

Proliferation rate of melanocytes in the free margins of lentigo maligna- an immunohistochemical study

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Abstract

Lentigo maligna are treated by surgical excision. Histological examination evaluates peri-neoplastic margins sufficiency. Measuring the margins is not simple, once neoplastic melanocytes can be similar to the hyperplastic melanocytes of photodamaged skin. We tested the utility of immunohistochemical evaluation of melanocytes proliferation index as an additional tool to more accurate neoplasia delimitation. Histological evaluation on routine stains, albeit subjective, remains the method of choice.

Key words: lentigo maligna, proliferation, surgical margin.

Introduction

Lentigo maligna (LM) and lentigo maligna-melanoma (LMM, its invasive stage), are the most common form of melanoma on the face. After complete surgical excision, histological analysis for evaluation of margins sufficiency guides the management and further tissue ablation may be required. There is an important morphological overlap between single neoplastic melanocytes spreading within peripheral epidermis, and hyperplastic melanocytes, seen in photodamaged skin. This hinders the precise tumor demarcation. The comparison of the proliferation rates of peritumoral melanocytes with those located at the tumor free margin could contribute to the delimitation of the neoplasm. Also, it could add data to the understanding of this tumor biology.

Results and Discussion

We studied 45 specimens of LM/LMM that were completed excised and had not recurred (minimum follow up of 4 years). An immunohistochemical double staining assay using Melan-A plus the proliferation marker Ki-67 antibodies was performed (image 1). Ki67⁺ melanocytes in the area corresponding to the tumor periphery and the free margin were quantified. Their average at tumor periphery was 0.35, while at tumor-free margin, 0.02. However, several cases presented no Ki-67⁺ melanocyte at tumor periphery. (Chart 1).

	Tumor border	Tumor-free skin margin
Average of Ki67+ melanocytes	0.35	0.02
Percentage of cases with no double marked melanocyte	71.11	97.78

Chart 1. Proliferation melanocytes index results at the tumor border and tumor free skin margin.

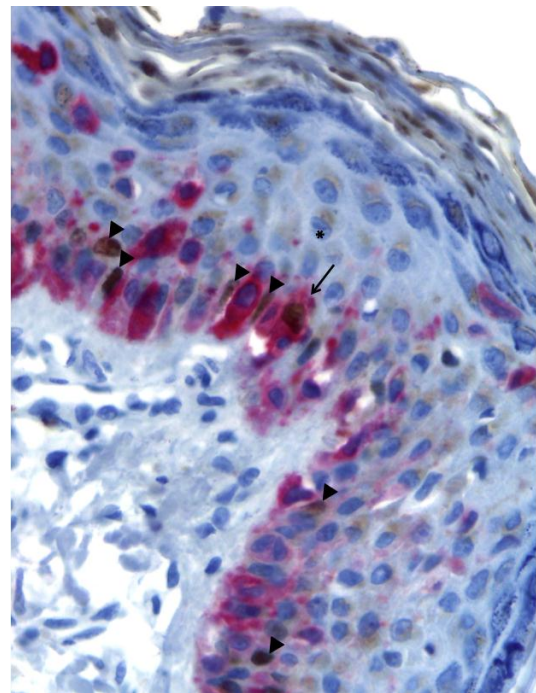


Image 1. Proliferating melanocytes with cytoplasm stained in red (anti-Melan A) and nuclei in brown (anti-Ki-67) (arrow); proliferating keratinocyte with nuclei in brown (anti-Ki-67) (arrowhead); keratinocyte with intracytoplasmic melanin (*).

Conclusions

These findings are consistent with the slow clinical progression and more favorable biological behavior of LM and LMM, in comparison with other types of melanoma. Histological evaluation on routine stains, although subjective, remains the method of choice for the delimitation of LM/LMM border. However, Ki67⁺ melanocytes along with surgical margin should be an alert of neoplasia extension.

Acknowledgement

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