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Identification of ex-vivo confocal laser scanning microscopic features of melanocytic lesions and their histological correlates..

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ABSTRACT

Ex-vivo confocal laser scanning microscopy (CLSM) offers rapid tissue examination. Current literature shows promising results in the evaluation of non-melanoma skin cancer but little is known about presentation of melanocytic lesions (ML). This study evaluates ML with ex-vivo CLSM in comparison to histology and offers an overview of ex-vivo CLSM characteristics. 31 ML were stained with acridine orange or fluorescein and examined using ex-vivo CLSM (Vivascope2500® ; Lucid Inc; Rochester NY) in reflectance and fluorescence mode. Confocal images were correlated to histopathology. Benign and malignant features of the ML were listed and results were presented. Sensitivity and specificity were calculated using contingency tables. The ML included junctional, compound, dermal, Spitz and dysplastic nevi, as well as various melanoma subtypes. The correlation of the confocal findings with histopathology allowed the identification of different types of ML and differentiation of benign and malignant features. The study offers an overview of confocal characteristics of ML in comparison to histology. Ex-vivo CLSM does not reproduce the typical in-vivo horizontal mosaics but rather reflects the vertical histological presentation. Not all typical in-vivo patterns are detectable here. These findings may help to evaluate the ex-vivo CLSM as an adjunctive tool in the immediate intraoperative diagnosis of ML. Superficial spreading malignant melanoma. Histopathology (H&E stain; 200×) correlated to the reflectance (RM; 830 nm) and fluorescence mode (FM; 488 nm) in the ex-vivo CLSM (Vivablock® by VivaScan® , acridine orange).