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Lesions mimicking melanoma at dermoscopy confirmed basal cell carcinoma: evaluation with reflectance confocal microscopy

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Background

Atypical basal cell carcinoma (BCC), characterized by equivocal dermoscopic features typical of malignant melanoma (MM), can be difficult to diagnose. Reflectance confocal microscopy (RCM) enables *in vivo* imaging at nearly histological resolution.

Objectives

To evaluate BCCs mimicking melanoma at dermoscopy according to well-known RCM criteria for typical BCCs, and identify discriminate RCM parameters for superficial (sBCCs) and nonsuperficial BCCs (nsBCCs).

Material and Methods

A retrospective analysis of consecutive patients, evaluated with RCM, selecting excised lesions classified at dermoscopy with ≥ 1 score from the revisited seven-point checklist, mimicking melanoma, registered between 2010 - 2016. Lesions without RCM melanocytic parameters, were investigated by operators blinded to histopathology diagnoses. Cluster analysis identified BCC sub-classifications.

Results

Of 178 atypical lesions, 34 lesions were diagnosed BCC with RCM, and diagnoses were confirmed with histopathology. Dermoscopic features observed atypical network (55.9%), and regression structures (35.5%) associated with sBCCs, and atypical vascular pattern (58.8%) and irregular blotches (58.8%) with nsBCC. Hierarchical cluster analysis identified 2 clusters: cluster 1 (100% sBCCs) was characterized by the presence of cords connected to the epidermis (90%, $p<0.001$), tumor islands located in the epidermis (100%, $p<0.001$), smaller vascular diameter (100%, $p<0.001$) and solar elastosis (90%, $p=0.017$) and cluster 2 (nsBCCs 85%) by the dermic location of tumor islands (87.5%, $p<0.001$) with branch-like structures (70.8%, $p=0.007$) and surrounding collagen (83.3%, $p=0.012$), peripheral palisading (83.3%, $p=0.012$), and coiled vascular morphology (79.2%, $p<0.001$) with larger vascular diameter (50%, $p<0.001$).

Conclusions

RCM is able to diagnose BCCs mimicking melanoma at dermoscopy and seems able to identify sBCCs and nsBCCs. Therefore, the use of RCM may assist in optimizing therapeutic management of these equivocal lesions.