

Medical > In Vivo > Melanoma & Pigmented Lesion Research

242 | Morphologic Features of Melanocytes, Pigmented Keratinocytes, and Melanophages by In Vivo Confocal Scanning Laser Microscopy

Busam KJ, Charles C, Lee G, Halpern AC.; Mod Pathol. Sep 2001; 14(9):862-68.

ABSTRACT

Confocal scanning laser microscopy (CSLM) represents a novel imaging technique for in vivo microscopic analysis of skin lesions at a level of resolution that allows morphologic analysis of microanatomic structures. We investigated the feasibility of recognizing the cellular constituents of pigmented skin lesions, such as pigmented keratinocytes, melanocytes, and melanophages, by CSLM. Fifteen pigmented lesions (five pigmented seborrheic keratoses, and 10 compound melanocytic nevi) from 15 patients were studied, as well as normal skin. After the clinical lesions were imaged by CSLM, they were biopsied or excised for examination by conventional histology for comparison of the morphologic features. In images obtained by CSLM, pigmented keratinocytes were seen as polygonal cohesive cells with variably bright granular cytoplasm. Melanocytes appeared as bright round, oval, fusiform, or dendritic cells. The architectural growth pattern of melanocytes could be analyzed. Melanocytes were identified by their nested growth pattern as aggregates of bright round to oval structures at the dermoepidermal junction or in the superficial dermis. Melanocytes were also recognizable as single cells along the dermoepidermal junction, usually separated from each other by a variable number of keratinocytes. Melanophages appeared as large bright plump cells with ill-defined cytoplasmic borders, usually located around or near vessels of the superficial dermis. Our results demonstrate that the cellular constituents of pigmented lesions can be recognized by CSLM. This technique sets a new paradigm for noninvasive quasihistologic examination of pigmented lesions in vivo and merits further evaluation for diagnostic use.