ABSTRACT

BACKGROUND: The characteristic vascular patterns of nonpigmented skin tumors have been established by dermoscopy. Recently, in vivo reflectance confocal microscopy (RCM) has become an established method for the noninvasive examination of skin tumors. **OBJECTIVES:** Determination of the value of RCM on the vascularity of nonpigmented skin tumors. **METHODS:** One hundred and twenty two tumoral lesions have been evaluated by RCM in terms of their vascular structures. They were classified in five groups as basal cell carcinoma (BCC), seborrheic keratosis (SK), squamous cell carcinoma (SCC)/keratoacanthoma, actinic keratosis (AK)/Bowen disease and others. Vascular morphologies were investigated as curved linear, straight linear, branching, tubular/canaliclar, round and polymorphic vessels in six types. **LIMITATIONS:** Relatively, small number of patients with some tumor subgroups is limitation. Larger prospective studies are required before firm conclusions can be drawn. **RESULTS:** Excellent compliance was obtained in interobserver analysis. Branching vessels had a high predictive value for basal cell carcinoma (BCC) with RCM (P < 0.001). Also vascular polymorphism was more frequently (69.4%) seen in malignant nonpigmented tumors (P < 0.05) than benign nonpigmented tumors (30.6%). Furthermore, vessels with opposite flows had high predictive value for malignant tumors (P < 0.05) compared with benign tumors. **CONCLUSION:** Vascular properties can be evaluated in the diagnosis of nonpigmented tumoral skin lesions via RCM.