Dermatology Practical & Conceptual

Hypomelanotyc Basomelanocytic Tumor

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Introduction

Dermoscopic diagnosis of collision tumor (CT) is a challenge. Zaballos et al recently found that the most frequent CTs are: basal cell carcinoma (BCC)-seborrheic keratosis (37.9%), BCC-melanocytic nevus (19.9%), and melanoma-seborrheic keratosis (6.8%).[1] The collision BCC-melanoma is very rare (reported under the terms "basomelanocytic tumor (BMT)") and its dermoscopic features have been described in only few cases [1,3-6].

Case Presentation

A 58-year-old woman presented with an enlarging ulcerated erythematous-brown plaque of 16 x 8 mm on her left leg appeared almost six months before. The clinical diagnosis was ulcerated BCC. Dermoscopy showed an asymmetric polychromatic multicomponent pattern with shiny white structures, structureless blue-grey areas, grayish peppering, milky red areas, atypical vessels, ulceration and crusts (Figure 1, A and B). She denied previous history of skin cancer.

Histopathological examination showed an irregular hyperplastic epidermis and, in the dermis, BerEp4-positive large nests (Figure 1F) composed by basaloid keratinocytes with palisading of cells at the periphery and clefts with the surrounding stroma (Figure 1, C-E and I). Inside some nests and in the dermis was present a second cell population of spindle cells and also dentritic cells that stained positive for Melan-A, S100 and HMB-45 (Figure 1, G and H). An increased number of single atypical melanocytes at the dermoepidermal junction was also observed.

A BMT (BCC and pT2b melanoma of 1mm Breslow thickness; BRAF WT) was diagnosed. Wide surgical excision and lymph node biopsy were performed with no evidence of metastatic cells, also at staging investigations (pT2b N0 M0). After 24-months follow-up the patient is still without evidence of secondary disease.

