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In vivo dermoscopic and confocal microscopy multistep algorithm to detect in situ melanomas.

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Br J Dermatol. 2018 Jan 21. doi: 10.1111/bjd.16364.

ABSTRACT

BACKGROUND: Although several dermoscopic features of in situ melanoma have been identified, data on confocal features of in situ melanoma are still lacking. **OBJECTIVES:** To identify reflectance confocal microscopy (RCM) features of in situ melanoma and to develop a diagnostic score combining dermoscopy and RCM. **METHODS:** In total, 120 in situ melanoma and 213 nevi (test set) were retrospectively analysed to assess the presence of dermoscopic and RCM criteria. Facial and acral lesions were excluded. Spearman's correlation, univariate and multivariate regression models were used to identify features significantly correlated with in situ melanoma diagnosis. Multivariate results on the test set allowed the development of a multistep algorithm, that was tested on a validation set of 100 lesions. **RESULTS:** The dermoscopic findings of an atypical network and regression were independent predicting factors for in situ melanoma diagnosis [odds ratio (OR) 3.44, 95% CI (confidence interval) 1.70-6.97 and OR 4.17, 95% CI 1.93-9.00, respectively]. Significant confocal predictors for malignancy were epidermal pagetoid spread (OR 2.83, 95% CI 1.32-6.04) and junctional cytological atypia (OR 3.39, 95% CI 1.38-8.30 if focal, OR 8.44, 95% CI 3.21-22.16 if widespread). A multistep diagnostic algorithm able to predict in situ melanoma with a sensitivity of 92.5% and a specificity of 61% was developed. The validation set confirmed the high diagnostic value (sensitivity 92%, specificity 58%). **CONCLUSIONS:** An easy and reproducible multistep algorithm for in situ melanoma detection is suggested, that can be routinely used in tertiary centres. © 2018 British Association of Dermatologists.

PMID: 29355898 DOI: 10.1111/bjd.16364