DERMATOLOGY PRACTICAL & CONCEPTUAL

www.derm101.com

Asymptomatic heterogeneously black-pigmented plaque in a 58-year-old man: an unusual presentation of a melanoma mimicker

Daniela Majerson[1], Paula Majluf[1], Álvaro Abarzúa-Araya[1], Sergio González-Bombadiére[1]

1 Dermatology Department, Pontificia Universidad Católica de Chile, Santiago, Chile

Key words: melanoma, dermatofibroma, basal cell carcinoma, seborrheic keratosis, dermoscopy,

Citation: Majerson-Grinberg D, Majluf P, Abarzúa-Araya A, González-Bombadière. Asymptomatic heterogeneously black-pigmented plaque in a 58-year-old man: an unusual presentation of a melanoma mimicker. *Dermatol Pract Concept.* 2018;8(3):224-226. DOI: https://doi.org/10.5826/dpc.0803a14

Received: November 2, 2017; **Accepted:** December 3, 2017; **Published:** July 31, 2018

Funding: None.

Competing interests: The authors have no conflicts of interest to disclose.

All authors have contributed significantly to this publication.

Corresponding author: Daniela Majerson, MD, Dermatology Department, Pontificia Universidad Católica de Chile, Vicuña Mackenna 4686, Macul. Centro Médico San Joaquin UC, Santiago, Chile. Email: djamerson@gmail.com.

Case Presentation

A 58-year-old man with a history of nodular basal cell carcinoma presented with an asymptomatic black-pigmented lesion on his left shoulder, without variation in size over time, which had been present for years. Physical examination revealed an irregular black-bluish-pigmented plaque with a maximum diameter of 8 mm. The dimple sign was negative (Figure 1). Dermoscopy showed a pseudo-pigmentary network and comedo-like openings at its center, asymmetrical peripheral streak-like structures, areas of brown-bluish pigmentation, fingerprint-like structures, and eccentric milia-like cysts (Figure 2). The lesion was excised and histological examination was performed (Figure 3).

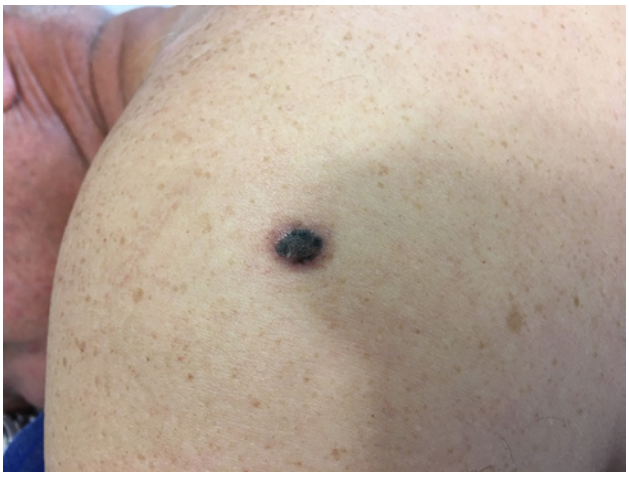

Figure 1. Physical examination revealed an irregular black-bluish-pigmented plaque with a maximum diameter of 8 mm. [Copyright: ©2018 Majerson-Grinberg et al.]

Diagnosis

Pigmented dermatofibroma

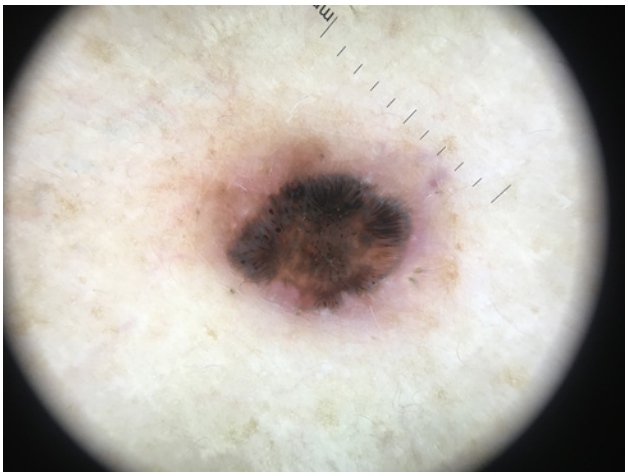

Figure 2. Dermatoscopy showed a pseudo-pigmentary network and comedo-like openings at its center, asymmetrical peripheral streak-like structures, areas of brown-bluish pigmentation, fingerprint-like structures, eccentric milia-like cysts, and a peripheral milky red area. [Copyright: ©2018 Majerson-Grinberg et al.]

