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Simultaneous immunofluorescence and histology in pemphigus vulgaris using ex vivo confocal laser scanning microscopy

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ABSTRACT

Ex vivo confocal laser scanning microscopy (ex vivo CLSM) provides rapid, high-resolution imaging and immunofluorescence examinations of the excised tissues. We aimed to evaluate the applicability of ex vivo CLSM in histomorphological and direct immunofluorescence (DIF) examination of pemphigus vulgaris (PV). 20 PV sections were stained with fluorescent-labeled anti-IgG and anti-C3 using various dilutions and incubation periods. Subsequently, the determined ideal staining protocol was applied on 20 additional PV and 20 control sections. Ex vivo CLSM identified intraepidermal blisters and acantholytic cells in 80% and 60% of PV patients, respectively. The sensitivity of ex vivo CLSM in detecting intraepidermal fluorescence was 90% both with IgG and C3. The specificity of staining for IgG and C3 was 70% and 90%, respectively. Histomorphological and immunofluorescence features of PV could be detected within the same ex vivo CSLM session showing a comparable performance to conventional histopathology and DIF microscopy. Keywords: diagnostics; direct immunofluorescence microscopy; ex vivo confocal microscopy; fluorescence; histology; pemphigus vulgaris. © 2021 Wiley-VCH GmbH. PMID: 33491324 DOI: 10.1002/jbio.202000509