.92)	1.80 (1.40-3.20)	2.35 (1.23-3.85)	.16
Ulceration						.64
Absent	761 (74)	575 (74)	43 (73)	120 (73)	23 (70)	
Present	255 (25)	188 (24)	16 (27)	42 (26)	9 (27)	
Anatomic location						<.001
Trunk	333 (32)	266 (34)	19 (32)	42 (25)	6 (18)	
Head or neck	239 (23)	152 (19)	23 (39)	53 (32)	11 (33)	
Lower limb or hip	209 (20)	165 (21)	9 (15)	29 (17)	6 (18)	
Upper limb or shoulder	259 (25)	197 (25)	8 (14)	44 (26)	10 (30)	
Histology type						<.001
Lentigo maligna	51 (4.9)	23 (2.9)	11 (19)	11 (6.5)	6 (18)	
Nodular	253 (24)	192 (25)	18 (31)	34 (20)	9 (27)	
Superficial spreading	519 (50)	392 (50)	22 (37)	87 (52)	18 (55)	
Melanoma, NOS	217 (21)	173 (22)	8 (14)	36 (21)	0 (0)	
Previous melanoma	267 (26)	167 (21)	16 (27)	74 (44)	10 (30)	<.001
Recurrence	259 (25)	167 (21)	18 (31)	64 (38)	10 (30)	<.001
Mortality	313 (30)	163 (21)	31 (53)	104 (62)	15 (45)	<.001

The average and median follow-up times were 7.40 and 6.59 years, respectively.
NOS, Not otherwise specified; *SLNB*, sentinel lymph node biopsy.
*Median (IQR); *n* (%).
†One-way ANOVA.

We were not able to identify the reason for SLNB noncompletion for the remaining 59 (23%) patients after thorough chart review. Increased age (odds [OR] = 1.14, Cl: 1.11-1.16, q < 0.001), lack of insurance (OR = 3.86, Cl: 2.04-7.38, q < 0.001), and lentigo maligna histology (OR = 3.58, Cl: 1.60-8.17, q = 0.013) were associated with increased odds of SLNB noncompletion (Table II). SLNB noncompletion was associated with both worse RFS (hazard ratio = 1.74, CI: 1.29-2.34, $P < .001$; Supplementary Table I, available via Mendeley at https://data.mendeley.com/datasets/g63f2s89wz) and worse overall survival (hazard ratio = 1.93, CI: 1.48-2.53, $P < .001$; Supplementary Table II, available via Mendeley at https://data.mendeley.com/datasets/g63f2s89wz).

In this retrospective study, we found SLNB for melanoma to be underutilized at 2 large NCI-designated cancer centers. Most decisions not to proceed with SLNB were due to patient's age and/or

Table II. Multivariate logistic regression model of factors associated with sentinel lymph node biopsy noncompletion

Characteristic	OR	95% CI	*P* value	*q* value*
Age	1.14	1.11-1.16	<.001	<0.001
Race				
White	—	—		
Other/unreported	0.37	0.06-1.72	.23	0.48
Sex				
Female	—	—		
Male	1.00	0.66-1.52	>.99	>0.99
Insurance type				
Medicare	—	—		
None or self-pay	3.86	2.04-7.38	<.001	<0.001
Private	1.11	0.68-1.81	.67	0.80
Marital status				
Married	—	—		
Divorced	0.82	0.35-1.80	.64	0.80
Single	1.06	0.58-1.89	.84	0.94
Widowed	1.64	0.93-2.90	.085	0.27
Other/unknown	0.67	0.23-1.76	.43	0.63
Median income	1.00	1.00-1.00	.40	0.63
Histology type				
Melanoma, NOS	—	—		
Lentigo maligna	3.58	1.60-8.17	.002	0.013
Nodular	1.28	0.74-2.23	.39	0.63
Superficial spreading	1.75	1.08-2.87	.026	0.12
Breslow thickness	1.00	0.96-1.05	.92	0.97
Ulcerated	0.65	0.42-1.00	.053	0.20
History of previous melanoma	0.92	0.61-1.35	.66	0.80
Anatomic location				
Trunk	—	—		
Head or neck	1.40	0.84-2.32	.20	0.47
Lower limb or hip	0.76	0.43-1.33	.34	0.63
Upper limb or shoulder	0.69	0.42-1.15	.16	0.43

