MELANOMA AND MELANOCYTIC NAEVI

ROLE OF NEGATIVE CONTROL SKIN IN THE HISTOLOGIC ASSESSMENT OF SURGICAL MARGINS IN LENTIGO MALIGNA

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Introduction: Lentigo maligna (LM) is a common subtype of melanoma in situ on chronically sun-damaged skin. When treated surgically, assessment of excision margins is challenged by the histologic ambiguity between LM borders and background junctional melanocytic hyperplasia, commonly seen in chronically sun-exposed skin. Melanocyte count at the excision margins has been proposed as predictor of LM recurrence after surgery, with ≥31 melanocytes/400x magnification field predicting high risk (92-100%) for recurrence.

Objective: We hypothesize that skin type, geographical factors and degree of sun exposure play a cardinal role in melanocyte density. In Utah patients tend to have a relatively high melanocyte density due to fair skin type, high altitude, and outdoor recreation.

Materials and Methods: Negative control skin was biopsied on sun exposed areas from 52 patients undergoing staged LM excisions. Tissue was fresh-frozen and immunostained with antisera against SOX10, a nuclear protein expressed in melanocytes. Melanocyte count was determined at 400x magnification.

Results: The mean melanocyte count in negative controls in our patient population is 20.3 (range 9-36.7, median 20.5). According to published predictive models for LM recurrence, 9% of our negative controls would be comparable to high risk for recurrent LM.

Conclusions: There is no universal number for melanocyte density that can help distinguish LM from background junctional melanocytic hyperplasia. Knowing melanocyte density relative to chronically sun-damaged skin is key to the histological evaluation of surgical margins in LM. We advocate establishing a baseline melanocyte density count on surrounding unaffected skin (negative control) for each LM, and judging surgical margins for the LM as a deviation from the baseline melanocyte count.