DermPath Update

Volume 2 Number 3 - September 30, 1996

Margins of Excision for Cutaneous Melanoma

The goals of surgery for primary melanoma are cure and local tumor control. Over the past 10 years, prospective and retrospective studies have shown that cure and local control of melanoma may be achieved with margins of excision far less than the traditional 5 cm of years past.[1] Current recommendations correlate the amount of tumor-free surgical margin to the Breslow thickness of the melanoma (see Table).

Melanoma in situ, including lentigo maligna, may be excised with a margin of 0.5 cm.[2] A recent study by the WHO group suggests that margins of 0.2 - 0.3 cm may be sufficient in most cases of melanoma in situ.[3] Large diameter lesions, however, may show occasional local recurrence when excised with narrow margins.

Early melanoma, defined by the Consensus Conference as melanoma less than 1.0 mm thick, may be excised with 1.0 cm of tumor free skin.[2] The WHO prospective study suggests

1.0 cm margins for tumors up to 2.0 mm in thickness.[4,5] There were a few instances of local recurrence in their patient group with tumors 1.0 to 2.0 mm.[5] However, there was no impact on survival. Other groups have recommended 2 cm margins for melanomas 0.8 to 2 mm[6], 1 to

2 mm[7], and 1 to 4 mm in thickness[8]. The Dutch Melanoma Group recommends 3 cm margins for melanomas 2.1 to 3 mm in thickness.[7] For melanomas more than 4 mm in thickness, 2-3 cm surgical margins are recommended.[1] The treatment in locally advanced melanoma should be individualized, remembering that increasing margins of excision does not improve survival.[9]. Current surgery for melanoma usually results in wounds which may be closed primarily without grafting. This is also true for many advanced tumors.

Bernard Ackerman has suggested that proper surgical treatment of primary cutaneous melanoma is simple excision with tumor free margins.[10,11] In his opinion, the goal should be removal of melanoma cells,

not removal of normal tissue. This is an appealing theory. However, this may be difficult to apply since one cannot always see the extent of a melanoma with the naked eye. It is common to see melanoma in situ in histologic sections extending 1 to 2 mm beyond what appeared to be the clinical border of the lesion. This is particularly true in large diameter lesions and thicker melanomas. The chance for persistence of tumor, or local recurrence, will increase as the margins of excision approach the edges of the neoplasm. This is well recognized in other forms of cutaneous malignancy, such as basal cell carcinoma. Recommendations for surgical margins for melanoma should be based upon outcome analysis in clinical studies.

How can the proper margins of excision be determined in melanomas that have not been biopsied? Naedes suggests that "impalpable" melanomas be excised with a 1 cm margin and that "palpable or nodular" melanomas be removed with 2 cm margin.[12] While this may prove to be useful, it has been published that Breslow thickness does not correlate well with palpation.[13] Also, some benign tumors clinically masquerading as melanoma may be overtreated. A more frequent and practical approach is to excise, or biopsy, lesions suspected of being melanoma. Definitive therapy can then be based upon the Breslow thickness determined in the biopsy. If a lesion is only partially sampled, the clinician and patient should realize that what is left in the patient could be significantly different from what is removed in the biopsy. The treatment plan may change after histologic review of the completely removed melanocytic lesion.

Why not remove the possible melanoma and have a frozen section performed to determine the Breslow thickness? The frozen section method produces microscopic sections which are substandard in quality compared to conventional histopathology. Interpretation of frozen sections of melanocytic tumors is difficult and introduces an unacceptable risk for diagnostic error. There are certainly occasions when melanocytic tumors may be evaluated by the frozen section technique. These occasions are exceptional, however, and consultation with the pathologist is recommended prior to the actual surgery when the intraoperative pathology consultation is desired.

PBG

SURGICAL MARGINS FOR CUTANEOUS MELANOMA†

NON-INVASIVE MELANOMA - Clark Level I	SURGICAL MARGIN	REFERENCES
		-
Melanoma in situ, (including lentigo maligna)	0.2 to 0.5 cm	3,2
INVASIVE MELANOMA - Clark Level II, III, IV, OR V		
BRESLOW THICKNESS		
< 1.0 mm	1 cm	2
1 mm to 2 mm	1-2 cm	2,5,8
2 mm to 4 mm	2 cm	8
> 4 mm	2-3 cm	1

† Recommendations for surgical margins in melanoma are guidelines. As with other forms of cancer, melanoma therapy should be individualized to suit the goals and needs of the patient and to maximize chances for tumor free survival.

REFERENCES

1 Urist MM. Surgical management of primary cutaneous melanoma. CA Cancer J Clin 1996:46:217-224.
2 Sober AJ. Diagnosis and management of early melanoma: a consensus view. Seminars in Surg Oncology 1993:3:194-7.
3 Bartoli C et al. Clinical diagnosis and therapy of cutaneous melanoma in situ. Cancer 1996:77:888-892.
4 Veronesi U et al. Thin Stage I primary cutaneous malignant melanoma. N Engl J Med 1988:318:1159-1162.
5 Veronesi U, Cascinelli N. Narrow Excision (1-cm margin). Arch Surg 1991:126:438-441.
6 Ringborg U et al. Resection margins of 2 vs 5 cm for cutaneous malignant melanoma with a tumor thickness of 0.8 to 2.0 mm. Cancer 1996:77:1809-1814.
7 Rumke P, van Everdingen JJE. Eur J Cancer 1992:28:600-604.
8 Balch CM et al. Efficacy of 2-cm surgical margins for intermediate-thickness melanomas (1-4 mm). Annals of Surg 1993:218:262-269.
9 Seigler HF. Clinicopathologic factors relating to surgical margins for cutaneous melanoma. Annals Surgery 1993:217:1.
10 Ackerman AB, Scheiner AM. How wide and deep is wide enough and deep enough? Hum Pathol 1983;14:743.

11 Ackerman AB. Debunking the melanoma mythns about diagnosis, management. Dermatology Times 1996:17:1.
12 Neades GT, Hughes LE, Horgan K. Safe margins in the excision of primary cutaneous melanoma. Br J Surg 1993:80:731-733.
13 O'Donnell BF et al. Does palpability of primary cutaneous melanoma predict dermal invasion? J Am Acad Dermatol 1996:34:632-7.