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47 Confocal Examination of Untreated Fresh Specimens From Basal Cell Carcinoma

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ABSTRACT

OBJECTIVE: To evaluate the diagnostic accuracy of confocal examination of basal cell carcinoma (BCC) in microscopy-guided surgery.

DESIGN: Four independent observers with no previous experience in confocal laser scanning (CLS) microscopy received standardized instruction about diagnostic CLS microscopic features. Subsequently, 120 confocal images of fresh excisions from BCCs or normal skin were evaluated by each observer, imaged using a commercially available, near-infrared, reflectance CLS microscope. Logistic regression analysis was performed on a combination of all morphologic features using the forward-stepwise (Wald) method. Reliability (interobserver agreement) data were evaluated by kappa statistic.

SETTING: Department of Dermatology, Medical University of Graz.

PATIENTS: Twenty patients with histologically verified BCC.

INTERVENTIONS: Evaluation of fresh BCC excisions by CLS microscopy.

MAIN OUTCOME MEASURES: Diagnostic accuracy of the method was evaluated by chi2 test. Diagnostic impact and reliability of each morphologic feature were evaluated by logistic regression analysis and kappa statistic, respectively.

RESULTS: Overall, high diagnostic accuracy was achieved by the 4 observers. Logistic regression analysis revealed that mainly tumor cell nuclei and tumor nests should be taken into account for diagnostic decisions, whereas disintegration of tumor cells, peripheral palisading, and retraction of stroma were rarely useful. However, most of the features were highly reliable.



CONCLUSIONS: This diagnostic validation study of CLS microscopy in microscopy-guided surgery yielded promising results and opens avenues for further studies. In the future, CLS microscopy may guide microsurgery of any skin cancer.