



## EDITORIAL

**Excision margins for primary melanomas: A controversial issue****S. Morteza Seyed Jafari**

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**S**urgical excision is the principal treatment for primary cutaneous melanoma<sup>[1]</sup>. The selection of optimal excision margins is crucial to maximize outcomes and minimize morbidities<sup>[1-5]</sup>. Insufficient resection may lead residual tumor cells to disease recurrences<sup>[1,6]</sup>. However, unnecessarily tissue excisions might cause greater morbidities, along with bad functional and cosmetic results<sup>[1-3]</sup>. The determination of melanoma excision margins has been an important issue since the earliest descriptions of melanoma<sup>[4]</sup>. In 1907, Handley stated that the excision of cutaneous melanoma should include a 5–10 cm-wide excision margin<sup>[7]</sup>. The doctrine of extensive resection margins for melanomas was not challenged until the 1970s, when the studies showed that narrower excision margins (3–5 cm) presented no difference in melanomas survival<sup>[8]</sup>.

Randomized clinical trial conducted in 1991 by the WHO Melanoma program on 3-cm and 1-cm excision margins showed 1 cm as a safe excision margin for primary cutaneous melanomas not thicker than 1 mm<sup>[9]</sup>. Another study on 2-cm versus 1-cm excision margins for patients with 1–2 mm melanomas showed that a 1-cm resection margin was associated with an increase in local recurrence, but with a similar overall survival<sup>[5]</sup>.

In order to narrow the resection margins for cutaneous melanoma thicker than 2-mm treatment, a randomized clinical trial in 2004 compared 3-cm and 1-cm resection margins, where a 1-cm excision margin was correlated with a significantly greater risk of regional recurrences that did not impact overall survival<sup>[3]</sup>. However, another randomized controlled trial on 4-cm versus 2-cm resection margins suggested 2 cm as a sufficient and safe resection margin for cutaneous melanomas thicker than 2 mm<sup>[2]</sup>. Furthermore, a recent study comparing 3-cm versus 1-cm excision margins for primary cutaneous melanomas thicker than 2 mm declared that a 1-cm excision margin is inadequate for such cutaneous melanomas on the trunk and limbs<sup>[10]</sup>. Nevertheless, another cohort study on melanomas thicker than 2 mm, which underwent tumor excision with either 2-cm or 1-cm safety margin, could not detect any statistically significant differences in melanoma outcomes<sup>[1]</sup>.

In spite of existing controversies in the various guidelines, a summary of guidelines regarding margin size based on tumor depth is provided in **Table 1**. All in all, these controversies cause heterogeneity among

surgeons regarding width of excision margins for cutaneous melanomas. As a result, further multicenter clinical trials are demanded to assess the efficacy of these various guidelines in the reduction of recurrences and improvement of survival while minimizing the morbidities of treatment<sup>[11]</sup>.

**Table 1.** Recommended clinical margin for excision of primary melanomas\*

| Breslow's depth                       | Recommended excision margin (cm) <sup>#</sup> |
|---------------------------------------|---|
| <i>In situ</i>                        | 0.5–1.0                                       |
| Thin melanoma (less than 1-mm thick)  | 1.0   |
| Intermediate melanoma (1–4-mm thick)  | 1.0–2.0                                       |
| Thick melanoma (more than 4-mm thick) | 2.0   |

\*Table summarizes current existing guidelines

<sup>#</sup>Recommended excision margins might vary according to different guidelines**Conflict of interest**

The author declares no potential conflict of interest with respect to the research, authorship and/or publication of this article.

**References**

- Hunger RE, Angermeier S, Seyed Jafari SM, Ochsenbein A, Shafiqhi M. A retrospective study of 1- versus 2-cm excision margins for cutaneous malignant melanomas thicker than 2 mm. *J Am Acad Dermatol* 2015; 72(6): 1054–1059. doi: 10.1016/j.jaad.2015.03.029.
- Gillgren P, Drzewiecki KT, Niin M, Gullestad HP, Hellborg H, *et al.* 2-cm versus 4-cm surgical excision margins for primary cutaneous melanoma thicker than 2 mm: A randomised, multicentre trial. *Lancet* 2011; 378(9803): 1635–1042. doi: 10.1016/S0140-6736(11)61546-8.
- Thomas JM, Newton-Bishop J, A'Hern R, Coombes G, Timmons M, *et al.* Excision margins in high-risk malignant melanoma. *N Engl J Med* 2004; 350(8): 757–766. doi: 10.1056/NEJMoa030681.
- Ethun CG, Delman KA. The importance of surgical margins in melanoma. *J Surg Oncol* 2016; 113(3): 339–345. doi: 10.1002/jso.24111.
- Hudson LE, Maithel SK, Carlson GW, Rizzo M, Murray DR,

- et al.* 1 or 2 cm margins of excision for T2 melanomas: Do they impact recurrence or survival? *Ann Surg Oncol* 2013; 20(1): 346–351. doi: 10.1245/s10434-012-2543-8.
6. Seyed Jafari SM, Hunger RE, Shafiqhi M. Lack of strong evidence with regard to the depth of thick melanoma excision. *Br J Dermatol* 2015; 173(4): 1095. doi: 10.1111/bjd.13871.
  7. Handley WS. The Bunterian Lectures on the pathology of melanotic growths in relation to their operative treatment. *Lancet* 1907; 169(4363): 996–1003. doi: 10.1016/S0140-6736(01)54641-3.
  8. Breslow A, Macht SD. Optimal size of resection margin for thin cutaneous melanoma. *Surg Gynecol Obstet* 1977; 145(5): 691–692. doi: 10.1016/S0022-3468(78)80413-8.
  9. Veronesi U, Cascinelli N. Narrow excision (1-cm margin): A safe procedure for thin cutaneous melanoma. *Arch Surg* 1991; 126(4): 438–441. doi: 10.1001/archsurg.1991.01410280036004.
  10. Hayes AJ, Maynard L, Coombes G, Newton-Bishop J, Timmons M, *et al.* Wide versus narrow excision margins for high-risk, primary cutaneous melanomas: Long-term follow-up of survival in a randomised trial. *Lancet Oncol* 2016; 17(2): 184–192. doi: 10.1016/S1470-2045(15)00482-9.
  11. Rosko AJ, Vankoevering KK, McLean SA, Johnson TM, Moyer JS. Contemporary management of early-stage melanoma: A systematic review. *JAMA Facial Plast Surg* 2017; 19(3): 232–238. doi: 10.1001/jamafacial.2016.1846.

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