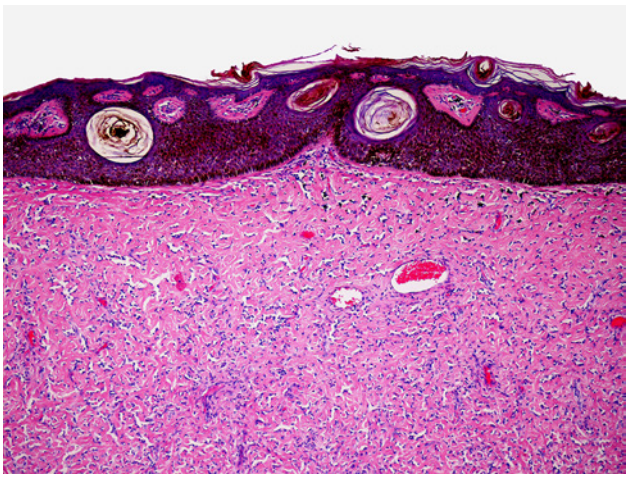

Figure 3. Hematoxylin and eosin (H&E) staining ×100. Hemosiderotic dermatofibroma with epidermal folliculosebaceous induction. Note the hyperpigmentation of basal keratinocytes, small buds of basaloid cells, and sebaceous glands. The dermis showed a fibrohistiocytic proliferation, with fibrous stroma, denser at the periphery, some blood vessels, and hemosiderophages. [Copyright: ©2018 Majerson-Grinberg et al.]

Microscopic Findings

Histopathologically, the biopsy showed hyperorthokeratosis with acanthosis and hyperpigmentation of basal keratinocytes; small buds of basaloid cells and sebaceous glands were also visible. The dermis showed a fibrohistiocytic proliferation, with fibrous stroma, denser at the periphery, some blood vessels, and hemosiderophages consistent with hemosiderotic dermatofibroma with epidermal folliculosebaceous induction.

Discussion

Dermatofibroma (DF) is a common benign dermal lesion composed of fibroblasts, collagen, macrophages, and capillaries that presents with a wide clinicopathological variety. It appears as a firm papule, plaque, or nodule, with a variable degree of pigmentation, more commonly on the lower extremities of young adults [1,2].

There are more than 40 histological variants. The pigmented or hemosiderotic type (HDF) represents 2% and was first described in 1938 as a differential diagnosis of melanoma (MM) [2]. It is composed of small vessels, extravasated erythrocytes, and intra- and extracellular hemosiderotic deposits. Clinically it presents as a firm, hard, smooth-surface papule or nodule with reddish to bluish coloration, more frequently in middle-aged women, and its recurrence is about 19%. However, because of its rarity, it is not often suspected as a melanoma mimicker [2,3].

Dermoscopy improves the diagnostic accuracy in the clinical evaluation of pigmented skin disorders that mimic melanoma. Melanoma simulators comprise a heterogeneous group of melanocytic and nonmelanocytic lesions: Black or blue color does not always indicate melanoma [4]. In nonmelanocytic lesions, the black color may correspond to hemosiderin deposits inside the skin (as in the case presented), or be derived from the oxidized plug of keratin masses (as in the pseudocysts in the seborrheic keratosis [SK]), or result from artificial tattoos. Other melanoma mimickers with blue pigmentation are vascular lesions, Kaposi sarcoma, basal cell carcinomas (BCC), and radiation tattoos [5]. Most of the dermatoscopic criteria for MM were described in its superficial spreading variety. However, pigmented nodular melanoma could be recognized by the presence of a combination of blue and black color within the lesion (the "blue-black rule"). The presence of this feature plus one or more of the standard melanoma criteria reach a sensitivity of 84.6% [6].

Pigmented BCC may dermatoscopically simulate melanoma: when melanin from the tumor nest, as well as in stroma, is increased, the nests coalesce, forming an unstructured pigmented area. Other elements like ulceration, arborizing vessels, or maple-leaf-like or spoke-wheel areas can help identify it [7].

Clonal SK are characterized by milia cysts and sharply demarcated borders, but they often show areas of bluish pigmentation composed of multiple, variously sized, and irregularly distributed blue-gray ovoid roundish structures, which resemble the asymmetrical- globular pattern observed melanoma or the ovoid nests commonly described in BBC [8].

