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Reflectance confocal microscopy may differentiate acute allergic and irritant contact dermatitis in vivo.

Swindells K, Burnett N, Rius-Diaz F, González E, Mihm MC, González S.; J Am Acad Dermatol. 2004 Feb;50(2):220-8.

ABSTRACT

BACKGROUND: Acute irritant contact dermatitis (ICD) and allergic contact dermatitis (ACD) may be difficult to distinguish by clinical or histologic assessment. Reflectance confocal microscopy (RCM) enables real-time, high-resolution skin imaging in vivo.

OBJECTIVE: We sought to image, characterize, and distinguish acute ACD and ICD in vivo.

METHODS: Volunteers with ACD were patch tested with an allergen and the irritant, sodium lauryl sulfate. RCM imaging and transepidermal water loss measurements were performed at 24 and 72 hours. Biopsy specimens were correlated with RCM images.

RESULTS: Spongiosis, epidermal inflammatory cell infiltrate, and vesicle formation were observed in ACD and ICD. Compared with ACD, ICD showed greater disruption of the stratum corneum, and more parakeratosis. There was a significantly greater increase in transepidermal water loss for ICD compared with ACD.

CONCLUSION: RCM is a promising tool for dynamic, noninvasive assessment and may help to differentiate acute ACD and sodium lauryl sulfate-induced ICD.