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Differentiation between Actinic Keratoses and Disseminated Superficial Porokeratoses with Reflectance Confocal Microscopy

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ABSTRACT

BACKGROUND: Clinical differentiation between actinic keratosis (AK) and disseminated superficial actinic porokeratosis (DSAP) may pose a significant challenge, and histological evaluation is often also required for diagnosis. Distinct morphological features can be distinguished upon histopathological examination, but the use of non-invasive tools, such as reflectance confocal microscopy (RCM), may be an eligible alternative for confirmation of diagnosis.

OBJECTIVES: The aim of this study was to determine the relevant RCM criteria for the identification of disseminated superficial actinic porokeratoses (DSAPs) and to define distinguishing criteria for DSAPs compared with actinic keratosis (AKs).

PATIENTS/METHODS: A total of 20 patients with a clinical diagnosis of AK or DSAP were included in this study. All lesions were evaluated by clinical examination, and RCM and one clinically identified lesion was biopsied for histological confirmation.

RESULTS: Cellular and nuclear atypia, inflammation, spongiosis, parakeratosis and changes in epidermal architecture were present in both lesion types (i.e. AKs and DSAPs). However, these features were more pronounced in AKs. Whereas AKs exhibited more disseminated parakeratotic changes, parakeratosis was found focally present on the border of DSAP lesions. Most characteristically, a distinct border corresponding to cornoid lamella in RCM can be identified in DSAPs.

CONCLUSIONS: Distinguishing features of DSAPs, such as cornoid lamella, sharp demarcation of the lesion and focal keratinocyte atypia are easily identifiable using RCM, and correlate well with histopathology. Whilst RCM has previously been used in the evaluation of AKs, it has not yet been used to investigate DSAPs. The findings in this study suggest the feasibility of non-invasive tools, such as RCM for the differentiation of AKs and DSAPs. However, further studies are warranted to assess the sensitivity and specificity of RCM in the diagnosis of DSAP.