

Surgical margins for melanoma in situ

Joy H. Kunishige, MD,^a David G. Brodland, MD,^b and John A. Zitelli, MD^b
Pittsburgh, Pennsylvania

Background: A controversy in the treatment of melanoma in situ is the required width of surgical margin. The currently accepted 5-mm margin is based on a 1992 consensus opinion, despite data since then showing this is inadequate.

Objective: We sought to develop guidelines for predetermined surgical margins for excision of melanoma in situ.

Methods: A prospectively collected series of 1072 patients with 1120 melanoma in situs was studied. All lesions were excised by Mohs micrographic surgery with frozen-section examination of the margin. The minimal surgical margin was 6 mm, and the total margin was calculated by adding an additional 3 mm for each subsequent stage required. The minimum surgical margin that would successfully remove 97% of all tumors was calculated. Local recurrence was also tabulated.

Results: In all, 86% of melanoma in situs were successfully excised with a 6-mm margin; 9 mm removed 98.9% of melanoma in situs. The superiority of 9-mm to 6-mm margins was significant ($P < .001$). Gender, location, and diameter did not affect results. Recurrence rate for this set of patients treated with Mohs micrographic surgery was 0.3% ($n = 3$).

Limitations: Margins less than 6 mm were not studied. This is a referral center for melanoma in situ and 10% of tumors were previously treated before presentation to our clinic.

Conclusion: The frequently recommended 5-mm margin for melanoma is inadequate. Standard surgical excision of melanoma in situ should include 9 mm of normal-appearing skin, similar to that recommended for early invasive melanoma. (*J Am Acad Dermatol* 2012;66:438-44.)

Key words: excision; guidelines; lentigo maligna; melanoma; melanoma in situ; Mohs micrographic surgery.

American dermatologists diagnose 80,000 melanomas a year, most of which are melanoma in situ. The oft-cited National Institutes of Health Consensus recommends 5-mm margins for melanoma in situ. This is based on expert opinion published in 1992.¹ More recent guidelines for Australia and New Zealand concede 5 mm is a grade-C recommendation based only on "some support."² Numerous studies have shown 5 mm to be inadequate for at least half of melanoma in situ.³⁻⁷ Further, 30% to 40% of dermatologists may use even smaller margins.^{8,9}

Today, dermatologists usually perform the definitive surgery for melanoma in situ.^{10,11} Guidelines based on current evidence are needed now more than ever. This study offers guidelines for the standard excision of all melanoma in situs. Standard excision refers to excision without margin control, ie, not Mohs micrographic surgery or staged excision with en face examination of the entire margin. Recommendations are validated by the determination of recurrence rate (which is directly related to inadequate excision), cancer-specific survival, and overall survival.

From Zitelli and Brodland,^a and University of Pittsburgh Medical Center.^b

Funding sources: None.

Conflicts of interest: None declared.

Presented as a Tromovitch Award Finalist at the American College of Mohs Surgery Annual Meeting in Austin, TX, on April 23, 2009.

Accepted for publication June 13, 2011.

Reprint requests: Joy H. Kunishige, MD, Zitelli and Brodland, 5200 Centre Ave, Suite 303, Pittsburgh, PA 15232. E-mail: Joy444@gmail.com.

Published online December 26, 2011.

0190-9622/\$36.00

© 2011 by the American Academy of Dermatology, Inc.

doi:10.1016/j.jaad.2011.06.019

METHODS

A prospective database of all patients referred for Mohs excision of melanoma began in 1982, and records various patient and tumor characteristics. All patients with biopsy-proven primary melanoma in situ from March 1982 through September 2008 were considered for this study. Patients without follow-up were excluded.

