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### 220 | In Vivo Confocal Scanning Laser Microscopy of Benign Lentigines: Comparison to Conventional Histology and In Vivo Characteristics of Lentigo Maligna

Langley RG, Burton E, Walsh N, Propperova I, Murray SJ; *J Am Acad Dermatol.* Jul 2006; 55(1):88-97.

#### ABSTRACT

**BACKGROUND:** An important challenge facing clinicians is recognizing and distinguishing benign pigmented lesions from cutaneous melanoma. Lentigines are a type of benign pigmented lesion that can resemble melanoma. Physician diagnostic accuracy is less than perfect, prompting research into noninvasive technology such as reflectance mode in vivo confocal scanning laser microscopy (CSLM).

**OBJECTIVES:** Our aims were twofold: to describe the in vivo characteristics of benign lentigines with reflectance CSLM and to compare them with histopathology; and to contrast the in vivo CSLM differences of lentigines, lentigo maligna, and lentigo maligna melanomas.

**METHODS:** Patients with a suspect pigmented lesion were prospectively recruited to undergo CSLM before biopsy. Lentigo simplex, solar lentigo, or malignant melanoma, lentigo maligna type, were included in the study. Images were qualitatively described and compared with histopathologic findings.

**RESULTS:** Ten patients, whose lesions included 6 lentigines and 4 lentigo malignas, were examined with CSLM. Distinct architectural and cytologic features were noted in benign lentigines compared with melanomas. The most striking finding in lentigines was observed at the dermoepidermal junction. In all cases of lentigines there was an increase in the density of dermal papillae surrounded by a bright monomorphic layer of cells. Distinct patterns were noted, as these papillae assumed irregular geometric shapes or formed papillary projections with a rim of bright, highly refractile, monomorphic, and cytologically benign-appearing cells. These findings were absent in all of the melanomas studied. Lentigines had an absence of atypical melanocytes, whereas the melanomas had bright, atypical, polymorphous cells present in a pagetoid pattern with coarse, branching dendrites observed throughout the epidermis.

**LIMITATIONS:** This is a descriptive pilot study involving a limited number of patients.

**CONCLUSION:** Unique CSLM characteristics of lentigines were found that have not been previously described, facilitating rapid in vivo discrimination from malignant melanoma. This descriptive study

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supports the further examination of CSLM features of lentigines to aid in the diagnosis of melanoma and discrimination from benign lesions.