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Towards an in vivo morphologic classification of melanocytic nevi.

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ABSTRACT

BACKGROUND: Nevi are common benign neoplasms and the main diagnostic entity in the differential diagnosis of melanoma. Reflectance confocal microscopy (RCM), a novel technique for skin imaging at cellular-level magnification, has been shown to be useful for differentiating nevi from melanoma. However, systematic studies of the specific RCM features of nevi are still lacking.

OBJECTIVE: To describe the characteristic RCM features of common melanocytic nevi and to correlate them with histopathology.

METHODS: A total of 180 biopsy-proven nevi were imaged with RCM prior to excision. RCM images were evaluated for the overall nevus pattern and presence of specific RCM criteria. Upon histopathology, nevi were analysed for thickness using adapted Breslow depth and Clark's level grading. **RESULTS:** Observed RCM patterns varied according to anatomic depth of nevi. Junctional nevi were mainly characterized on RCM by a Ringed pattern, indicating a predominantly single cell proliferation of melanocytes; in contrast, the junctional component of compound nevi appeared on RCM as a Meshwork pattern, indicating a predominantly nested-proliferation. In compound nevi, the size of dermal nests was related to the thickness of nevi. Moreover, nevi extending deeper into the dermis were more likely to display a junctional component that extended laterally beyond the dermal component and appeared on RCM as either Ringed or Meshwork pattern. Intradermal nevi showed on RCM, in almost all cases, large clods.

CONCLUSIONS: The possibility for in vivo histopathological classification of nevi may help in attaining a better understanding of the origin of nevi and of nevus-related melanoma risk.