

Medical > In Vivo > Melanoma & Pigmented Lesion Research

200 In vivo confocal laser scanning microscopy in the diagnosis of melanocytic skin tumours

Gerger A, Hofmann-Wellenhof R, Samonigg H, Smolle J.; Journal Compilation _ 2009 British Association of Dermatologists: British Journal of Dermatology 2009. DOI 10.1111/j.1365-2133.2008.08995.x

ABSTRACT

Melanoma of the skin represents one of the greatest challenges in early or preventive detection. Whereas surgical excision in early stages of melanoma development is almost always curative, delayed recognition puts the patient at risk for destructive growth and death from disease once the tumour has progressed to competence for metastasis. The worldwide introduction of dermoscopy has led to improved diagnostic accuracy for melanocytic skin tumours. Whereas dermoscopy has probably reached the method's inherent potential diagnostic accuracy because of the lack of cellular level evaluation, further improvements could be expected by in vivo confocal laser scanning microscopy. In vivo confocal microscopy represents a novel imaging tool that allows the noninvasive examination of skin cancer morphology in real time at a 'quasi-histopathological' resolution viewing micro anatomical structures and individual cells. Numerous morphological confocal features of melanocytic skin tumours have been described and histopathological correlates of confocal structures have been previously elucidated. Recently, several studies have evaluated the diagnostic accuracy of in vivo confocal microscopy for melanocytic skin tumours, investigating approximately 50 000 tumour images. Remarkably, sensitivity superior to the diagnostic accuracy achieved with dermoscopy could be reached by this imaging modality. These studies represent a significant contribution to the body of research necessary for the evaluation and implementation of in vivo confocal microscopy in clinical practice to avoid many currently unnecessary biopsies. In vivo confocal microscopy probably augurs a sea change in the way we evaluate melanocytic skin tumours in the future and will ultimately move the art of histological diagnosis closer to the bedside.