Repigmentation of gray hairs with lentigo maligna and response to topical imiquimod

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INTRODUCTION

Lentigo maligna is a clinical subtype of melanoma that occurs on sun-damaged skin, often grows slowly, and can become quite extensive if left untreated. If biopsy specimens of these tumors do not reveal sufficient melanocytic cell density, they may not be directly identified as malignant, which may also potentially delay treatment. Lentigo maligna tumors have occasionally been noted to have the capacity to invade and repigment gray hairs.[1] This phenomenon does suggest it may one day be possible to repigment hair with normal melanocytic cells.

Although surgery is the standard of care for treatment of lentigo maligna, for large tumors this can lead to substantial morbidity and may not be appropriate for some patients. A second-line alternative is imiquimod. Current United States Food and Drug Administration approvals for imiquimod 5% cream include treatment of warts, actinic keratosis, and superficial basal cell carcinoma. Off-label use for lentigo maligna has historically been deemed only acceptable as adjuvant therapy, with studies citing recurrence in 25% to 47% of patients.[2,3] Recent meta-analyses suggest an approximately 77% histologic and 78% clinical clearance rate, with treatment intensity and dose affecting ultimate results.[4] We present the case of an 86-year-old man with an extensive lentigo maligna and hair repigmentation on the scalp, which was successfully treated with topical imiquimod.

CASE REPORT

An 86-year-old white man with a medical history of hypertension and nonmelanoma skin cancer was referred to our clinic with a 15-cm × 8-cm patch with brown and black pigmentation occupying the vertex and superior occipital scalp. The lesion included repigmented black hairs (Fig 1) and was clinically and dermoscopically consistent with lentigo maligna. He had no previous history of melanoma. The patient stated that it had been there for roughly 8 years and had been continuously growing.

He visited several physicians over the years, and biopsy specimens were read sequentially as pigmented actinic keratosis and solar lentigo, lentiginous melanocytic proliferation with mild atypia, which was then reinterpreted as solar lentigo, and finally as lentiginous melanocytic proliferation with mild and moderate atypia. When provided with the clinical images, the last biopsy specimens were interpreted as consistent with lentigo maligna; this highlights the necessity of clinical and pathologic correlation.

As the lesion grew, the patient became more concerned about the cosmesis of the lesion and was more concerned about being seen in public. An extensive discussion was held with the patient regarding treatment options, and he was referred to plastic surgery and radiation oncology. Given the extensiveness of the surgery and concerns regarding radiation, the patient decided against both treatments.

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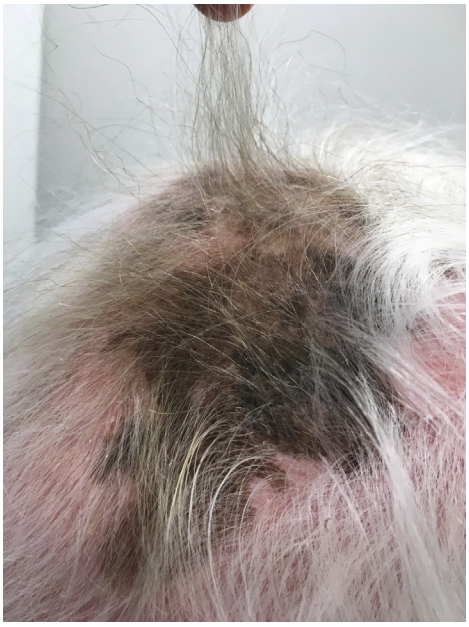

Fig 1. Pretreatment lesion consistent with lentigo maligna on the patient's scalp.

After considering all the risks and benefits, the patient agreed to a trial of topical imiquimod 5% cream applied 6 times weekly for 12 weeks. The patient was monitored monthly and had an exuberant inflammatory reaction on the area initially, which was followed with almost complete clearing of the lesion on the fifth month (Fig 2). Treatment was continued focusing on the areas that retained pigmentation for four more months with complete clearing of the lesion (Fig 3).

The patient continues to be monitored for recurrence according to guidelines for his history of multiple skin cancers. He has been clear of disease for 17 months.

DISCUSSION

Lentigo maligna is a melanocytic neoplasm typically found on the head and neck of chronically sun-damaged areas, with a higher prevalence in fair-skinned and elderly populations.[5] In its earlier phases, the lentigo maligna radial growth may be indolent, evolving over upwards of 20 years.[6] The histopathologic diagnosis may be challenging if there is insufficient cell density. Occasionally this tumor also invades hair follicles.[1]

The standard of care for treatment of these lesions is surgery, including staged excision and Mohs micrographic surgery.[7] Other therapies, such as cryotherapy, radiation therapy, and imiquimod, have been used in the adjunctive space.

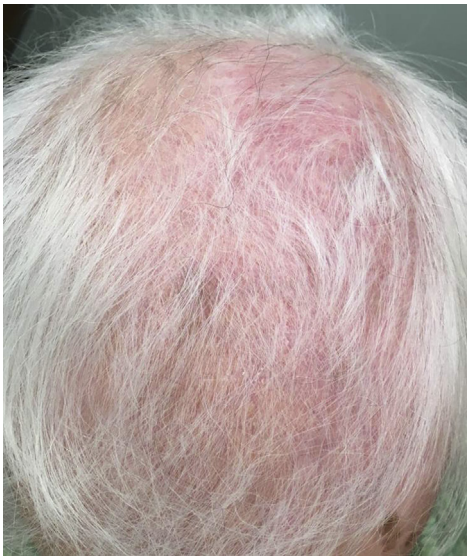

Fig 2. Treated lesions at five months.

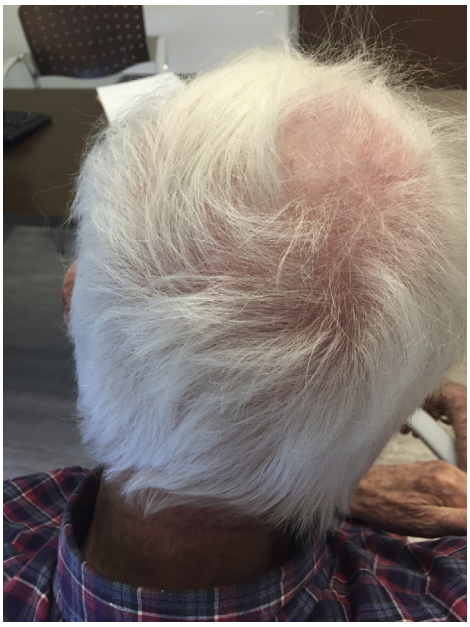

Fig 3. Treated lesion at nine months.

Imiquimod elicits cytokine induction to the skin via activation of Toll-like receptor 7, which ultimately leads to an increase in the production of interferon-α.[8] A systematic review that included 471 patients reported a clinical clearance of 78.3% and histopathologic clearance of 77%, showing that >60 applications had higher odds of histologic clearance.[2] Another series confirmed, after a mean of 42.1 months, the long-term clearance rate was 72.7% when using 5% imiquimod cream for primary therapy for lentigo maligna.[3]

The hair repigmentation in our patient also largely cleared with treatment, suggesting that the treatment was also able to eliminate these deeper cells. For now, he will continue to be monitored with biopsies and focal repeat treatments with imiquimod as necessary. The patient understands that invasion and deadly progression can occur even after treatment with imiquimod. Nevertheless our patient's primary goal of a good cosmetic result was achieved. He is much happier now in public setting, although he does regret not being able to keep the repigmented hairs.

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