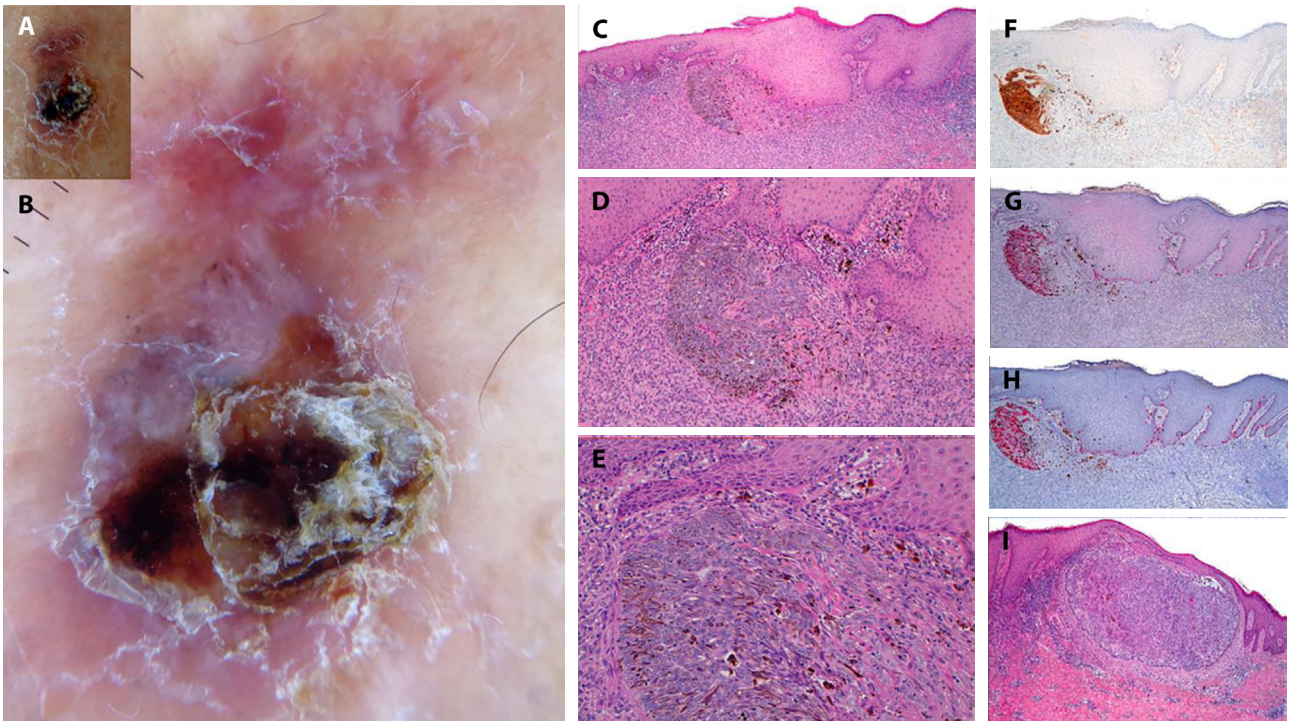

Figure 1. (A) Erythematous violaceous plaque of 16 x 8 mm with erosive surface on the lower limb of atypical morphology and multicolor appearance. (B) Asymmetric polychromatic multicomponent pattern with shiny white structures, structureless blue-gray areas, milky red areas, atypical vessels, ulceration and crusts without clearly pigment network at the periphery. (C) Irregular hyperplastic epidermis and, in the dermis, large nests composed by basaloid keratinocytes with palisading of cells at the periphery, clefts with the surrounding stroma and inflammatory infiltrate of the perilesional area (H&E; original magnification 5x). (D) Irregular hyperplastic epidermis and, in the dermis, large nests of basaloid cells with a second cell population of spindle cells and dentritic cells. Heavy inflammatory infiltrate of the perilesional area (H&E; original magnification 5x). (E). Higher magnification of the basaloid cells, atypical spindle and dentritic cells with mitotic figures (H&E; original magnification 20x). (F) Strong immunoreactivity for BerEp4 evidenced the basal cell carcinoma component (original magnification 5x). (G) Melan-A stained the atypical melanocytes of the melanoma component. An increased number of single atypical melanocytes at the dermoepidermal junction and in the dermis was also observed (original magnification 5x). (H) HMB-45 stained the atypical melanocytes of the melanoma component. An increased number of single atypical melanocytes at the dermoepidermal junction and in the dermis was also observed (original magnification 5x).(I) Large nest of basaloid cells with palisading at the periphery (original magnification 5x).

Conclusions

Histologically, BMT may result by a variety of modality of "collisions" like colonization, combined, biphasic, biphenotypic, or intermingled neoplasms [2].

Pathogenetic explanations are different and refer to: the field cancerization theory (proliferation of two distinct clones resulting in the development of two intermingled neoplasms); the tumor divergent theory (biphasic neoplasm with two neoplastic populations); tumor convergent theory (two phenotypically different cell populations derive from a common progenitor stem cell). BMT has also been considered a low-grade malignancy with a dual phenotype; in fact, the histologic merging between two malignant cell types argues against a simple collision [2,3].

To our knowledge, about 50 cases of BMT have been reported in the literature [1,3-6]; dermoscopy has been described in details in only 9 cases (Table 1). One of the two tumors is usually recognized upon dermoscopy when one of the two component is prevalent, but usually the exact diagnosis of BMT is difficult. Reflectance confocal microscope (RCM) can be highly useful in the diagnosis [4]. Moreover, BMT can occur in patient with basal cell nevus syndrome or xeroderma pigmentosum, therefore an accurate examination of the patients is needed [6]. Our patient presented an ulcerated hypomelanotic BMT, representing a further pitfall.

The biologic behavior of BMT is still not clearly understood. According to Amin et al distant metastases are uncommon and combined cutaneous tumors may have a better prognosis when compared to similarly staged conventional melanomas [2]. In contrast, Erickson et al, reported a 56-year-old man with BMT of the scalp who developed a subsequent metastasis [2].

In conclusion, BMT represent a clinical diagnostic challenge and suspicious lesions should be observed accurately with dermoscopy and also with RCM, when available.

Table 1. Dermoscopic features of the basomelanocytic tumors reported in the literature [1,3-6].

Age/sex	Location	Clinical diagnosis	Collision	Dermoscopy
70-year-old man	face	lentigo maligna melanoma	BCC – lentigo maligna melanoma	Annular granular pattern with rhomboid structures and a dark blotch; large blue-gray ovoid nests with leaf-like structures
69-year-old man	postauricular region	BCC	metastatic melanoma colliding with BCC	Multilobulated bluish nodule with a shiny surface, fine blood vessels and large gray-blue ovoid structures.
70-year-old man	frontoparietal region	Lentigo maligna	BCC- lentigo maligna	A flat brownish asymmetric lesion with an irregular pigmented network, whitish areas, vessels with linear or arciform shapes and a well-defined, darker area showing four colors (blue, black, white/grey, red) and black, bluish rounded structures; scales and an erosive site, as well as numerous vessels with arboriform shape; projections of bulbous shape reminiscent of leaf-like structures.
74-year-old man	head/neck	BCC- lentigo maligna[a]	BCC- lentigo maligna	Pink-white area with arborizing vessels and a pseudo network with asymmetrically pigmented follicular openings.
na	na	lentigo maligna	BCC – lentigo maligna	Pigmented follicles and destroyed follicle with patchy pigmentation; arborizing vessels and pigmented blue-grayish globules
60-year-old man	Frontal region	Melanoma	BCC – lentigo maligna melanoma	Multi-component pattern with multiple blue-gray spots, hypochromic area, shiny white streaks and amorphous areas, in addition to an atypical vascular pattern
60-year-old man	Left lumbar region	Melanoma and BCC[a]	BCC – melanoma in situ	Asymmetric lesion with multicomponent pattern, atypical pigment network irregular globules in the periphery, multiple colors, particularly a blue coloration in the center-right of the lesion
13-year-old boy with a history of XP-C	right jawline	Melanoma	BCC – nodular melanoma	Ulcerated lesion showed chaos of colors including pink, white, black, gray, and blue structureless areas, gray dots, linear, looped, and serpentine vessels, ulceration, hemorrhage, keratin, scale, and fiber sign
48-year-old man with with basal cell nevus syndrome	Back	BCC? Melanoma?	BCC – melanoma in situ	Pink structureless area in the center with short, fine telangiectasias and an atypical network at the periphery

BCC = Basal cell carcinoma; na = not available; XP = xeroderma pigmentosum.
[a]diagnosed with the aid of reflectance confocal microscopy.

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