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**In vivo reflectance confocal microscopy detects pigmentary changes in melasma at a cellular level resolution.**

*Kang HY, Bahadoran P, Suzuki I, Zugaj D, Khemis A, Passeron T, Andres P, Ortonne JP; Exp Dermatol. 2010 Aug;19(8):e228-33. doi: 10.1111/j.1600-0625.2009.01057.x.*

### **ABSTRACT**

Melasma is a frequent pigmentary disorder caused by abnormal melanin deposits in the skin. In vivo reflectance confocal microscopy (RCM) is a repetitive imaging tool that provides real-time images of the skin at nearly histological resolution. As melanin is the strongest endogenous contrast in human skin, pigmentary disorders are the most suitable candidates for RCM examination but RCM features of melasma have never been reported. This study investigates the pilot use of RCM in melasma to provide a set of well-described morphological criteria with histological correlations. RCM images were acquired from melasma skin and compared to adjacent control skin in 26 patients. Skin biopsies were obtained from eight patients. In the epidermis, RCM showed in all patients a significant increase in hyperrefractile cobblestoning cells. These cells corresponded to hyperpigmented basal keratinocytes in histology. In six patients, dendritic cells corresponding to activated melanocytes were also found in the epidermis. In the dermis, RCM identified in nine patients plump bright cells corresponding to melanophages. Interestingly, for a given patient, the topographic distribution of melanophages in melasma lesions was very heterogeneous. RCM also showed a significant increase in solar elastosis and blood vessels in the dermis. RCM is a non-invasive technique that detects pigmentary changes in melasma at a cellular level resolution. Therefore, RCM provides an innovative way to classify melasma by pigment changes.