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In vivo confocal laser scanning microscopy of hypopigmented macules: a preliminary comparison of confocal images in vitiligo, nevus depigmentosus and postinflammatory hypopigmentation.

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ABSTRACT

The use of confocal laser scanning microscopy (CLSM) may be an eligible alternative for confirmation of the diagnosis of hypopigmented macules. Our purpose was to evaluate CLSM features for non-invasive imaging of vitiligo, nevus depigmentosus and postinflammatory hypopigmentation in vivo. A total of 68 patients with a clinical diagnosis of the aforementioned diseases were included in this study. CLSM was performed on lesional and adjacent normal appearing skin for all patients. In the active and stable phases of vitiligo, CLSM demonstrated a complete loss of melanin in lesional skin in 14 of 25 patients (56.0%) and 16 of 20 patients (80.0%), respectively. In 11 of 25 (44.0%) patients, the amount of melanin in lesional skin decreased in the active phase of vitiligo, but it is noteworthy to know that the melanin was distributed homogeneously in the dermal papillary rings. In four of 20 patients (20.0%), the dermal papillary rings disappeared completely, but some refractile granules and dendrites could be seen in the stable phase of vitiligo, which may indicate the start of vitiligo repigmentation. Although, in 20 of 20 patients (100%) with nevus depigmentosus, the dermal papillary rings lost their integrity and the content of melanin decreased obviously, there must have been melanin in the dermal papillary rings during its development in all patients. Simultaneously, the melanin was distributed heterogeneously in the dermal papillary rings. The content of melanin and dermal papillary rings in postinflammatory hypopigmentation probably depend on the depth and site of the inflammation; moreover, melanophages were observed in postinflammatory hypopigmentation but did not exist in vitiligo and nevus depigmentosus. In addition, the content of melanin and dermal papillary rings in adjacent normal appearing skin showed changes in the active phase of vitiligo but showed no changes in any of the patients in the stable phases of vitiligo, nevus depigmentosus and postinflammatory hypopigmentation. Differences based on CLSM in the aforementioned diseases were the content of melanin and its distribution pattern. CLSM may be useful to discriminate vitiligo, postinflammatory hypopigmentation and nevus depigmentosus in a non-invasive fashion.