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Distribution of the dermoscopic features of melanoma of trunk and extremities according to the anatomic sublocation



To the Editor: The dermoscopic patterns and criteria of melanoma of the trunk and extremities are well known and have been reported in several studies.^{1,2} However, whether these criteria are equally present in melanomas of all anatomic regions remains unclear. The present study investigated the dermoscopic morphology of melanomas located on the trunk and extremities according to the following anatomic sublocations: thorax, abdomen, upper back, lower back, upper extremities, and lower extremities.

This retrospective study was conducted at 2 referral skin cancer centers in Thessaloniki, Greece. Our databases were screened, and 400 melanomas from 400 patients were found and included in the analysis. The study population consisted of 197 males (49.3%) and 203 females (50.7%), with a mean age of 50.6 ± 16.4 years (range, 10-94 years).

All dermoscopic images were evaluated by 2 independent investigators with experience in dermoscopy. A third investigator was involved in case of disagreement. The selection of dermoscopic variables was based on available literature on dermoscopy of invasive melanoma and melanoma in situ.^{1,2} Univariate and multivariate regression analyses were performed to identify significant correlations between dermoscopic criteria and anatomic sublocations.

The detailed results of the dermoscopic analysis for each anatomic sublocation are given in [Table I](#)

and additional results in the Supplementary file (available via Mendeley at <https://data.mendeley.com/datasets/7fc4f8hhfk/1>). With univariate and multivariate analyses we identified dermoscopic criteria significantly associated to each anatomic location ([Fig 1](#); Supplementary file).

Regression structures (odds ratio [OR], 1.80) and shiny white lines (OR, 2.12) were significantly more frequent in melanomas located on the upper back compared with all other sublocations. These findings are consistent with a previous study by Jaimes et al³ that assessed the dermoscopic morphology of melanoma developing on chronically sun-damaged skin. In the latter study, although the authors did not provide analytic results on each anatomic sublocation, they did mention that most of the melanomas located on the upper back displayed peripheral pigmentation and featureless areas in the center, which were usually scar-like or hypopigmented.

Melanomas on the lower extremities displayed irregular hyperpigmented areas (OR, 3.18) and prominent skin markings (OR, 6.00) more frequently compared with all other sublocations. Both of these features were recently introduced as potent predictors of early melanoma.² In line with our results, a previous study found them to be more frequent in melanomas developing on the lower legs compared with melanomas on the back.⁴

Regarding the remaining anatomic sublocations, the most noteworthy finding was the significantly higher frequency of negative pigment network in melanomas located on the abdomen (OR, 2.51) compared with all other sublocations.

Finally, irregular dots/globules (OR, 2.25) and atypical vascular pattern (OR, 2.09) were associated with the location of upper extremities.

Our study has several limitations, including the retrospective design and the lack of a control group, which did not allow us to assess the accuracy of the described criteria for melanoma diagnosis.

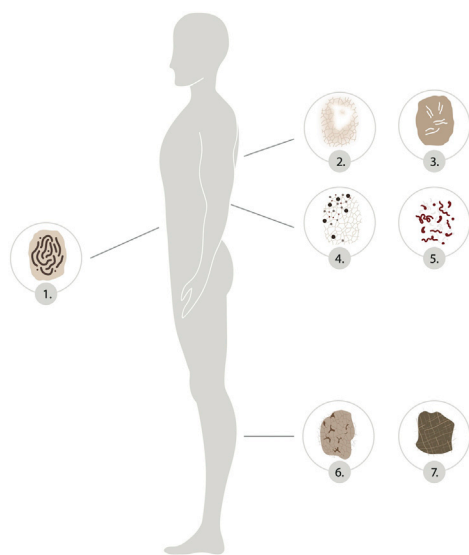
In conclusion, our study suggests that the dermoscopic morphology of melanoma depends on the anatomic sublocation. This topographic analysis might aid clinicians to recognize melanoma according to its precise location.

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Table I. Frequency of melanoma-specific dermoscopic criteria based on anatomic sublocation

Dermoscopic criteria*	Anatomic sublocation					
	Thorax (n = 46)	Abdomen (n = 30)	Upper back (n = 114)	Lower back (n = 50)	Upper extremities (n = 65)	Lower extremities (n = 95)
Global pattern						
Reticular	32 (69.6)	16 (53.3)	71 (62.3)	30 (60.0)	49 (75.4)	57 (60.0)
Globular	4 (8.7)	0 (0.0)	6 (5.3)	4 (8.0)	5 (7.7)	1 (1.1)
Starburst	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.5)	0 (0.0)
Homogeneous	0 (0.0)	1 (3.3)	1 (0.9)	0 (0.0)	0 (0.0)	4 (4.2)
Multicomponent	9 (19.6)	8 (26.7)	17 (14.9)	11 (22.0)	2 (3.1)	12 (12.6)
Structureless	0 (0.0)	4 (13.3)	15 (13.2)	1 (2.0)	4 (6.2)	9 (9.5)
Non/hypopigmented	1 (2.2)	1 (3.3)	5 (4.4)	4 (8.0)	4 (6.2)	12 (12.6)
Local features						
Atypical pigment network	39 (84.8)	24 (80.0)	78 (68.4)	40 (80.0)	50 (76.9)	62 (65.3)
Angulated lines	4 (8.7)	0 (0.0)	6 (5.3)	6 (12.0)	5 (7.7)	12 (12.6)
Irregular dots/globules	31 (67.4)	16 (53.3)	78 (68.4)	34 (68.0)	50 (76.9)	41 (43.2)
Peripheral rim of globules	1 (2.2)	0 (0.0)	1 (0.9)	0 (0.0)	0 (0.0)	0 (0.0)
Irregular blotch	8 (17.4)	6 (20.0)	25 (21.9)	9 (18.0)	15 (23.1)	7 (7.4)
Irregular hyper pigmented areas	10 (21.7)	4 (13.3)	22 (19.3)	6 (12.0)	23 (35.4)	44 (46.3)
Irregular streaks	8 (17.4)	2 (6.7)	10 (8.8)	4 (8.0)	4 (6.2)	12 (12.6)
Regression structures	18 (39.1)	20 (66.7)	78 (68.4)	32 (64.0)	35 (53.8)	51 (53.7)
Shiny white lines	3 (6.5)	1 (3.3)	17 (14.9)	5 (10.0)	1 (1.5)	11 (11.6)
Negative pigment network	3 (6.5)	7 (23.3)	13 (11.4)	7 (14.0)	4 (6.2)	13 (13.7)
Prominent skin markings	1 (2.2)	0 (0.0)	5 (4.4)	3 (6.0)	9 (13.8)	26 (27.4)
Blue-white veil	8 (17.4)	3 (10.0)	18 (15.8)	12 (24.0)	13 (20.0)	10 (10.5)
Blue-black color	0 (0.0)	3 (10.0)	8 (7.0)	2 (4.0)	3 (4.6)	6 (6.3)
Atypical vascular pattern	5 (10.9)	8 (26.7)	20 (17.5)	12 (24.0)	25 (38.5)	32 (33.7)