Reference values are indicated with horizontal lines.
CI, Confidence interval; *OR*, odds ratio.
*Benjamini-Hochberg false discovery rate correction for multiple testing. A false discovery rate of 0.05 was used.

comorbidity. Additionally, our work demonstrates that self-paying patients are more likely to not undergo a SLNB. Physicians must be cognizant of health equity challenges when discussing SLNB with their patients. While the therapeutic utility of SLNB has been a recent subject of debate, our results lend support to its survival benefit. However, if immunotherapy becomes the standard of care for stage IIB and IIC melanomas, this difference in survival may shrink as recent studies have demonstrated improved RFS with immunotherapy for these patients.[5] Until then, SLNB can provide some patients with needed knowledge regarding their recurrence risk and inform their decision to seek adjuvant therapies. Limitations of this study include retrospective design, single geography, and lack of melanoma-specific survival.

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Racial disparities in diagnosis of invasive melanoma among veterans: A comparative analysis with the Surveillance, Epidemiology, and End Results Program

To the Editor: Melanoma was the fourth most common cancer in male Veterans Affairs (VA) patients in 2010.[1] Prior surveys found that 11% to 13% of US active-duty personnel routinely use sunscreen despite significant occupational sun exposure.[2] Racial disparities are important concerns in the VA and elsewhere. In this study, we compare stage distribution of melanoma at presentation, a critical prognostic factor, among white and nonwhite patients in the VA and in the general US population.

Invasive cutaneous melanoma cases from 2000 to 2019 were identified in the VA corporate data warehouse and the Surveillance, Epidemiology and End Results Program (SEER), which collects cancer incidence and survival data. Cases with an age <20 (due to absence of veterans <20), unknown histology, and melanoma in situ were excluded. Due to the small proportion of women in the at-risk veteran population, we restricted our analyses to men. Self-reported race information was collected for all cases. Two-tailed z tests were performed to test the difference in proportions of melanoma stages between the veteran population and the general population.

We identified 44,077 cases of invasive melanoma in the VA and 217,030 in SEER. Racial disparities in melanoma staging were substantially less pronounced in the VA than in SEER. In the VA, localized disease represented 77.9% of melanomas among whites, versus 71.0% among nonwhites. In SEER, the corresponding numbers were 80.7% versus 61.7%, over double the VA disparity ($P < .0001$). Similarly, the disparity between whites and nonwhites observed for metastatic disease at presentation (regional or distant) in the VA was lower than the disparity observed in SEER ($P < .0001$). Distant metastatic disease at presentation represented 6.1% of melanomas among whites versus 8.6% among nonwhites in the VA, while in SEER it represented 4.8% of melanomas among whites versus 11.3% of melanomas in nonwhites, more than double the VA disparity ($P < .0001$) (Table I).

The trend of a lower racial disparity in the VA in the proportion of melanomas with local disease and in the proportion of distant metastasis at presentation was observed across age groups (Table II). These differences between the VA and SEER were less marked in those >65 in age. Notably, the differences between VA and SEER in racial disparities among those >65 in age were still significant for localized disease ($P < .0001$) and for distant metastasis ($P < .0001$). Nevertheless, in the VA, the racial disparities were less in those <65 than those who were older ($P < .0001$ for localized disease; $P < .0001$ for distant metastasis).

Strengths of this study include its large population size. Limitations of this study include the predominantly elderly and male VA population, potentially underreported utilization of non-VA dermatologic care and variation in geographic regions covered by each database. The current results suggest that the