Amelanotic melanoma in a patient with oculocutaneous albinism

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Abstract

Oculocutaneous albinism is a genetically heterogeneous, autosomal recessive group of disorders characterized by a generalized decreased or absence of melanin pigment in the eyes, hair, and skin. These patients have a greater sensitivity to UV radiation and a predisposition to skin tumors, mainly squamous cell carcinoma and basal cell carcinomas, and to a lesser extent malignant melanomas. Melanoma can be one of the most challenging cancers to diagnose in patients with albinism. We report an uncommon clinical presentation of melanoma, an amelanotic melanoma in the right supraciliar region in a patient with oculocutaneous albinism. The clinical presentation was an erythematous, scaly and ill-defined plaque. The skin biopsy revealed a lentigo maligna melanoma. Amelanotic melanomas are one of the two most difficult to diagnose subtypes of melanoma, together with the nevoid type. Melanoma in oculocutaneous albinism patients are often amelanotic, which makes their clinical diagnosis very difficult. These patients should be examined in the dermatology department at least once a year and it is recommended to have a high index of suspicion.

Keywords: albinism, amelanotic melanoma, case reports, dermatology, pigmentation disorders

Introduction

Oculocutaneous albinism (OCA) is a genetically heterogeneous group of autosomal recessive disorders characterized by a generalized decrease or absence of melanin pigment in the eyes, hair, and skin. There have been described at least 10 forms, resulting from different melanin synthesis blocking mechanisms. The overall prevalence is estimated in 1:17,000 cases with significant differences in various ethnic populations or geographical regions [1]. Patients with OCA have a greater sensitivity to UV radiation and a predisposition to skin tumors, mainly squamous cell carcinoma (SCC) and basal cell carcinomas (BCC), but also malignant melanomas (MM), [2, 3]. Melanomas in these patients are often amelanotic, which complicates their clinical and dermatoscopic diagnosis. The morphology of these lesions also varies according to the degree of melanin synthesis of the patients [4, 5].

Case Synopsis

We present an 81-year-old woman with a history of hypertension, diabetes mellitus type 2, and type one OCA. The patient presented with an asymptomatic erythematous, scaly and ill-defined plaque in the right supraciliar region (**Figure 1**) with a several-month history. A defined pattern could not be recognized with dermoscopy. No other pathological skin lesions were observed.

Physical examination revealed no peripheral adenopathy or visceromegaly. A skin biopsy was performed with a histopathological result of lentigo maligna melanoma (**Figure 2**). Isolated cells were

observed in the papillary dermis, without evidence of mitosis. The Breslow thickness was 0.27mm. There was no vascular invasion or ulceration, but a remarkable inflammatory response with signs of active regression was observed. Final diagnosis was, lentigo maligna melanoma, stage IA (T1aNoMo).

The entire clinically visible lesion was removed but margins were not clear and Mohs micrographic surgery was recommended. The patient refused this treatment but consented to adjuvant radiotherapy, with a total dose of 50Gy in 20 fractions.

Case Discussion

Although the rate of malignant skin diseases is directly related to sun exposure and both SCC and BCC are common in patients with OCA [2, 3], MM is very rare in these patients. We were able to locate only 40 recorded cases in patients with OCA (**Table 1**) in the literature, of which 22 were in the form of

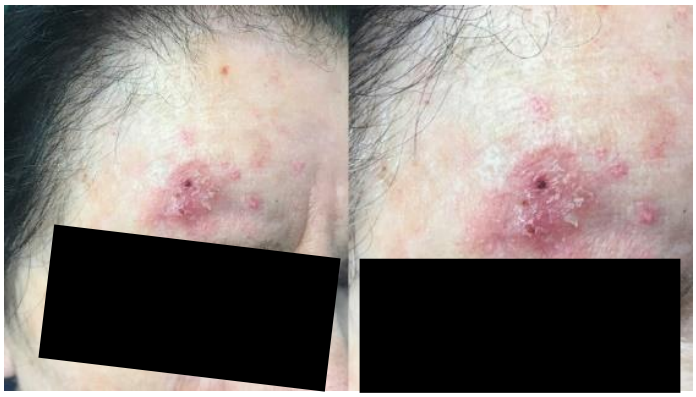

Figure 1. *Erythematous, scaly, ill-defined plaque in the right supraciliar region.*

amelanotic melanomas [6-13]. Specific clinical attributes of this variant in OCA patient should be described in order to facilitate early detection. In our patient, the melanoma appeared as an erythematous, scaly, ill-defined plaque, without any clinical sign that would make us suspect MM.

