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Fast evaluation of 69 basal cell carcinomas with ex vivo fluorescence confocal microscopy: criteria description, histopathological correlation, and interobserver agreement.

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ABSTRACT

IMPORTANCE:Fluorescence confocal microscopy (FCM) represents a first step toward a rapid "bedside pathology" in the Mohs surgery setting and in other fields of general pathology. **OBJECTIVE:**To describe and validate FCM criteria for the main basal cell carcinoma (BCC) subtypes and to demonstrate the overall agreement with classic pathologic analysis of hematoxylin-eosin-stained samples. **DESIGN** A total of 69 BCCs from 66 patients were prospectively imaged using ex vivo FCM. Confocal mosaics were evaluated in real time and compared with classic pathologic analysis. **SETTING:**Department of Dermatology, Hospital Clínic of Barcelona, Barcelona, Spain, between November 2010 and July 2011. **PARTICIPANTS:**Patients with BCC attending the Mohs Surgery Unit. **MAIN OUTCOMES AND MEASURES:**Presence or absence of BCC and histological subtype (superficial, nodular, and infiltrating) in the confocal mosaics. Eight criteria for BCC were described, evaluated, and validated. **RESULTS:**Although there were minor differences among BCC subtypes, the most BCC-defining criteria were peripheral palisading, clefting, nuclear pleomorphism, and presence of stroma. These criteria were validated with independent observers (? values >0.7 [corrected] for most criteria). **CONCLUSIONS AND RELEVANCE:**We herein propose, describe, and validate FCM criteria for BCC diagnosis. Fluorescence confocal microscopy is an attractive alternative to histopathologic analysis of frozen sections during Mohs surgery because large areas of freshly excised tissue can be assessed in real time without the need for tissue processing while minimizing labor and costs.
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