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In vivo confocal laser scanning microscopy for non-invasive diagnosis of pemphigus foliaceus.

Angelova-Fischer I, Pfeuti T, Zillikens D, Rose C.; Skin Res Technol. 2009 Feb;15(1):40-4.

ABSTRACT

BACKGROUND/PURPOSE: In vivo confocal laser scanning microscopy (CLSM) is a modern non-invasive method for investigation of the skin that allows real-time visualization of individual cells and sub-cellular structures at resolution similar to the one provided by routine histopathology. Our aim was to investigate the potential of CLSM for non-invasive diagnosis of pemphigus foliaceus (PF).

METHODS: Pre-existing and mechanically induced lesions in two cases of PF were examined by means of CLSM, parallel to routine histology, direct immunofluorescence microscopy and enzyme-linked immunosorbent assay performed in the same patients.

RESULTS: The morphological features characteristic for PF, namely an intraepidermal blister with acantholytic cells in the blister cavity, were readily detectable by means of CLSM. The findings were consistent in both patients and across the investigated lesions. The confocal images were consistent with the routine histology of the pre-existing lesions. No differences in the confocal images of pre-existing lesions compared with mechanically induced ones were observed.

CONCLUSIONS: Our findings suggest the potential of CLSM as a non-invasive tool for the diagnosis of pemphigus and differentiation of its subtype. Although at present the method cannot replace the current diagnostic standards for pemphigus, it may be successfully used as in vivo non-invasive screening tool to facilitate the diagnosis and point to the need for further investigation of the patient.