

Tattoo pigment removal by halo nevus phenomenon



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Halo nevi (HN) are benign neoplasms that occur in approximately 1% of the population, often in childhood. The halo phenomenon can also be seen surrounding benign lesions such as nevi, basal cell carcinoma, melanoma, or other tumors.¹ We report the unique occurrence of a multiple HN on the trunk in a heavily tattooed white male, with accompanying resolution of surrounding tattoo pigment.

REPORT OF A CASE

A man in his 30s with a history of multiple acquired and congenital melanocytic nevi presented for a skin check and was found to have multiple HN. Many of these nevi occurred on his normal skin; however, several were present within an existing tattoo on his back, and the halo phenomenon resulted in complete clearance of surrounding tattoo pigment (Fig 1). He had a complete skin and ophthalmologic examination, which found no concerning pigmented lesions. He had no significant medical problems and was not taking any medications.

DISCUSSION

Clinically, HN are melanocytic nevi surrounded by a depigmented zone. Approximated 60% of HN occur on the back, but other common areas include the face, chest, and abdomen.² About 25% to 50% of patients present with 2 or more HN.³

Histologically, HN show few melanocytes with a dense lichenoid infiltrate of CD8⁺ lymphocytes. The adjacent skin shows an absence of basal melanocytes and melanin that corresponds to the clinical depigmented halo. In some cases of HN, there is a clear immunologic correlation in which specific activated lymphocytes can be isolated from peripheral blood.⁴

Abbreviation used:

HN: halo nevi



Fig 1. Multiple HN on the upper back. There is clearance of tattoo pigment around HN within the tattoo.

Patients with multiple HN seem to be at increased risk of vitiligo, and several studies have shown associations, but none have reached statistical significance, whereas about 20% of patients with vitiligo have a HN.⁵ However, in most cases, HN are seen in otherwise healthy individuals, such as our patient, and no inciting event is identified.

The current standard for tattoo removal is treatment with lasers utilizing selective photothermolysis to shatter ink pigment into smaller particles. This method allows the particles to be phagocytized by macrophages. In our patient, the exact mechanism of

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pigment removal is unclear, but is likely immunologic. In a small case series, the topical immunomodulator imiquimod was used as an adjunct to laser treatment, which suggested a small benefit in tattoo clearance, although it did not meet statistical significance.⁶ Macrophage colony-stimulating factor has been proposed as another potential adjuvant treatment but has not been tested clinically.⁷

To our knowledge, this phenomenon has not been reported in the literature, and we report a previously undescribed clinical manifestation of HN occurring in the setting of a tattoo with complete, nonscarring depigmentation of the surrounding tattoo.

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