Dermatology Practical & Conceptual

Wise or Wide? Rethinking Surgical Margins for Melanoma

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To the Editor,

Traditionally, melanomas are managed with a two-staged surgical approach. First, a so-called "diagnostic" excision is performed with predefined clinical margins of 1–3 mm, following European guidelines [1]. If melanoma is confirmed, a subsequent wide local excision (WLE) is recommended regardless of the histopathological margin status obtained with the first excision. In contrast to all other cancer surgeries, the purpose of the diagnostic excision is thus reduced to simply providing a histopathological classification of the melanoma when it could potentially also serve a curative purpose. This two-stage practice is rooted in historical principles rather than being based on scientific evidence and persists despite the lack of data demonstrating improved melanoma-specific survival [2]. Given this, along with the rising incidence (and probable overdiagnosis) of melanoma in situ (MIS) and thin invasive melanomas, which have excellent prognosis, it is time to critically reassess this long-standing "one-size-fits-all" two-staged excision policy for melanoma.

Over the past decades, the recommended clinical surgical margins for WLE have progressively narrowed from 3–5 cm to 1–2 cm, largely due to evidence from several randomized controlled trials that found no significant difference in recurrence rates, overall survival, or melanoma-specific survival with wider margins [2]. Today, the recommended clinical surgical margins for WLEs are 5 mm for melanoma in situ, 1 cm for thinner invasive melanomas (≤2.0 mm Breslow thickness), and 2 cm for thicker invasive melanomas [1]. The historic reasoning behind the need for WLEs has been twofold: to reduce the risk of local recurrences by potentially removing residual melanoma and to detect and remove microsatellites in the hopes of preventing regional metastases.

In regard to the first reason, a population-based study from the Netherlands including 31,802 early melanomas (8,362 MIS and 23,440 pT1 melanomas, i.e., with Breslow thickness ≤1.0 mm) recently showed that residual melanoma was only found in 1.1% of the WLE specimens following a prior diagnostic excision with clear histopathological margins [3]. With regard to recurrence rates, another recent nationwide Dutch study showed no significant differences in recurrence rates among 5,918 melanoma patients undergoing WLE and 204 in which no WLE was performed [4]. Other recent but smaller Greek and UK studies on patients with non-lentiginous MIS showed no recurrence among 30 and 46 cases, respectively, that did not undergo

WLE (follow-up 8.1 years [median] and 2.5 years [mean], respectively) nor among the 23 and 20 patients, respectively, that underwent WLEs with narrower than 5-mm clinical surgical margins (follow-up 4.3 years [median] and 2.5 years [mean], respectively) [5].

With regard to the detection and removal of microsatellites, this is mainly an issue affecting thicker melanomas. Studies have shown that microsatellites are extremely rare in thin (pT1) melanomas, occurring in only 0.1–0.2% of cases [3,6]. Furthermore, the presence of microsatellites already indicates regional spread of the disease, and it remains unclear whether additional surgery in such cases would actually provide a survival benefit.

Although the risks are seemingly negligible, the historic desire to ensure complete removal of residual melanoma and microsatellites clearly stems from the limitations of the initial diagnostic excision with such narrow clinical surgical margins. As mentioned, the primary diagnostic excision focuses mainly on confirming melanoma, with little or no attention paid to the actual histopathological margins obtained. Regrettably, such narrow clinical surgical margins lead to incomplete excision rates of 7–24% [7]. Moreover, most completely excised cases will have very narrow (<1 mm) histopathological margins, raising concerns about whether these are truly sufficient, especially when analyzing the excised tissue using traditional bread-loaf sectioning with potential sampling errors. Although there is no consensus on what histopathological safety margins can be considered sufficient, 1 mm has been proposed for sharply demarcated (i.e., non-lentiginous and non-desmoplastic) melanomas [8]. If so, the recommended 1–3 mm clinical surgical margins used in diagnostic excisions of melanomas should be reconsidered and increased to 5 mm to ensure sufficiently clear histopathological margins. For sharply demarcated melanomas, this would essentially eliminate incomplete excisions entirely and guarantee safer histopathological margins in practically all cases.