All patients were treated with Mohs micrographic surgery, which was initiated by excising the biopsy site or remaining visible tumor with 3 mm of normal-appearing skin to adipose (debulking procedure) (Fig 1). Immediately after debulking, an additional 3-mm margin was taken laterally and excised as a single piece down to deeper adipose for frozen-section examination by Mohs technique. Therefore, the smallest margin attempted was 6 mm; 4- μ m thick sections were stained with hematoxylin and eosin. The immunostain HMB-45 was used in the early 1990s but discontinued after determined to be unreliable, and MART-1 has been used since August 2002.¹² Frozen sections were examined and any remaining tumor was marked on a map representing the surgical wound.

Criteria for determining positive margins has been previously published.^{12,13} Positive margins were defined as those containing at least one of the following: (1) nests of at least 3 atypical melanocytes, (2) melanocytes above the dermoepidermal junction, and (3) "nonuniform" crowding of cells along the basement membrane. Other histologic findings raising suspicion include: (1) extension of atypical, crowded melanocytes far down adnexal structures, (2) nonuniform distribution of pigment, (3) excessive number of melanophages, and (4) brisk inflammatory response. Increased melanocyte density and mild to moderate confluence alone are typical of melanocytic hyperplasia in sun-damaged skin, and were not interpreted as melanoma.^{12,13} Using these criteria, our center has previously compared the interpretations of frozen sections with paraffin sections by a blinded dermatopathologist: frozen sections had a sensitivity of 100% in detecting melanoma when present and a specificity of 90%.¹⁴

When necessary another "stage" was performed, ie, another 3-mm margin of skin was excised from areas of the wound containing tumor, until a tumor-

free plane was reached. The wound was then repaired or allowed to heal by secondary intention.

The minimum surgical margin that would successfully extirpate 97% of melanoma in situ was calculated for the entire cohort, and for subgroups based on gender, location, and diameter. This figure of 97% allowed a 3% chance of inadequate excision,

consistent with historical tolerance of local recurrence in previous studies.¹⁵⁻¹⁹

Recurrence rate was tabulated. Recurrence was defined as reappearance of tumor within or adjacent to the scar, with an intraepidermal component, and represents inadequate initial excision. Overall and cancer-specific survivals were also determined.

RESULTS

Patient and lesion characteristics

From 1982 to 2008, 1246 consecutive patients were treated for primary melanoma in situ. In all, 174 patients (14%) had no follow-up and were excluded, usually because they were treated toward the end of the accrual period. The final cohort comprised 1072 patients with 1120 melanoma in situs. Of patients, 60% were men and the mean age was 65 years (SD 15). Most tumors were located on the face and clinical diameter was variable (Table I). Although the mean tumor diameter was 2.8 cm, 73% of all tumors were less than 3 cm. Mean follow-up was 4.7 years (0.02-23.5).

Margins and percent clearance

Six-mm margins were adequate for complete clearance in 86% of all tumors; 9-mm margins were adequate for complete clearance in 98.9% of all tumors. A 1.2-cm margin yielded 99.4% clearance, 1.5-cm margin yielded 99.6% clearance, and 3-cm margin yielded 100% clearance (Fig 2 and Table II). To achieve 97% clearance rate, a 9-mm margin was necessary. The superiority of 9-mm to 6-mm margins was statistically significant ($P < .001$). Clearance rate relative to surgical margin was unaltered when tumors were analyzed separately by gender, location, and diameter (Table II).

Recurrence rate

Three melanoma in situs reappeared within or adjacent to the scar, reflecting incomplete removal. Recurrence rate was 0.3%. Cure rate was 99.7% at 5

CAPSULE SUMMARY

- The commonly recommended 5-mm surgical margin for melanoma in situ may yield a clearance rate less than 86%, and is therefore inadequate.
- If standard excision of melanoma in situ is performed, a 9-mm margin should be used, which will clear 98.9% of tumors.
- These recommendations for melanoma in situ are similar to those for early invasive melanoma.

Download English Version:

<https://daneshyari.com/en/article/3207078>

Download Persian Version:

<https://daneshyari.com/article/3207078>

[Daneshyari.com](https://daneshyari.com)