On the other hand, Ferrari et al described a group of atypical "non-DF like" patterns, including a melanoma-like subtype. One of the lesions showing this pattern was, as in this case, characterized by the presence of irregular streak-like structures [1,9] and this group was histopathologically related with HDF [1]. The most frequent dermatoscopic

features described of HDF are a homogeneous central bluish or reddish area, with white structures inside, and a delicate pigment network at the periphery with variable vascular structures [2]. Thus, melanoma cannot be ruled out, considering the multicomponent dermatoscopic pattern of this entity.

Various DF dermoscopic structures appear to correlate with evolutive stages histopathologically. In our case, the basal keratinocytes accumulating melanin pigment in response to the inflammatory process would correspond dermatoscopically to a pseudo-pigmentary network and irregular streak-like structures [1,10] as brown-bluish pigmentation that represents the blood phagocytosed by the tumor cells. We also propose that fingerprint-like structures are correlated with elongation of the rete ridges, as small buds of basaloid cells and sebaceous glands would reflect comedo-like openings and eccentric milia-like cysts. Milky red areas would correspond to blood vessels in the peripheral stroma of the tissue.

Dermatoscopic features of our case were highly indicative for melanoma and shared some features with clonal SK, such as milia-like cysts and areas of brown-bluish pigmentation, and clinically, it can be confused with a superficial pigmented BCC.

Conclusions

The present case of pigmented dermatofibroma is the first reported, to our knowledge, to exhibit simultaneously a milia-like cyst and streak-like and fingerprint-like structures.

In conclusion, we report an HDF with different dermoscopic features from previously reported observations, highlighting the importance of understanding that this rare subtype of DF presents polymorphic features at dermoscopy, so it should be included in the spectrum of melanoma mimickers. However, histopathological examination remains mandatory to reach an accurate diagnosis.

References

1. Ferrari A, Argenziano G, Buccini P, et al. Typical and atypical dermoscopic presentations of dermatofibroma. *J Eur Acad Dermatol Venereol*. 2013;27(11):1375-1380. doi: 10.1111/jdv.12019.
2. Zaballos P, Llambrich A, Ara M, Olazarán Z, Malvehy J, Puig S. Dermoscopic findings of haemosiderotic and aneurysmal dermatofibroma: report of six patients. *Br J Dermatol*. 2006;154(2):244-250. doi: 10.1111/j.1365-2133.2005.06844.x.
3. Scalvenzi M, Balato A, De Natale F, Francia MG, Mignogna C, De Rosa G. Hemosiderotic dermatofibroma: report of one case. *Dermatology*. 2007;214(1):82-84. doi: 10.1159/000096918.
4. Kaminska-Winciorek G, Wydmanski J. Benign simulators of melanoma on dermoscopy – black colour does not always indicate melanoma. *J Pre Clin Res*. 2013;7(1):6-12.
5. Scope A, Benvenuto-Andrade C, Agero AL, Marghoob AA. Non-melanocytic lesions defying the two-step dermoscopy algorithm. *Dermatol Surg*. 2006;32(11):1398-1406.
6. Argenziano G, Longo C, Cameron A, et al. Blue-black rule: a simple dermoscopic clue to recognize pigmented nodular melanoma. *Br J Dermatol*. 2011;165(6):1251-1255. doi: 10.1111/j.1365-2133.2011.10621.x.
7. Menzies SW. Dermoscopy of pigmented basal cell carcinoma. *Clin Dermatol*. 2002;20(3):268-269. doi: 10.1016/S0738-081X(02)00229-8.
8. Squillace L, Cappello M, Longo C, Moscarella E, Alfano R, Argenziano G. Unusual dermoscopic patterns of seborrheic keratosis. *Dermatology*. 2016;232(2):198-202. doi: 10.1159/000442439.
9. Cardoso R, Massone C, Soyer HP, Hofmann-Wellenhof R. Additional dermoscopic presentation of haemosiderotic dermatofibroma. *Br J Dermatol*. 2007;156(1):199-200. doi: 10.1111/j.1365-2133.2006.07611.x.
10. Arpaia N, Cassano N, Vena GA. Dermoscopic patterns of dermatofibroma. *Dermatol Surg*. 2005;31(10):1336-1339. doi: 10.1097/00042728-200510000-00015.