Introduction

There are only 4 previously published dermoscopic images of balloon cell melanoma (BCM) in the literature, 3 of primary tumors and 1 of BCM satellite metastasis. Currently, data are restricted by a low number of reports and a definitive dermoscopic pattern of BCM is still not documented. We suggest some dermoscopic features to correctly diagnose this tumor.

Case Presentation

Recently, an 84-year-old Caucasian woman was referred to our skin cancer unit because of an asymptomatic nodule on the right leg for the preceding 4 months, with no personal or family history of melanoma or nonmelanoma skin cancer. Physical examination showed a well-defined, reddish nodule measuring 1 cm in diameter (Figure 1A).

Dermoscopy revealed yellowish structureless areas, white lines, and irregular, hairpin-shaped and curved vessels (Figure 1B). Due to suspicions of melanoma, an excisional biopsy was performed for histopathological examination.

Hematoxylin and eosin (H&E) staining showed an atypical melanocytic proliferation, with an architecturally disorganized, predominantly intradermal component composed of cells containing hyperchromatic pleomorphic nuclei and a ballooned appearance with vacuolated cytoplasm, mitotic figures, and discrete areas of intradermal pagetoid spread (Figure 2, A and B). No ulceration, lymphovascular and perineural invasion, satellitosis, or regression was noted. Breslow thickness was 4.1 mm with moderate mitotic activity with 4 mitotic figures seen per square millimeter. Immunohistochemical staining showed positive results for melanocytic markers S100 (Figure 2C), HMB45 in the dermal component, and MELAN-A, confirming the diagnosis of BCM. Ki67 staining was positive in balloon cells.

Conclusions

In 2013, the first dermoscopy report described an amelanotic nodule with a structureless yellow lesion, central ulceration, presence of terminal hairs, and curved and dotted vessels in an elderly man with a history of local trauma [1].
In 2014, a satellite metastasis of BCM was described as having a milky red structureless background, yellowish structureless areas, and a few irregular, linear, hairpin-shaped, and curved vessels. As balloon cells generally lack melanin, this study proposed the association of milky red and yellowish structureless areas as a considerable clue for the diagnosis of BCM [2]. We also reported the presence of yellowish structureless areas in our case.

The dermatopathological diagnosis of BCM is reportedly challenging both careful clinical-pathological correlation as well as correctly interpreted immunohistochemical stains. Clinically, BCM could be presented as a nodular, ulcerated, polypoid, or papillomatous lesion with the absence of pigmentation.

Dermoscopic evidence showed numerous aggregated white globular structures, which correspond to nests of pigmented melanocytes in the lower epidermis, papillary, and/or lower dermis in histology. In this case the presence of a recent raised amelanotic nodular lesion with white lines and polymorphous vessels in dermoscopy suggested malignancy, although the diagnosis of BCM was histologically defined.

We therefore suggest focusing on 4 dermoscopic criteria during the assessment of a nodular lesion to rule out BCM: (1) yellowish structureless areas, (2) white lines, (3) irregular hairpin-shaped and (4) curved vessels.

Figure 2. (A) H&E staining (x5) showing the radial phase of the melanoma. (B) H&E staining (x40) with cells containing hyperchromatic pleomorphic nuclei and a ballooned appearance with vacuolated cytoplasm, mitotic figures, and discrete areas of intradermal pagetoid spread. (C) Immunohistochemical staining (x2.5, S100 positive). [Copyright: ©2019 Resende et al.]

References