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First identification of the herpes simplex virus by skin-dedicated ex vivo fluorescence confocal microscopy during herpetic skin infections.

Cinotti E, Perrot JL, Labeille B, Campolmi N, Thuret G, Naigeon N, Bourlet T, Pillet S, Cambazard F., Clin Exp Dermatol. 2014 Dec 26. doi: 10.1111/ced.12546.

ABSTRACT

BACKGROUND: Skin-dedicated ex vivo fluorescence confocal microscopy (FCM) has so far been used to identify cutaneous tumours on freshly excised samples using acridine orange as fluorochrome.

AIM: To use FCM for a new indication, namely, the identification of the herpes simplex virus (HSV) in skin lesions, using fluorescent antibodies. **METHODS:** Six roof samples from skin vesicles suspicious for HSV lesions were incubated with anti-HSV-1 and anti-HSV-2 antibodies coupled with fluorescein isothiocyanate, and examined under skin-dedicated ex vivo FCM. The positive controls were swabs taken from the floor of each vesicle and observed under conventional direct fluorescence assay (DFA) and by viral cultures. Roof samples from three bullae of bullous pemphigoid were the negative controls.

RESULTS: Using ex vivo FCM, the samples from the lesions clinically suspicious for HSV infection were seen to be fluorescent after incubation with anti-HSV-1, and were negative after incubation with anti-HSV-2 antibodies. Conventional DFA with an optical microscope and cultures confirmed the presence of HSV-1 infection. **CONCLUSIONS:** By using fluorescent antibodies to identify precise structures, ex vivo FCM can be used for indications other than tumour identification. More specifically, it can be an additional diagnostic tool for HSV infection.