Presurgical evaluation of basal cell carcinoma using combined reflectance confocal microscopy-optical coherence tomography: A prospective study.


ABSTRACT
BACKGROUND: Initial biopsy of basal cell carcinoma (BCC) may fail to show aggressive histologic subtypes. Additionality, the clinical evaluation of BCC before surgery can miss subclinical extension. Reflectance confocal microscopy (RCM) and optical coherence tomography (OCT) are emerging tools that can help in the presurgical evaluation of BCCs. OBJECTIVE: To assess the feasibility of a combined RCM-OCT imaging modality for presurgical evaluation of biopsy-proven BCCs for residual tumor, margin status, and depth. METHODS: Thirty-eight BCCs in 35 patients referred to a tertiary cancer center for Mohs micrographic surgery (MMS) were imaged with combined RCM-OCT. Images were correlated to MMS frozen sections. RESULTS: Thirty-eight BCCs were analyzed. The mean age of patients was 67.34 years (range, 36-84 years), and 20 patients were female (57.14%). Twenty four BCCs were located on the head (63.16%), and the mean size was 8.58 mm (range, 3-30 mm). RCM-OCT showed an overall agreement of 91.1% with MMS frozen sections. A sensitivity of 82.6% (95% confidence interval [CI], 69%-92%), specificity of 93.8% (95% CI, 88%-97%), and receiver operating characteristic curve of 0.88 (95% CI, 0.82-0.94) was found. OCT depth was highly correlated with MMS depth ($r^2 = 0.9$). LIMITATIONS: Small sample size and difficulty evaluating certain challenging anatomic sites. CONCLUSIONS: Combined RCM-OCT may emerge as a useful tool for presurgical evaluation of BCCs.