**ABSTRACT**

**BACKGROUND:** Near-infrared reflectance-mode confocal scanning laser microscopy (RCM) represents a novel imaging technique for microscopic analysis of skin lesions and may provide a noninvasive modality for the diagnosis of basal cell carcinoma (BCC).

**OBJECTIVE:** To determine the feasibility of detecting residual or clinically equivocal BCC using RCM.

**METHODS:** In this pilot study, RCM was used in three cases to characterize the histologic features of index lesions in vivo. These were subsequently correlated with corresponding hematoxylin-eosin-stained sections obtained during Mohs micrographic surgery.

**RESULTS:** Evaluation of clinically equivocal lesions by RCM revealed features characteristic of BCC, including tightly packed nests of elongated, monomorphic, polarized nuclei and subjacent ectatic blood vessels with lymphocytes undergoing margination and rolling. Conventional histology confirmed the presence of BCC in all cases.

**CONCLUSION:** We report the use of RCM in the confirmation of residual BCC in two cases and the tentative diagnosis with subsequent pathologic conformation of a third case in which a biopsy was previously inadequate. Our results demonstrate that confocal microscopy may facilitate diagnosis of BCC in vivo and warrant further prospective study to quantify the sensitivity and specificity of this rapidly evolving imaging modality.