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Nodular skin lesions: correlation of reflectance confocal microscopy and optical coherence tomography features.

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ABSTRACT

BACKGROUND: Nodular lesions have common clinical appearance but different prognoses. Differential diagnosis between melanoma (MM), basal cell carcinoma (BCC) and dermal naevus (DN) poses a challenge in clinical practice. Reflectance confocal microscopy (RCM) and optical coherence tomography (OCT) are promising non-invasive imaging techniques, potentially able to decrease redundant biopsies. RCM allows in vivo visualization of skin down to the papillary dermis at almost histological resolution, while OCT, particularly dynamic OCT (D-OCT), provides images deeper within the dermis and reveals the vascular pattern. **OBJECTIVES:** To identify correlating features observed with RCM and OCT associated with the different nodular lesion diagnoses. **METHODS:** We retrospectively assessed 68 nodular lesions (30 MM, 20 BCC and 18 DN) with RCM and subsequently OCT. At the end of the study, evaluations were matched with histopathological diagnosis and statistical analysis was performed. **RESULTS:** In MM, 57% (17/30) evidenced both cerebriform nests at RCM and icicle-shaped structures at OCT, with higher average Breslow index. In 80% of BCCs with basaloid islands at RCM, OCT showed ovoid structures. More than half of DN (56%) showed hyporeflective nests at OCT and either dense nests or dense and sparse nests at RCM. **CONCLUSIONS:** The combined use of RCM and OCT offers a better understanding of the morphological architecture of nodular lesions, correlating RCM parameters with OCT and vice versa, assisting in turn with early differential diagnosis of malignant and benign nodular lesions. The correlation between icicle-shaped structures and cerebriform nests in MM and their association with Breslow index requires future research. © 2019 European Academy of Dermatology and Venereology. PMID: 31520439 DOI: 10.1111/jdv.15953