In recent decades, increased patient awareness and advances in dermoscopy have facilitated earlier detection, shifting the spectrum of diagnosed melanomas toward MIS and thin invasive lesions [5]. Since 2021, the Swedish national guidelines for melanoma only require a single excision for MIS as long as the obtained histopathological margins are ≥2 mm [9]. Thus, when a preoperative prediction of MIS is made, slightly larger clinical surgical margins of approximately 5 mm can be used directly to ensure complete excision with the required histopathological margins for all cases of MIS (including most lentigo maligna with a smaller diameter and well-defined borders). Nowadays, this "wise" one-step surgical approach for melanoma surgery for MIS is favored by an increasing number of dermatologists over the old-fashioned "wide" two-step surgical approach with its obvious drawbacks in terms of added patient morbidity and discomfort, unnecessary use of healthcare resources, and increased costs.

This marks a significant departure from traditional WLE principles and acknowledges that the histopathological margins obtained, rather than arbitrarily assigned clinical surgical margins, should dictate the need for further surgical management. While this principle is now being applied for MIS by dermatologists in Sweden, we are now also aiming to extend the same logic to invasive melanomas through the ongoing WoW ('Wise or Wide') trial.[10] In this prospective, randomized controlled trial, patients with pT1 melanomas completely excised with ≥1.5 mm histopathological margins are randomized (1:1) to WLE or no WLE to assess non-inferiority in terms of recurrence rates at five years (primary endpoint) and 10 years (secondary endpoint). In the near future, adopting "wise" clinical margins for melanoma ensuring adequate histopathological clearance may allow the first excision to also be the final one.

References

1. Garbe C, Amaral T, Peris K, et al. European consensus-based interdisciplinary guideline for melanoma. Part 2: Treatment - Update 2022. *Eur J Cancer*. 2022;170:256-284. DOI:10.1016/j.ejca.2022.04.018. PMID: 35623961.
2. Zijlker LP, Eggermont AMM, van Akkooi ACJ. The end of wide local excision (WLE) margins for melanoma? *Eur JCancer*.2023;178:82-87. DOI: 10.1016/j.ejca.2022.10.028. PMID: 36423526.
3. Schurink AW, Verhoef C, Waalboer-Spuij R, Mooyaart A, Grünhagen DJ. Evaluation of residual tumour in wide local excision for melanoma: A nationwide population-based study. *Eur J Cancer*. 2025:115364. DOI:10.1016/j.ejca.2025.115364. PMID: 40175257.
4. Stekelenburg I, Laeijendecker AE, van Doorn RC, et al. Reconsidering the surgical approach in cutaneous melanoma: does wide local excision after a complete diagnostic excision reduce the risk of recurrence? *Eur J Cancer*. 2025:115366. DOI: 10.1016/j.ejca.2025.115366. PMID: 40175258.
5. Bell KJL, Soyer HP, Ferguson PM. Is Wide Local Excision After Primary Excision of Melanoma In Situ Unnecessary? *JAMA Dermatol*. 2025. DOI: 10.1001/jamadermatol.2025.3077. PMID: 40900611.
6. Wennberg E, Bittar R, Svensson H, Paoli J. The Frequency of Microsatellite Metastases, Satellite Metastases, and Residual Tumor in Thin Melanomas: A Retrospective Cohort Study. *Dermatol Pract Concept*. 2025;15(2). DOI:10.5826/dpc.1502a5157. PMID: 40401854. PMCID: PMC12090915.
7. Berglund S, Johansson Backman E, Baldawi Z, et al. Incomplete Excisions of Melanocytic Lesions: Rates and Risk Factors. *Acta Derm Venereol*. 2021;101(3):adv00421.DOI:10.2340/00015555-3784. PMID: 33723615. PMCID: PMC9366675.

8. Weyers W. "Personalized Excision" of Malignant Melanoma -Need for a Paradigm Shift in the Beginning Era of Personalized Medicine. *Am J Dermatopathol*. 2019;41(12):884-896. DOI: 10.1097/DAD.0000000000001450. PMID: 31490196.
9. Regional Cancer Centres in Sweden [National Guidelines Malignant Melanoma]. Updated May 2025. Accessed September 24, 2025. https://kunskapsbanken.cancercentrum.se/diagnoser/melanom/vardprogram/
10. Wennberg E, Claeson M, Olofsson Bagge R, Polesie S, Paoli J. Wise or wide (WoW) study protocol: a national, multicentre, prospective, randomised and controlled, parallel group, non-inferiority study to compare single-staged versus two-staged excisions of thin invasive (≤1.0 mm) melanoma. *BMJ Open*. 2025;15(4):e094544. DOI: 10.1136/bmjopen-2024-094544. PMID: 40180392. PMCID: PMC11966995.