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**Langerhans cells and melanocytes share similar morphologic features under in vivo reflectance confocal microscopy: a challenge for melanoma diagnosis.**

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**ABSTRACT**

BACKGROUND: Intraepidermal Langerhans cells (ILC) are difficult to differentiate from melanocytes under reflectance confocal microscopy (RCM) and their presence may simulate pagetoid spread of melanocytes on RCM images. OBJECTIVE: We sought to correlate bright round and dendritic cells in a pagetoid pattern identified on RCM with findings of conventional histopathology and immunohistochemistry for lesions that were falsely diagnosed as melanoma by RCM. METHODS: This retrospective study included histopathologically proven nevi, imaged by RCM, which displayed bright cells in a pagetoid pattern (BCPP) under RCM, resulting in the incorrect RCM diagnosis of melanoma. Morphological comparisons were made between RCM images of nevi showing BCPP, histopathologically proven melanomas displaying BCPP, and biopsy-proven nevi without BCPP. RESULTS: We identified 24 nevi that were falsely diagnosed as melanoma by RCM because of the presence of BCPP. These pagetoid cells on RCM corresponded on histopathology to ILC with a high density in 23 of the 24 nevi (95%) and to melanocytes in 7 of the 24 nevi (29%). Among 6 melanomas displaying BCPP on RCM, ILC with high density were observed histopathologically in 5 of the 6 cases (83%) and pagetoid melanocytes were seen in all 6 cases (100%). LIMITATIONS: The results cannot be generalized to clinically banal-appearing nevi. CONCLUSIONS: Although the finding of BCPP is a useful RCM feature for the diagnosis of melanoma, it does not always imply the presence of pagetoid melanocytes but may at times represent ILC. Copyright © 2011 American Academy of Dermatology, Inc. Published by Mosby, Inc. All rights reserved. PMID:21798622 PMCID:PMC3264757DOI:10.1016/j.jaad.2011.02.033  Free PMC Article