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### Concordance of handheld reflectance confocal microscopy (RCM) with histopathology in the diagnosis of lentigo maligna (LM): A prospective study.

Menge TD, Hibler BP, Cordova MA, Nehal KS, Rossi AM, *J Am Acad Dermatol.* 2016 Jan 26. pii: S0190-9622(15)02626-2. doi: 10.1016/j.jaad.2015.12.045.

#### ABSTRACT

**BACKGROUND:** Reflectance confocal microscopy (RCM) provides real-time noninvasive imaging of cell structure and may be useful in diagnosing lentigo maligna (LM). Few studies have compared performance of RCM with histopathology in diagnosing LM, and specific features influencing RCM interpretation are not well described. **OBJECTIVE:** We sought to determine concordance rate between RCM and histopathology in the evaluation of suspected LM and to identify factors that may obscure diagnosis. **METHODS:** We designed a prospective study involving 17 participants seen for evaluation at a large tertiary referral center. Cases included primary lesions and possible recurrent and/or previously treated lesions. A total of 63 clinically equivocal sites were assessed by RCM and histopathology. **RESULTS:** RCM and histopathology interpretations were concordant in 56 of 63 sites (89%). There were no false-negative and 7 false-positive results using RCM (sensitivity 100%, specificity 71%, positive predictive value 85%, negative predictive value 100%). Features suggestive of LM in the false-positive group included the presence of numerous hyperreflectile large cells at the dermoepidermal junction and follicular localization of these cells. **LIMITATIONS:** A larger test set is needed to more reliably distinguish LM from benign lesions using RCM and to improve specificity. **CONCLUSION:** RCM shows excellent sensitivity for detecting LM although features of benign macules on a background of actinically damaged skin can obscure diagnosis and limit its specificity. Copyright © 2015 American Academy of Dermatology, Inc. Published by Elsevier Inc. All rights reserved. **KEYWORDS:** confocal laser scanning microscopy; diagnosis; histopathology; lentigo maligna; melanoma; nevi; pigmented lesions; reflectance confocal microscopy