Peritumoral clefting in basal cell carcinoma: correlation of in vivo reflectance confocal microscopy and routine histology.


ABSTRACT

BACKGROUND: Histopathologically, basal cell carcinoma (BCC) is characterized by basaloid tumor nodules of varying size showing peripheral palisading of cells and nuclei, and separation from surrounding stroma by optically empty appearing clefts. These are usually regarded as an artifact, occurring during routine tissue processing. Recently, reflectance confocal microscopy (RCM) has been applied for noninvasive, in vivo evaluation of BCC. Besides other features, small areas of low refractility separating tumor islands from the surrounding tissue can be observed in vivo, suggesting that the presence of amorphous material like mucin might be the causal factor for these clefts.

METHODS: A total of 13 BCCs were studied by RCM and histopathological techniques. Staining was performed with Alcian blue for the detection of peritumoral mucin. Correlation between RCM images and histopathological samples was studied, and the diameter of hyporefractile areas on RCM as well as the thickness of peritumoral mucin was measured.

RESULTS: Good correlation was seen between dark areas on RCM and thickness of peritumoral mucin with a mean diameter of 14 µm (RCM) and 11.44 µm (histopathology), respectively. Pearson correlation coefficient was 0.605 (p < 0.0001).

CONCLUSIONS: Our results show that the peritumoral cleft-like spaces seen in BCC on histopathology exist in vivo, and correspond to the peritumoral mucin deposition.