Meyerson phenomenon arising on dermatofibroma: Report of 2 cases with dermatoscopy and reflectance confocal microscopy and literature review

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INTRODUCTION

Meyerson phenomenon, also called halo dermatitis or halo eczema, is defined as an eczematous reaction, characterized by erythematous and scaling patches often associated with pruritus that develops around a preexistent cutaneous lesion.[1] It has been described in different melanocytic and nonmelanocytic tumors. Here, we describe 2 uncommon cases of the Meyerson phenomenon that arose around a dermatofibroma with dermatoscopy and reflectance confocal microscopy (RCM) evaluation, along with a literature review.

Abbreviation used:

RCM: reflectance confocal microscopy

CASE REPORT

Patient 1

A 55-year-old man presented with an erythematous-brownish patch, with irregular but well-demarcated margins, localized on the right leg. In the central area of the patch, a nodule of approximately 1 cm in diameter, showing a hard consistency, was observed. He reported that the nodule first appeared 2 years before, whereas the itchy patch had developed in the past 2 months (Fig 1, *A*). Dermatoscopy of the nodular lesion showed a white network with brownish globule-like structures and focal dotted vessels, (Fig 2, *A*) whereas the peripheral area revealed yellow-orangish scales and polymorphous vessels over an erythematous background (Fig 2, *B*). RCM showed at the level of the nodule the presence of bright-edged papillae (Fig 2, *C*) and in the peripheral area the presence of intraepidermal spongiosis (appearing as dark areas with broadband intercellular spaces) and vesicles containing inflammatory bright cells (Fig 2, *D*). Based on clinical, dermatoscopy, and RCM findings, a diagnosis of dermatofibroma with the Meyerson phenomenon was suspected, and a topical association of corticosteroid and antibiotic was prescribed. After 1 week, a visible improvement of the peripheral eczematous halo was observed (Fig 1, *B*). The nodular lesion was excised, and the histologic examination confirmed the diagnosis of dermatofibroma showing the Meyerson phenomenon (Fig 3).

Patient 2

A 49-year-old man presented with a grayish, firm nodule of approximately 1.5 cm in diameter, localized on the left leg, surrounded by an itchy, erythematous-brownish patch with ill-defined margins (Fig 4, *A*). Clinical history was noncontributory. Dermatoscopy showed a white network at the level of the nodule and diffuse yellow-orangish scales over an erythematous background at the periphery

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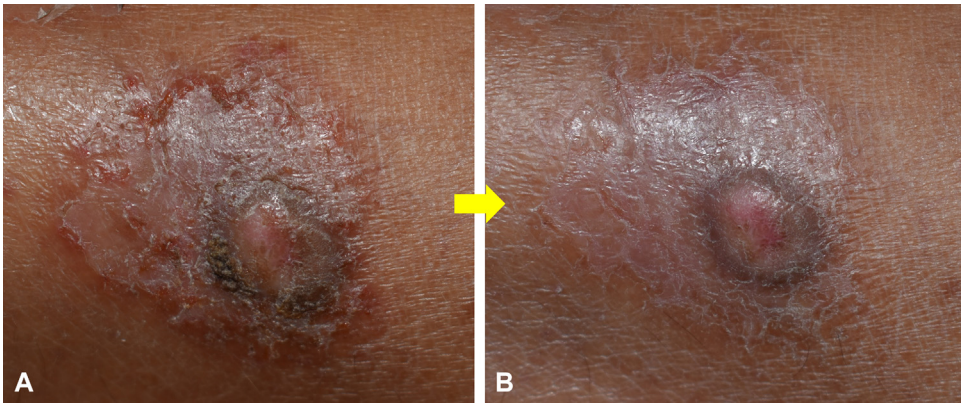

Fig 1. Patient 1. **A,** Nodular lesion on the right leg surrounded by an eczematous patch with irregular but well-demarcated margins. **B,** Visible improvement of the peripheral halo after 1 week of topical corticosteroid/antibiotic association.

