Analysis of debrided and non-debrided invasive squamous cell carcinoma skin lesions by in vivo reflectance confocal microscopy before and after therapy.


ABSTRACT
Hyperkeratosis hinders the application of reflectance confocal microscopy (RCM) to image squamous cell carcinoma (SCC). Not all lesions with SCC show hyperkeratosis, and these lesions can be directly imaged. However, lesions with hyperkeratosis can be treated by debriding the hyperkeratotic surface for further imaging. RCM was used to investigate patients with suspected SCC. Lesions without obvious keratosis underwent direct RCM examinations. Lesions with obvious keratosis were treated by debriding the hyperkeratotic surface. The following main RCM criteria were used to diagnose invasive SCC: atypical keratinocytes arranged in nests, islands, and disarrangement patterns; an atypical honeycomb pattern; the absence of a cobblestone pattern; and non-edged dermal papillae. Other characteristics of invasive SCC observed by confocal microscopy included keratin pearl structures, hyperkeratosis, and inflammatory cell infiltration. During the follow-up period after treatment, both the cobblestone pattern and edged dermal papillae were as important as the typical honeycomb pattern in suggesting a normal skin structure. Our findings indicate RCM is a valuable tool to noninvasively examine the histology of invasive SCC before and after therapy. KEYWORDS: Cobblestone pattern; Dermal papillae; Honeycomb pattern; Reflectance confocal microscopy; Squamous cell carcinoma PMID:27837338 DOI:10.1007/s10103-016-2104-7