Ex vivo confocal microscopy features of cutaneous squamous cell carcinoma.


ABSTRACT
BACKGROUND: Rapid microscopic evaluation of cutaneous squamous cell carcinoma (SCC), its grade of differentiation and level of invasiveness would enable better management of patients' therapy. OBJECTIVES: Analyzing specific ex vivo confocal microscopy criteria whether they can predict diagnosis of invasive SCC vs carcinoma in situ and poorly differentiated or undifferentiated vs well and moderately differentiated SCC. METHODS: Ex vivo confocal images of 102 SCCs in 57 patients were evaluated immediately after excision for the presence of predefined criteria based on confocal and histological knowledge. RESULTS: In histopathological examination, 30 SCCs were in situ and 72 invasive. Of these, 29 invasive SCC tumors were well, 19 moderately, 15 poorly differentiated and 9 undifferentiated. ?2 analysis demonstrated that presence of erosion/ulceration, plump bright or speckled cells in dermis, keratin pearls and peritumoral inflammatory infiltrate correlated with diagnosis of invasive SCC. Erosion/ulceration and peritumoral inflammatory infiltrate were observed more frequently in poorly differentiated or undifferentiated tumors. Plump bright or speckled cells in the dermis were observed less often in well-differentiated tumors. The presence of keratin pearls was associated with well or moderately differentiated tumors. CONCLUSION: Ex vivo CLSM allowed rapid examination of SCC and provided useful information on invasiveness and grading of the tumor. © 2017 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim. KEYWORDS: Mohs surgery; carcinoma in situ; diagnostics in dermatology; fluorescence confocal microscopy; invasive squamous cell carcinoma; rapid pathology; skin surgery; skin tumors PMID: 29227042 DOI: 10.1002/jbio.201700318