

Local depigmentation as a sign of local recurrence of a histologic complete regressed malignant melanoma



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INTRODUCTION

Malignant melanoma is an immunogenic tumor that derives from transformed melanocytes.¹ These tumors can be infiltrated by T lymphocytes, and this could cause destruction of normal melanocytes, which is clinically evident as leukoderma.² Several leukodermas are described in melanomas: primary melanoma regression, halo nevi, and melanoma-associated depigmentation, which either occurs spontaneously or after immunologic-based treatment.³ Complete primary melanoma regression is a rare finding with no consensus about the prognostic significance.^{2,4} Melanoma-associated depigmentation is a more common finding, especially after treatment.⁵ It appears in sites distant from the primary tumor and is associated with favorable prognosis and response to immunogenic treatment.⁶ We describe a 70-year-old man who presented with local depigmentation as a sign of melanoma recurrence in the scar of his complete regressed malignant melanoma.

CASE PRESENTATION

A 70-year old white man presented initially with a growing lymph node in the right axilla. Histopathologic examination found a metastasis of a large-cell neoplasm.

The patient mentioned an excision of a blue-grey spot on his back 4 weeks before, which was determined benign. The material was reassessed by the melanoma expert panel of the Netherlands who concluded tumoral melanosis, which can be

Abbreviation used:

PET-CT: positron emission tomography/
computed tomography



Fig 1. Melanoma recurrence. Area of hypopigmentation around the melanoma scar. The location of the punch biopsy is marked.

seen as a resting state after complete degeneration of a primary cutaneous melanoma, caused by an immune reaction. The material showed large aggregates of melanophages in all levels of the dermis and fibrosis. There were no melanocytic proliferations and no signs of halo nevus. Because of these 2 findings, malignant melanoma with an axillary lymph node metastasis, *BRAF* mutation positive was diagnosed. A positron emission tomography/computed tomography scan (PET-CT) and MRI of the brain were performed, and there was no evidence of metastatic disease. The patient's disease was staged with pTx, N1, M0, stage IIIC (AJCC 7th

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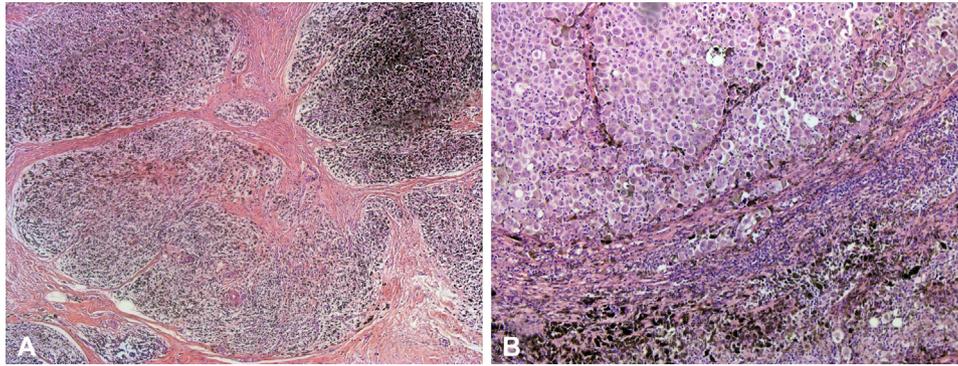


Fig 2. **A**, Histopathologic image of the melanoma recurrence. Mostly spindle-shaped melanocytic cells with prominent melanin pigmentation located in the dermis. **B**, Histopathologic image of the melanoma recurrence. Melanocytic cells with polymorphic nuclei and large eosinophilic nucleoli, located in the dermis. (**A** and **B**, Hematoxylin-eosinophil stain; original magnifications: **A**, ×50; **B**, ×100.)

edition) and treated with induction dabrafenib and trametinib therapy. The axillary metastasis clinically reduced. After 4 months, an axillary lymph node dissection and 1-cm re-excision of the primary melanoma scar were performed. The re-excision material did not show any signs of melanoma. Another PET-CT found no evidence of metastasis. Induction therapy was discontinued, and a watchful waiting policy was applied.

Five months after stopping induction therapy, the patient contacted our dermatology department because of a recently noticed expanding depigmentation around his melanoma scar (Fig 1). Until then, none of the specialists noticed anything suspicious in the area of his melanoma scar. Physical examination found a depigmented patch, 27 × 15 mm, around the lateral part of the scar with an indurated aspect underneath. There were no other similar patches on his body. A punch biopsy of the indurated depigmentation was performed. Histopathologic investigation found a malignant melanoma. The patient was sent to the surgical oncologist who performed an excision with 5-mm margins around the clinical visible depigmentation. Histopathologic examination found, in multiple cross sections of the skin, a maximum of 7 nodules located in the transition area of the reticular dermis to the subcutaneous fat region. The nodules consisted of melanocytic cells varying between an epithelioid and a spindle-shaped form (Fig 2, A). The nodules mostly had moderate-to-severe polymorphic nuclei with a vesicular pattern and large eosinophilic nucleoli (Fig 2, B). The nuclei were surrounded by spacious cytoplasm with prominent melanin pigmentation with varying intensity throughout the lesion. The mitotic rate was low,

less than 1/mm². The lesion was surrounded by moderate fibrosis and a sparse lymphocytic infiltrate and lacked any relationship with the epidermis. The PET-CT did not show any signs of metastatic disease. A watchful waiting policy was applied, and no signs of local recurrence or metastatic disease were seen on the PET-CT 8 months after the local recurrence.

DISCUSSION

Several leukodermas are described in melanomas: (1) primary melanoma regression—a progressive process replacing the dermal portion of the tumor with fibrous stroma, (2) halo nevus—a benign melanocytic nevus surrounded by a rim of depigmentation, and (3) melanoma-associated depigmentation—depigmented patches in sites distant from the primary tumor, arising either spontaneously or after immunologic-based treatments.² Primary partial melanoma regression is found in 10% to 35% of primary melanoma cases.⁷ Complete regression, however, has an estimated incidence of 0.24% and is described in approximately 49 cases in the literature.^{4,8} The exact mechanism of regression remains to be elucidated, but it has been attributed to immunologic mechanisms based on the inflammatory infiltrate that characterizes regression.⁴ Melanoma-associated depigmentation occurs in 2.8% of all patients with melanoma.⁹ The depigmented patches always occur on sites distant of the original melanoma.^{5,9} However, a case has been described with melanoma metastases presenting as bluish nodules with surrounding depigmented patches.¹⁰ We describe a case of local depigmentation as a sign of local recurrence within the scar of a complete regressed melanoma. In our case, the

depigmented area also had an indurated aspect. We hypothesize the tumor began in the dermis and then caused an early immune reaction resulting in visible epidermal depigmentation. This case underlines once again the importance of a record of all previous removed melanocytic lesions and a thorough physical examination for any abnormality.

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