

## Medical &gt; In Vivo &gt; Melanoma &amp; Pigmented Lesion Research

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**Histopathologic and Immunohistochemical Correlates of Confocal Descriptors in Pigmented Facial Macules on Photodamaged Skin.**

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**ABSTRACT**

**Importance:** Pigmented facial macules on photodamaged skin are a clinical, dermoscopic, and histopathologic challenge. **Objectives:** To clinically and dermoscopically characterize, by means of reflectance confocal microscopy (RCM), ambiguous pigmented facial macules and establish a correlation between RCM, histopathologic, and immunohistochemical findings. **Design, Setting, and Participants:** A prospective study of ambiguous pigmented facial macules on photodamaged skin was conducted in a tertiary referral center for dermatology between January 1, 2009, and December 31, 2015. Sixty-one patients with 63 ambiguous pigmented facial macules and 12 control photodamaged facial areas were included in the study. Melanocyte density in 1-mm basal layers was determined in skin biopsy specimens from all lesions stained with hematoxylin-eosin and immunohistochemical markers (melan-A, microphthalmia-associated transcription factor, and SRY-related HMG-box gene 10). Dermoscopic, RCM images, and histopathologic preparations were systematically evaluated for the presence of lentigo maligna (LM) criteria. Confocal evaluation was blinded to clinical and dermoscopic diagnosis. Sensitivity and specificity of RCM for LM diagnosis and  $\kappa$  value to establish correlations between dermoscopy, RCM, and histopathology were performed. **Main Outcomes and Measures:** Sensitivity and specificity of RCM for LM diagnosis. **Results:** Of the 61 patients included in the study, 31 (51%) were women; mean (SD) age was 71.8 (13.1) years. Twenty-four of the 63 (38%) lesions were diagnosed as LM or LM melanoma (LMM) and 39 (62%) as benign pigmented lesions. Reflectance confocal microscopy enhanced the diagnosis of pigmented facial macules with 91.7% sensitivity and 86.8% specificity. Multivariate analysis showed 2 dermoscopic and 2 confocal features associated with LM or LMM: (1) asymmetric follicular pigmentation and targetlike structures, and (2) round, large pagetoid cells and follicular localization of atypical cells, respectively. Continuous proliferation of atypical melanocytes was found in 21 (88%) LM or LMM and in 3 (77%) benign lesions. Asymmetric pigmented follicular openings by dermoscopy correlated with follicular localization of pagetoid cells by RCM ( $P=0.499$ ,  $P<0.001$ ). The presence of 3 or more atypical cells at the dermal-epidermal junction (DEJ) by RCM correlated with hyperplasia of melanocytes in hematoxylin-eosin sections ( $P=0.422$ ,  $P<0.001$ ). **Conclusions and Relevance:** Reflectance confocal microscopy improves LM diagnosis in photodamaged skin with good histopathologic correlation although false-positive and false-negative cases exist. False-positives obtained with RCM in photodamaged skin are due to the presence of basal melanocyte hyperplasia and intraepidermal Langerhans cells. Histopathologic features of these lesions sometimes are not enough for a definite diagnosis and immunohistochemical studies may be required. PMID:28564685 DOI:10.1001/jamadermatol.2017.1323