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Immunofluorescence and histopathological assessment using ex vivo confocal laser scanning microscopy in lichen planus

I??n Sinem Ba?c?, Rui Aoki, Sebastian Krammer, Gabriela Vladimirova, Thomas Ruzicka, Miklós Sárdy, Lars E French, Daniela Hartmann. *J Biophotonics*. 2020 Dec;13(12):e202000328. doi: 10.1002/jbio.202000328. Epub 2020 Oct 26.

ABSTRACT

Ex vivo confocal laser scanning microscopy (CLSM) provides rapid, high-resolution imaging, fluorescence detection and digital haematoxylin-eosin (H&E)-like staining. We aimed to assess the performance of ex vivo CLSM in identifying histomorphology and immunoreactivity in lichen planus (LP) and comparing its accuracy with conventional histopathology and direct immunofluorescence (DIF). Thirty-three sections of 17 LP patients stained with acridine orange (AO) and FITC-labelled anti-fibrinogen antibody and 21 control samples stained with AO were examined using ex vivo CLSM. Ex vivo CLSM was in perfect agreement with conventional histopathology in identifying interface dermatitis, vacuolar degeneration and band-like infiltration. ROC analysis showed that the presence of vacuolar degeneration, interface dermatitis and band-like infiltration was useful to distinguish LP sections from controls ($p < .0001$). The detection rates of fibrinogen deposition using DIF and in conclusion ex vivo CLSM were 93.8% and 62.5%, respectively. ex vivo CLSM enables histopathological and immunofluorescence examination in LP with the advantage of digital H&E-like staining. Keywords: diagnostics; direct immunofluorescence microscopy; fluorescence; lichen planus. © 2020 Wiley-VCH GmbH.
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