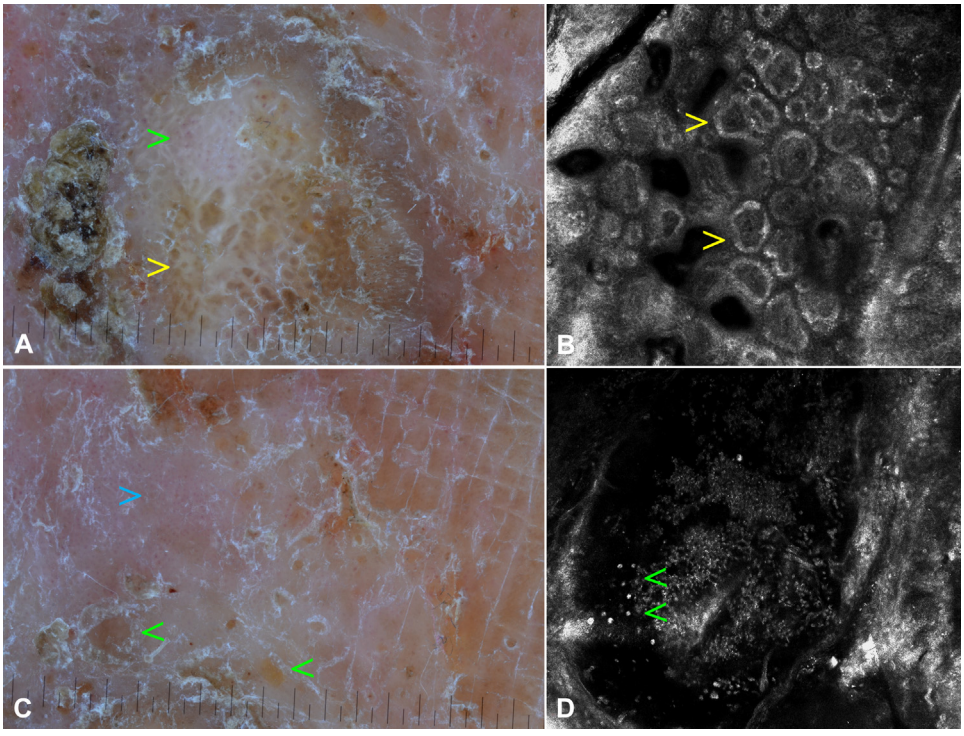

Fig 2. Patient 1. **A,** Dermatoscopy of the nodular lesion showing a white network with brownish globule-like structures (*yellow arrow*) and dotted vessels (*green arrow*). **B,** Reflectance confocal microscopy of the same nodule showing edged dermal papillae (*yellow arrows*). **C,** Dermatoscopy of the peripheral patch revealing yellow-orangish scales (*green arrows*) and irregular vessels over an erythematous background (*blue arrow*). **D,** Reflectance confocal microscopy of the patch showing a vesicle containing inflammatory bright cells (*green arrows*).

(Fig 4, *B*), and RCM showed the same findings as observed in patient 1 (Fig 4, *C* and *D*). A punch biopsy was performed, and the histologic examination confirmed the diagnosis of dermatofibroma with the Meyerson phenomenon (Fig 4, *E*).

DISCUSSION

The Meyerson phenomenon was described for the first time in 1971 in 2 patients as a papulosquamous eruption involving preexisting melanocytic nevi that improved after the treatment with topical

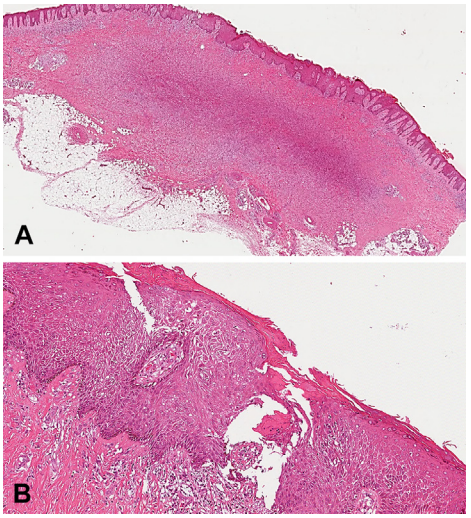

Fig 3. Patient 1. **A,** Histopathology of the nodular lesion showing a dermal-based proliferation of spindle cells with ill-defined margins. **B,** A detail of the overlying epidermis showing acanthosis, parakeratosis, and mild spongiosis with vesicle formation. (**A** and **B,** Hematoxylin-eosin stain; original magnification: **A,** ×20; **B,** ×80.)

Table I. Lesions presenting the Meyerson phenomenon reported in the literature

Melanocytic nevus (congenital or acquired)	>100*
Melanoma	25
Capillary malformation	12
Seborrheic keratosis	6
Dermatofibroma	3
Sebaceous nevus	3
Scar	3
Basal cell carcinoma	1
Squamous cell carcinoma	1
Lentigo simplex	1
Molluscum contagiosum	1
Infantile haemangioma	1
Pyogenic granuloma	1
Angiokeratoma	1
Succokeratosis	1
Smooth muscle hamartoma	1
Mucinous eccrine nevus	1

*It is not possible to know the exact number as in some papers it is not reported.

