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A comparative dermoscopic and reflectance confocal microscopy study of naevi and melanoma with negative pigment network.

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ABSTRACT

BACKGROUND: Negative pigment network (NPN) is a dermoscopic structure observed more frequently among melanomas than naevi. Precise tissue correlates of NPN are still elusive. **OBJECTIVE:** To describe the reflectance confocal microscopy (RCM) findings underlying NPN in melanocytic neoplasms. **METHODS:** We retrospectively identified all melanocytic neoplasms displaying dermoscopic NPN that were imaged with RCM and subsequently biopsied between 2011 and 2015. Images from study lesions (n = 50) were evaluated for dermoscopic and RCM Criteria. Histopathological correlational study was performed in a subset of cases (n = 15). **RESULTS:** The study data set consisted of 21 melanomas (42%) and 29 naevi (58%). Melanomas showed more frequently irregularly shaped globules than naevi (62% vs. 28%, P = 0.03); NPN also tended to be more asymmetrically located among melanomas (86%) than naevi (62%), albeit not significant (P = 0.06). Under RCM, we observed three patterns of dermal papillae (DP): (i) 'Dark DP' - whereby DP were devoid of nests and often surrounded by a junctional proliferation as thick-Rings - this pattern was less common among melanomas (n = 10, 48%) than naevi (n = 23, 79%, P = 0.02); (ii) 'Bulging DP' - whereby junctional nests of melanocytes protrude into the DP, often in association with junctional proliferation as Meshwork - with comparable frequency among melanomas (n = 12, 57%) and naevi (n = 23, 79%, P = 0.09) and (iii) 'Expanded DP' - whereby junctional and/or dermal nests filled and expanded the DP, often in association with dermal-epidermal junction (DEJ) Clod pattern - seen more commonly among melanomas (n = 15, 71%) than naevi (n = 6, 21%, P < 0.001). Dermoscopy-RCM correlation and comparison to histopathological findings show that the hypo-pigmented lines of NPN correlate with broadened epidermal retes, which often show overlying surface dells and wedge-shaped hypergranulosis, while the pigmented globules of NPN correlate with a predominantly-junctional of melanocytes along and between the elongated retes. **CONCLUSIONS:** Dermoscopic NPN correlates with three DEJ RCM patterns with differing frequency between naevi and melanomas. © 2019 European Academy of Dermatology and Venereology. PMID:31283045 DOI:10.1111/jdv.15784