On the face, the important differential diagnosis of pigmented skin lesion is between lentigo maligna, lentigo maligna melanoma, and flat seborrheic keratosis or lentigo seniles (synonymous with flat seborrheic keratosis in our terminology). In this article, we have summarized our experience in this field. Numerous examples for the criteria mentioned are given in the second edition of the Color Atlas of Dermatoscopy.\(^1\) Table 1 and Figure 1 are also adopted from that atlas with permission.

A conventional pigment network is rarely found on adult facial skin. The rete ridges are flat to absent, so they produce no pigmented pattern. Instead, a pseudonetwork with a broad mesh and holes is created by the numerous pigment-free terminal and vellus hair follicles, as well as the openings of sweat glands. This pseudonetwork is location dependent and therefore present in both melanocytic lesions and nonmelanocytic lesions, such as seborrheic keratoses, on the face. On the face, therefore, the pseudonetwork does not distinguish between melanocytic and nonmelanocytic lesions, making it necessary to employ appropriate primary criteria.\(^2\)\(^-\)\(^4\)

We compared the dermatoscopic features of lentigo maligna and lentigo senilis on the face by using logistic regression analysis.\(^5\) In this analysis, horn pseudocysts, yellow opaque areas, and fingerprint-like structures were most suggestive of lentigo senilis. In equivocal lesions, the presence of a moth-eaten border and the jelly sign can indicate lentigo senilis. A biopsy or close observation is necessary if asymmetric pigmented follicles occur. The pigmented rete ridges can produce grouped circular structures resembling grape clusters; these, along with horn pseudocysts, also indicate lentigo senilis. Sometimes at the periphery of seborrheic keratosis, streaklike areas are identified, which look very similar to branched streaks of a melanocytic lesion. The differential diagnosis is then extremely difficult. In thicker lesions, pseudofollicular openings and broad, blue-gray areas can occur. In our same analysis, features favoring lentigo maligna were dark, rhomboidal structures, slate-gray dots and globules, and asymmetric, pigmented, follicular openings forming an annular-granular pattern (Cognetta sign).

In lentigo maligna and lentigo maligna melanoma, the hypopigmented follicular openings are frequently surrounded by a rim of hyperpigmentation. When the follicles lie close together, a second pseudonetwork appears, which, in contrast to the location-dependent pseudonetwork that has broad mesh and holes, is characterized by a thin mesh and holes. Both of these networklike structures are seen only with a dermatoscope and are pseudonetworks because they are not due to pigmentation of rete ridges, but rather the openings of skin appendages superimposed on pigmented facial skin in one instance and the close association of hair follicles in the other. In both pseudonetworks, the central holes often exhibit hair follicles. These should not be confused with horny pseudocysts or pseudofollicular openings, which could lead to the misdiagnosis of seborrheic keratosis. On the other hand, in some initial

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**Table 1:** Diagnostic criteria for lentigo maligna (LM) and lentigo maligna melanoma (LMM) on the face

<table>
<thead>
<tr>
<th><strong>Primary Criteria</strong></th>
<th><strong>Secondary criteria</strong></th>
<th><strong>Pitfalls</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Annular-granular pattern</td>
<td>Absence of other criteria for flat seborrheic keratosis such as pseudofollicular openings, horn pseudocysts, moth-eaten or jelly-like border</td>
<td>Pigmented actinic keratosis may present also with an annular granular pattern</td>
</tr>
<tr>
<td>Slate-gray dots and globules</td>
<td></td>
<td>Benign lichenoid keratosis may display also slate-gray dots</td>
</tr>
<tr>
<td>Asymmetric pigmented follicular openings</td>
<td></td>
<td>Melasma may show also slate-gray dots and streaks</td>
</tr>
<tr>
<td>Absence of criteria for flat seborrheic keratosis, especially horn pseudocysts, yellow-opaque areas, and fingerprint-like structures</td>
<td></td>
<td>Hyperpigmented rim of follicular openings in LM and LMM should not be confused with pseudofollicular openings leading to diagnosis of seborrheic keratosis</td>
</tr>
</tbody>
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facial seborrheic keratoses, the presence of a pseudonetwork should not be confused with a normal pigment network, which might lead to the incorrect categorization of a melanocytic lesion. We have developed a progression model for lentigo maligna5 (Fig 1). Initially, one finds hyperpigmented, asymmetric, follicular openings, representing the uneven descent of malignant melanoma cells into individual hair follicles. Then short, fine streaks, dots, and globules appear around the follicles, producing the annular-granular pattern. In this early phase, the pigmented structures are mainly caused by melanin in macrophages, not by melanoma cells, although later both may be responsible for the color changes. Next, rhomboid areas appear as the streaks become longer and intersect. In contrast, the streaks in seborrheic keratosis are broader and associated with horn pseudocysts. As the hyperpigmentation coalesces, it may become homogeneous and blue-gray. Initially, follicular openings are respected, but eventually they are obliterated. In advanced lentigo maligna melanoma, white scarlike areas may be present. The hyperpigmentation of the edges of the opening of skin appendages and rhomboidal streaks seen in lentigo maligna or lentigo maligna melanoma are not present in these tumors. In superficial spreading malignant melanomas with rapid horizontal growth, the location-specific pseudonetwork may be destroyed.

Several lesions can simulate the early changes seen in lentigo maligna. Melanocytic nevi in adolescents may show slate-gray streaks and dots. Lichen planus-like keratosis, a form of irritated seborrheic keratosis, may also have gray streaks and dots. Pigmented actinic keratoses, the main site of melanin is macrophages in the upper dermis, just as in early lentigo maligna. The asymmetrically pigmented, follicular openings tend to be absent. There are several other clues to pigmented actinic keratoses, including the usual presence of multiple lesions (neighborhood sign) as well as their rough surface. Microscopically the distinction can be difficult, as sun-damaged skin may often have melanocytic atypia. Melasma is a common formation of facial hyperpigmentation. Dermatoscopic examination can reveal the usual granular pattern, but the clinical scenario usually makes the diagnosis straightforward. While all of these simulators and lentigo maligna may have slate-gray or dark-brown dots and streaks, the crucial finding of asymmetric, follicular openings is common in lentigo maligna and rare in the others.
References

Victorian Hot Water Bottle: A ceramic bed-warmer from Victorian England. From the collection of Lawrence Charles Parish, MD, Philadelphia, PA.