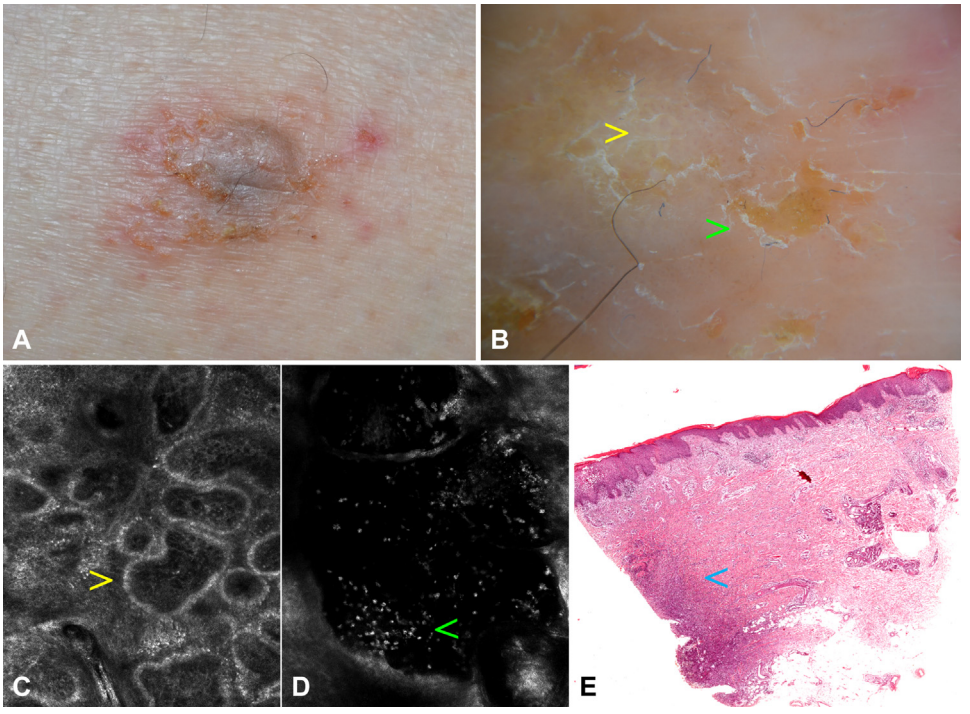

Fig 4. Patient 2. **A,** Grayish nodule of the left leg surrounded by an eczematous patch with ill-defined margins. **B,** Dermatoscopy showing a fine white network with dotted vessels at the level of the nodule (*yellow arrow*) and yellow-orangish scales at the periphery (*green arrow*). **C,** Reflectance confocal microscopy of the nodule showing edged dermal papillae (*yellow arrow*). **D,** Reflectance confocal microscopy of the patch showing a vesicle containing inflammatory bright cells (*green arrow*). **E,** Histopathology of a punch biopsy showing mild acanthosis, parakeratosis, and spongiosis with vesicle and serocrust formation in the epidermis, moderate lymphohistiocytic perivascular inflammation in the papillary dermis, and an ill-defined proliferation of spindle cells (*blue arrow*) at a lateral surgical resection margin (**E,** Hematoxylin-eosin stain; original magnification: **E,** ×20).

corticosteroids.[1] The exact etiopathogenesis is unclear, and multiple theories have been proposed. Sunburns, interferon treatment for systemic diseases, and laser therapy have been reported as possible trigger factors. From a literature review, >160 cases have been reported around benign and malignant lesions (Table I). Melanocytic nevi represent the most common underlying lesions (>100 cases), followed by melanoma (25 cases), capillary malformations (12 cases), and seborrheic keratosis (6 cases). The onset of the Meyerson phenomenon around a dermatofibroma has been reported in 3 cases only.[2-4]

The diagnosis of the Meyerson phenomenon is generally based on the typical clinical presentation, which may range from an erythematous halo with poorly defined borders to yellowish crusts and a scaly surface that surrounds a central lesion. The clinical appearance of the underlying lesion is often altered by the eczematous reaction that, although it appears to have no impact on the prognosis of a benign lesion, in the case of a malignant tumor can lead to inaccurate evaluation and delayed diagnosis.[5-7] A good response to topical corticosteroid treatment is often useful to support the diagnosis of the Meyerson phenomenon, as observed in our patient 1. In selected cases, histopathologic examination is required for confirmation, revealing the characteristic findings of eczema regardless of the central lesion: spongiosis with focal vesicle formation and perivascular inflammatory infiltrate.

Dermatoscopy of the Meyerson phenomenon has been reported by different authors[5-9] showing similar findings to other forms of eczematous dermatitis.[10] In particular, the halo of eczema is characterized by the presence of dotted vessels and white-yellow scales.[10,11] RCM of the Meyerson phenomenon has been reported in 2 cases only of melanocytic nevi and angiokeratoma, respectively[5,9]: in both cases, it revealed at the level of the inflammatory/eczematous halo the presence of spongiosis, vesicles, and inflammatory cells.

In our 2 cases, dermatoscopy and RCM showed the typical features of both dermatofibroma and the Meyerson phenomenon, allowing for a noninvasive diagnosis later confirmed by histopathology. Our results confirm the usefulness of these techniques in the evaluation of lesions presenting the Meyerson phenomenon, providing important clues for a correct diagnosis, and avoiding overtreatment and undertreatment in the case of benign and malignant underlying lesions, respectively.

Conflicts of interest

None disclosed.

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