Simple 3-criteria-based ex vivo confocal diagnosis of basal cell carcinoma.


ABSTRACT
BACKGROUND: Fast and simple microscopic evaluation of basal cell carcinoma (BCC) together with its subtype determination would accelerate diagnostic and therapeutic procedures in dermatology including Mohs surgery. OBJECTIVES: Assessing whether simplified 3-criteria-based ex vivo confocal microscopic (CM) examination can reliably predict BCC diagnosis and subtype. Analyzing interobserver agreement between expert and novice examiner. METHODS: CM images of 235 skin samples from 150 patients were prospectively evaluated by 2 blinded examiners for the presence of 3 predefined BCC criteria namely presence of tumor mass, peripheral palisading and clefting. RESULTS: Out of 235 skin samples 116 showed histological presence of BCC, confocally expert diagnosed a BCC in 110 and novice examiner in 107 samples. The overall sensitivity and specificity of detecting residual BCC was 96.6% and 98.7%, respectively. Confocally, examiners diagnosed correctly nodular BCC in 96.6%, respectively, 98.3%, superficial BCC in 96.8%, respectively, 93.5%, infiltrating BCC in 88.9%, respectively, 83.3% and other BCC subtype in 22.2%, respectively, 0% (expert and novice examiner, respectively). CONCLUSION: Ex vivo CM allowed intraoperative examination of BCC based on only 3-criteria with high sensitivity and specificity, provided useful information on tumor subtype and showed that both experienced and non-experienced examiners may use this diagnostic approach with excellent results. © 2018 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim. KEYWORDS: Mohs surgery; diagnostics in dermatology; fluorescence confocal microscopy; infiltrating basal cell carcinoma; nodular basal cell carcinoma; rapid pathology; skin surgery; skin tumors; superficial basal cell carcinoma. PMID: 29726112 DOI: 10.1002/jbio.201800062