*Values are n (%).

**Fig 1.** Dermoscopic predictors of melanoma based on anatomic location: (1) negative pigment network, (2) regression structures, (3) shiny white lines, (4) irregular dots/globules, (5) atypical vascular pattern, (6) irregular hyperpigmented areas, and (7) prominent skin markings.

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Controversies in defining a surgical site infection following Mohs micrographic surgery: A literature review



To the Editor: Mohs micrographic surgery (MMS) is widely used to treat nonmelanoma skin cancer. The most frequent complication of MMS is surgical site infections (SSI),¹ with incidences ranging from 0.07% to 4.34%.² Variations among studies in the definition of SSI used may contribute to the wide range of rates reported.³ The Centers for Disease Control and Prevention (CDC) has defined SSI as occurring within 30 days of a procedure and meeting at least 1 of 4 characteristics, including purulent drainage, positive wound culture, clinical criteria, or diagnosis of SSI by the surgeon/attending physician.⁴ However, this definition is infrequently used in the literature.⁵ The lack of a consensus definition of SSI after MMS renders the true prevalence of SSI unknown, hindering the development of informed antibiotic

and infection-control guidelines. Here, we sought to review the existing literature on infection rates after MMS and variations among the criteria for SSI reported.

A PubMed search was performed by using a combination of relevant terms (Fig 1). Studies reporting SSI rates after MMS were included. A total of 402 articles were identified in the initial search. Of these, 370 were excluded from further review (Fig 1). Thus, 32 studies remained for analyses.

The criteria used to define SSI varied widely among studies. One (3.1%) study used the full CDC criteria to define SSI. Seven studies (21.9%) required a positive wound culture result to diagnose SSI, 17 (53.1%) studies used clinical criteria alone as sufficient to diagnose SSI, and 8 (25.0%) studies did not define their criteria for SSI. The length of follow-up also varied: 15 (46.9%) studies monitored SSI for 2 weeks or less; 7 (21.9%) studies monitored for at least 30 days after surgery. The prevalence of SSI varied according to the definition of SSI used. Five (71.4%) of the 7 studies requiring a positive wound culture result reported SSI rates of greater than 3%, compared to 3 (17.6%) of the 17 studies that were based on clinical criteria alone and 2 (25.0%) of the 8 studies that did not define criteria.

SSIs impart a significant burden to the health care system, warranting continued efforts at prevention. The ability to reduce rates of SSI requires an accurate understanding of their true prevalence, which can be accomplished only with a standardized definition. Our study shows lack of consistency in the definition of SSI after MMS. Moreover, there may be an association between the definition of SSI and the

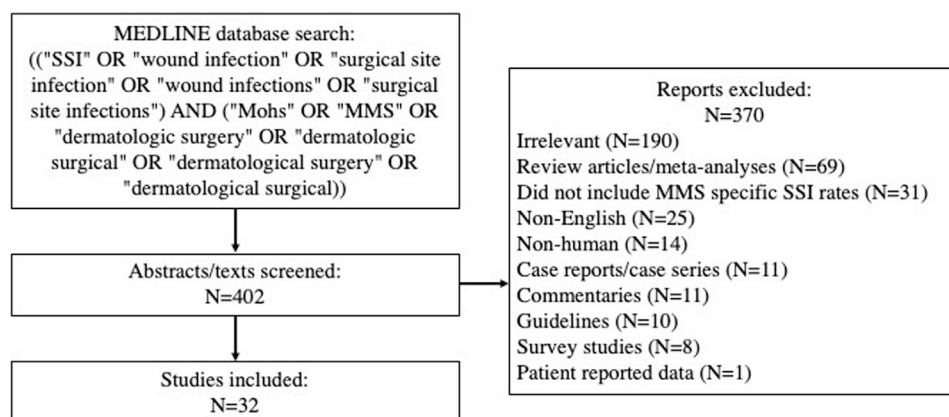


Fig 1. Literature search flow diagram. *MMS*, Mohs micrographic surgery; *SSI*, surgical site infection.