In a study conducted by Luande et al. in Tanzania [3], 104 patients out of the 350 examined with OCA presented with malignant skin tumors, of which only one turned out to be a MM (100 were SCC and three were BCC). In another retrospective study also carried out in Tanzania between 2001 and 2011 by

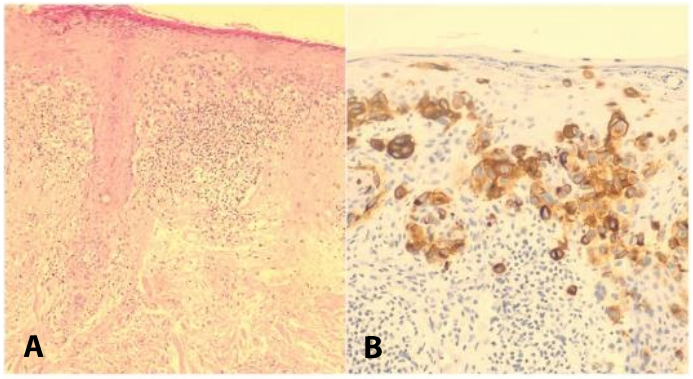

Figure 2. ***A)*** *Histological features of the atypical invasion of melanocytes in the papillary dermis. H&E, 10×.* ***B)*** *Melan-A positivity, 10×.*

Kiprono et al. [2], from 134 biopsies performed in 86 OCA patients, SCC was more common than BCC with a ratio of 1.2:1 and only one acral lentiginous melanoma was reported.

Owing to the lack of melanin pigment, the MM in OCA patients can be clinically and histologically difficult to recognize. Although the prognosis of these types of amelanotic tumors are still determined by the same factors as in the rest of patients, in OCA patients these tumors are usually more advanced at the time of diagnosis [14]. Amelanotic melanomas are one of the most difficult to diagnose subtypes of melanoma. In the study of Thomas et al. when analyzing 3467 melanomas of 2995 patients from several countries, they concluded that amelanotic melanomas (8%) generally achieved a higher tumor stage (American Joint Committee on Cancer [AJCC]) than pigmented melanoma. Moreover, the hazard ratio of death from melanoma was higher for amelanotic than for pigmented melanoma, when adjusted for age, sex, anatomic site, and study design variables. However, survival did not differ once AJCC tumor stage was also taken into account. Therefore, early detection of these tumors is crucial and better appreciation and characterization of dermascopic patterns is desirable [15].

Conclusion

Amelanotic melanoma along with nevoid melanoma are two difficult to diagnose subtypes of melanoma.

Melanoma in OCA patients are often amelanotic, which makes their clinical diagnosis very difficult. As in our case, specific clinical attributes of this variant in OCA patients should be described to better facilitate early detection. These patients should be examined in the dermatology department at least once a year and it is recommended to have a high index of suspicion in amelanotic skin lesions.

Potential conflicts of interest

The authors declare no conflicts of interests.

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Table 1. *Characteristics of malignant melanomas reported in the literature with oculocutaneous albinism. Modified and updated from van der Westhuizen et al. [6].*

	Year	Sex	Age, years	Location	Pigmentation, reference
1	1952	Male	27	Back	Amelanotic [16]
2	1957	Female	40	Calf	Amelanotic [17]
3	1958	†	30	Back	Amelanotic [18]
4	1963	Male	38	Thigh	Amelanotic [19]
5	1963	Male		Lip	† [20]
6	1965	Male	22	Calf	Amelanotic [21]
7	1967	Male	45	Oral mucosa	Amelanotic [22]
8	1969	Female		Anal canal	Melanotic [23]
9	1974	Male	42	Axila	Amelanotic [24]
10	1978	Female	32	Leg	Melanotic [25]
11	1978	Male	25	Knee	Amelanotic [26]
12	1981	Female	54	Back	Melanotic [27]
13	1982	Male	14	Knee	Melanotic [28]
14	1982	Female	30	Leg	Melanotic [29]
15	1982	Male	42	Leg	Amelanotic [30]
16	1984	Female	40	Shoulder	Amelanotic [31]
17	1985	†	†	†	† [3]
18	1985	Male	58	Leg	† [32]
19	1986	Female	46	Back	Melanotic [33]
20	1989	Female	27	Leg	Melanotic [34]
21	1989	Male	43	Back	Amelanotic [34]
22	1989	Female	22	Choroid	Amelanotic [35]
23	1992	Male	10	Leg	Melanotic [36]
24	1993	Male	58	Buttock	Amelanotic [37]
25	1996	Male	68	Choroid	Amelanotic [38]
26	1997	Male	33	Nasal cavity	Melanotic [39]
27	2001	Male	41	LLL Bronchus	Melanotic [40]
28	2001	Male	24	Forearm	Amelanotic [41]
29	2003	Male	8	Left helix	Amelanotic [42]
30	2005	Female	46	Choroid	Amelanotic [43]
31	2005	Male	†	Cecum	† [44]
32	2009	Male	43	Pubic area	Amelanotic [45]
33	2010	Female	32	Back	Amelanotic [7]
34	2015	Female	54	Knee	Amelanotic [8]
35	2017	Male	66	Back	Melanotic [9]
36	2017	Female	57	Left leg Left arm	Melanotic [10] Melanotic
37	2017	Male	57	Neck Right arm	Melanotic [11] Melanotic
38	2017	Female	35	Abdomen	Amelanotic [11]
39	2017	Male	1	Forehead	Amelanotic [12]
40	2018	Male	40	Right Cheek	Melanotic [13]

† No information published in the report.