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Pilot study on reflectance confocal microscopy imaging of lichen planus: a real-time, non-invasive aid for clinical diagnosis.

Moscarella E, González S, Agozzino M, Sánchez-Mateos JL, Panetta C, Contaldo M, Ardigò M.; J Eur Acad Dermatol Venereol. 2012 Oct;26(10):1258-1265. doi: 10.1111/j.1468-3083.2011.04279.x.

ABSTRACT

Background: Lichen planus (LP) represents a relatively common skin inflammatory entity included in the major group of interface dermatitis. In recent years, reflectance confocal microscopy has demonstrated to be a valuable tool for the 'in vivo' characterization of various skin diseases with cellular level resolution. No data are currently available that uses reflectance confocal microscopy to study LP.

Observations: In this study, we have investigated the clinical and confocal features of five cases of histopathologically proven LP, and we have correlated the observed features with histopathological findings. The most characteristic criterion was the presence of interface dermatitis. Papillary rims, usually visible in normal skin, were obscured by the presence of a diffuse inflammatory cells infiltrate, arranged in sheet-like structures that surrounded the junction almost completely. There was an almost total obliteration of the ring-like structures around DP, which appeared non-edged and non-rimmed. Granular cells appeared as very large, polygonal structures, with an evident grainy cytoplasm, with the transition between spinous and granular cells being clearly recognizable, and this feature corresponded to hypergranulosis in histology. The presence of inflammatory cells at the level of the epidermis was seen as round-to-polygonal bright structures in the context of a variable degree of epidermal disarray and spongiosis. Melanophages in dermis were visible as brightly refractile, plump, oval to stellate-shaped cells. Prominent round or linear dark canalicular structures corresponded to dilated blood vessels in the superficial dermis on histopathology and appeared horizontally oriented in confocal sections.

Conclusions: Reflectance confocal microscopy may represent a real-time, non-invasive aid to clinical diagnosis of LP. However, it might be difficult to distinguish between different subtypes of interface dermatitis. Further research, including larger case series, will better define a possible differential diagnosis of these diseases using confocal microscopy.