Dermatology Practical & Conceptual

Pigmented Demodex Folliculorum: A Novel Dermoscopic Finding in Brown Facial Macules

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Introduction

The role of Demodex mites in dermatological conditions has not been fully elucidated yet. The mites, at low densities, constitute normal finding in pilosebaceous follicles in adults. However, overproliferation of Demodex, with mites visible to the naked eye as whitish scales at the base of the hair, and accompanied by erythema or subjective complaints (burning, itch, skin hypersensitivity or roughness), is classically defined as demodicosis [1]. Demodicosis may be divided into primary (pityriasis folliculorum) and secondary forms, the latter being associated with rosacea, acne, perioral dermatitis, and blepharitis [2]. Recently, a novel entity, pigmented demodicosis (PD), has been highlighted in the literature [3]. Apart from the aforementioned features of demodicosis, PD manifests clinically with facial hyperpigmentation and shows under dermoscopy irregularly pigmented circles surrounding hair follicles.

The aim of the report is to highlight a new dermoscopic finding, pigmented Demodex, and to outline the differences with the recently described entity, PD.

Case Presentation

Here, we present five patients with brown facial macules, in whom we observed pigmentation either of the contour or of the whole body of Demodex mites under high magnification dermoscopy (Horus system, field of view 1.7 mm x 1.275 mm, Figure 1). This case series includes three patients with lentigo maligna (LM), who showed under dermoscopy pigmentation of the Demodex contour (Figure 1, A-C), and one patient with LM, who presented with multiple entirely-pigmented Demodex tails protruding from hair follicles (Figure 1, D and E). In two of the aforementioned cases, the presence of pigmented Demodex was not restricted to the heavily pigmented part of LM, but it could be also noted within the areas of regression (Figure 1, C and D). Interestingly, we also encountered one patient with solar lentigo, in whom we observed pigmented Demodex as round dark-brown structures inside hair follicles (Figure 1F). Hence, the dermoscopic finding of pigmented Demodex cannot be considered as specific for malignant lesions and it is probably

