

Segmental Vitiligo–like Hypopigmentation Associated With Metastatic Melanoma

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PRACTICE POINTS

- Melanoma-associated hypopigmentation usually manifests as common vitiligo; however, little is known about the pathophysiology of segmental vitiligo–like hypopigmentation associated with melanoma.
- This case of segmental vitiligo–like hypopigmentation associated with melanoma sheds light on possible autoimmune and mosaic disease etiology.

To the Editor:

Melanoma-associated hypopigmentation frequently has been reported during the disease course and can include different characteristics such as regression of the primary melanoma and/or its metastases as well as common vitiligo-like hypopigmentation at sites distant from the melanoma.^{1,2} Among patients who present with hypopigmentation, the most common clinical presentation is hypopigmented patches in a bilateral symmetric distribution that is similar to vitiligo.¹ We report a case of segmental vitiligo–like hypopigmentation associated with melanoma.

A 37-year-old man presented with achromic patches on the right side of the neck and lower face of 2 months' duration. He had a history of melanoma (Breslow thickness, 1.37 mm; mitotic rate, 4/mm²) on the right retroauricular region that was treated by wide local excision 12 years prior; after 10 years, he began to have headaches. At that time, imaging studies including computed tomography, magnetic resonance imaging, and positron emission

tomography–computed tomography revealed multiple nodules on the brain, lungs, pancreas, left scapula, and left suprarenal gland. A lung biopsy confirmed metastatic melanoma. Intravenous fotemustine (100 mg/m² weekly for 3 weeks) was initiated, followed by maintenance treatment (100 mg/m² once daily for 5 days) every 4 weeks.

On physical examination using a Wood lamp at the current presentation 2 months later, the achromic patches were linearly distributed on the inferior portion of the right cheek (Figure). A 2×3-cm atrophic scar was present on the right retroauricular region. No regional or distant lymph nodes were enlarged or hard on examination. Although vitiligo is diagnosed using clinical findings,³ a biopsy was performed and showed absence of melanocytes at the dermoepidermal junction (hematoxylin and eosin stain) and complete absence of melanin pigment (Fontana-Masson stain). The patient was treated with topical tacrolimus with poor improvement after 2 months.

The relationship between melanoma and vitiligo-like hypopigmentation is a fascinating and controversial topic. Its association is considered to be a consequence of the immune-mediated response against antigens shared by normal melanocytes and melanoma cells.⁴ Vitiligo-like hypopigmentation occurs in 2.8%² of melanoma patients and is reported in metastatic disease¹ as well as those undergoing immunotherapy with or without chemotherapy.⁵ Its development in patients with stage III or IV melanoma seems to represent an independent positive

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The authors report no conflict of interest.

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Segmental vitiligo-like hypopigmentation on the right lower cheek in a patient with metastatic melanoma (A); Wood lamp examination highlighted the achromic areas (B).

prognostic factor² and correlates with a better therapeutic outcome in patients undergoing treatment with biotherapy.⁵

In most cases, the onset of achromic lesions follows the diagnosis of melanoma. Hypopigmentation appears on average 4.8 years after the initial diagnosis and approximately 1 to 2 years after lymph

node or distant metastasis.¹ In our case, it occurred 12 years after the initial diagnosis and 2 years after metastatic disease was diagnosed.

Despite having widespread metastatic melanoma, our patient only developed achromic patches on the area near the prior melanoma. However, most affected patients present with hypopigmented patches in a bilateral symmetric distribution pattern similar to common vitiligo. No correlation has been found between the hypopigmentation distribution and the location of the primary tumor.¹

Because fotemustine is not likely to induce hypopigmentation, we believe that the vitiligolike hypopigmentation in our patient was related to an immune-mediated response associated with melanoma. To help explain our findings, one hypothesis considered was that cutaneous mosaicism may be involved in segmental vitiligo.⁶ The tumor may have triggered an immune response that affected a close susceptible area of mosaic vitiligo, leading to these clinical findings.

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