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Dermoscopy findings of a one mm lentigo maligna

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Abstract

A 66-year-old man presented with a grayish 1mm macule on the left cheek. Dermoscopic examination revealed annular-granular structures partially surrounding a single follicular ostium. Histopathologic examination demonstrated atypical, confluent single melanocytes at the basal layer with nesting, crowding, and upward migration descending along the hair follicle, consistent with the diagnosis of lentigo maligna (LM). This case presents evidence in support of the Schiffner progression model for LMs, starting with asymmetric pigmented follicular openings composed of annular-granular structures, which later coalesce into gray to dark black/brown streaks, and then form pseudo-networks or rhomboidal structures. The finding of annular-granular structures partially surrounding a single hair follicle may be the earliest recognizable dermatoscopic feature of an LM and may help clinicians diagnose facial LMs earlier.

Keywords: lentigo maligna, dermoscopy

Introduction

Lentigo maligna (LM) is a slow-growing melanocytic neoplasm that develops on sun-damaged skin, most commonly on the head and neck of older Caucasian males [1]. LM is the in-situ stage or precursor of lentigo maligna melanoma (LMM). It typically presents as an asymmetric hyperpigmented macule with irregular borders. It has a prolonged horizontal growth phase, with a tendency to grow centrifugally

and remain confined to the epidermis. Since LMs can grossly mimic several benign facial pigmented lesions, early diagnosis can be challenging [1]. Melanoma-specific dermatoscopic findings of facial LMs that can help make the diagnosis include asymmetric pigmented follicular openings, slate-gray dots, also referred to as annular-granular structures, a gray pseudo-network, and/or rhomboidal structures. Herein we present a case of an early 1mm LM, with annular-granular structures partially surrounding a single follicular ostium on dermoscopy.



Figure 1. Dermoscopy of a 1mm lentigo maligna with slate-gray dots, also referred to as annular-granular structures, partially surrounding a single follicular ostium. The lines on the left side of the image are a part of the 10mm scale on the face plate of the dermatoscope. The distance between two lines represents 1mm.

Case Synopsis

A 66-year-old man with a past medical history significant only for a severely dysplastic nevus presented to the outpatient dermatology clinic for his annual skin check. The patient had no specific lesions of concern. On examination, a grayish 1mm macule was noted on the left cheek. Dermatoscopic examination revealed annular-granular structures, partially surrounding a single follicular ostium (Figure 1). Histopathologic examination demonstrated atypical, confluent single melanocytes at the basal layer with nesting, crowding, and upward migration descending along the hair follicle, consistent with the diagnosis of LM (Figure 2).

Conclusion

Pigmented facial lesions pose a diagnostic challenge for clinicians. The differential diagnosis for these lesions includes benign lesions, such as solar lentigo, early seborrheic keratosis (SK), pigmented actinic keratosis (AK), and lichen planus-like keratosis (LPLK), as well as malignant lesions, such as LM and LMM. This diagnostic challenge can result in a delay in diagnosis, potentially affecting patient morbidity and mortality. Dermoscopy is an important tool for differentiating benign from malignant neoplasms in early pigmented facial lesions. Melanoma-specific dermatoscopic findings of pigmented facial lesions

include, asymmetric pigmented follicular openings, slate-gray dots and globules, also known as annular-granular structures, a gray pseudo-network, rhomboidal structures, and a finding referred to as “circle within a circle” [2, 3]. The latter is a melanoma-specific finding of pigmented facial lesions characterized by circles surrounding follicular ostia surrounded by larger concentric circles. Although all pigmented facial lesions can contain annular-granular structures alone, other melanoma-specific findings should be absent in benign lesions. The presence of annular-granular structures along with any other melanoma-specific criteria should warrant a biopsy to rule out LM or LMM. LMs are characterized histologically by pleomorphic, atypical, single melanocytes with contiguous spread along the dermal-epidermal junction and extending down hair follicles, on photo-damaged skin [4].

Schiffner et al. (2000) suggested a dermatoscopic progression model of facial LMs that start with asymmetric pigmented follicular openings composed of annular-granular structures [5]. These later coalesce into gray to brown streaks and then form gray to brown pseudo-networks or rhomboidal structures [5]. Eventually, gray or black homogeneous areas appear, obliterating the follicular ostia [5]. This case presents evidence in **support of Schiffner’s progression model, in that the**

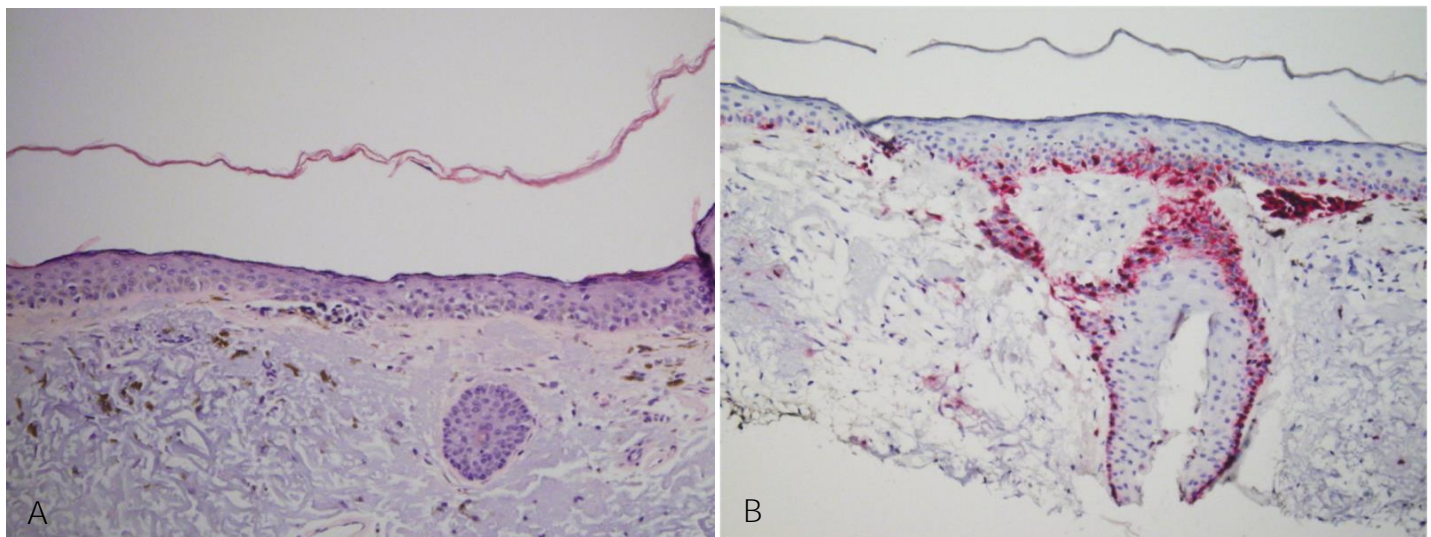


Figure 2. A) Atypical, confluent single melanocytes at the basal layer with nesting, crowding and upward migration. H&E, 100 \times . B) Confluent single melanocytes descending deep along the hair follicle, highlighted by tyrosinase staining, 100 \times .

earliest dermatoscopic features of this LM were annular-granular structures partially surrounding a single hair follicle. These dermatoscopic features, in addition to rhomboidal structures, have been found to have a sensitivity and specificity of 89% and 96%

for facial LMs, respectively [5]. The finding of annular-granular structures partially surrounding a single hair follicle likely represents the earliest recognizable dermatoscopic feature of an LM and may help clinicians diagnose facial LMs earlier.

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