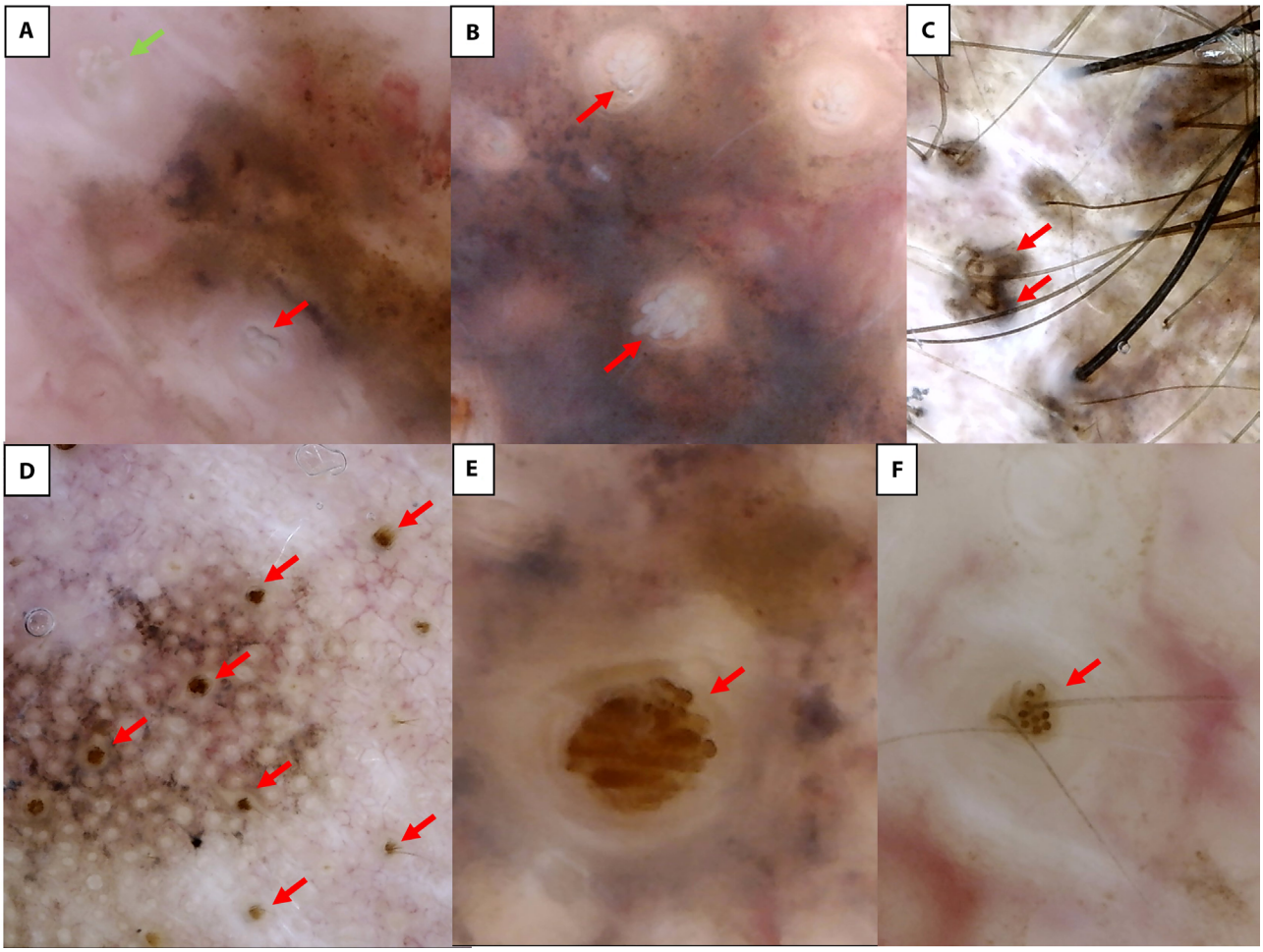

Figure 1. (A, B) Super-high magnification dermoscopy of lentigo maligna (LM) showing presence of pigmented Demodex as elongated white structures with brown contours (red arrows) inside hair follicle. In addition, non-pigmented Demodex (green arrow) was detected outside the area of the brown facial macule (magnification x150; field of view 1.7mm); (C) LM involving the hairy scalp - pigmented Demodex protruding from the hair follicles (red arrows) (magnification x150; field of view 1.7 mm); (D) LM with numerous heavily-pigmented Demodex tails (red arrows) protruding from the hair follicles (magnification x30; field of view 7.5mm); (E) Clustered, entirely pigmented, and elongated bodies of Demodex (red arrow) within the hair follicle (magnification x150; field of view 1.7mm); (F) Solar lentigo – Demodex detected under super-high magnification dermoscopy as round brown structures (red arrow) inside the hair follicle (magnification x150; field of view 1.7 mm).

due to abundant free pigment in the epidermis and/or hair follicles that stains the mites on their surface.

Conclusions

The presence of Demodex folliculorum is classically confirmed by standardized skin surface biopsy (SSSB) [2]. Non-invasive imaging methods of use for the detection of Demodex include (video) dermoscopy, reflectance confocal microscopy (RCM), and optical coherence tomography [4-6]. Recently, super-high magnification dermoscopy was reported as a valuable tool for non-invasive visualization of Demodex both inside and outside hair follicles [7]. Whitish gelatinous protrusions from hair follicles, which correspond to Demodex tails, constitute the predominant finding. In addition, grayish dots, scaling, and red dots may be observed.

PD is a recently highlighted entity, which clinically presents as facial hyperpigmentation and should be taken into consideration in the differential diagnosis of LM [3]. Under dermoscopy, PD shows irregularly pigmented circles surrounding hair follicles, while in RCM dilated follicles with Demodex mites and pigmented keratinocytes around hair follicles may be observed [3]. Differentiation with melanocytic lesions may be challenging, however, unlike LM, hair follicle obstruction with pigment should not be observed in PD. Histopathological examination of PD reveals interface dermatitis and heavily pigmented melanophages in the papillary dermis, presumably corresponding to post-inflammatory hyperpigmentation following Demodex-induced inflammation in dark-skinned patients [3].

We would like to emphasize that the phenomenon observed by us, namely presence of pigmented Demodex mites within melanocytic and non-melanocytic facial macules,

should be distinguished from the pigmented variant of demodicosis, PD.

The pigmentation within Demodex folliculorum has been predominantly observed by us in LM. However, we have also encountered a case of solar lentigo with heavily pigmented Demodex inside the hair follicle. Therefore, both the diagnostic significance and the origin of the pigment need further research.

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