Clinical Appearance of Cutaneous Melanomas

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Brown and black spots are present on the skin of all people. Melanomas compromise only a very small percentage of all such pigmented lesions but are responsible for most of the deaths and illness caused by pigment cells. Three types of melanomas can be distinguished from their clinical, histologic, and biologic characteristics: lentigo maligna, superficial spreading melanoma, and nodular melanoma (1, 2). Melanomas of each variety exhibit distinguishing features that should alert the physician to the seriousness of the lesion. The single most important identifying characteristic of any melanoma is irregularity of color, shape, or topography.

IRREGULARITIES

Color

The presence of pigment (melanin) in a lesion indicates its origin is probably from melanocytes. A disorderly or haphazard distribution of the color suggests that the pigment comes from malignant cells (1, 2). Benign lesions are tan, brown, or brown-black. Malignant lesions have areas of blue-black, gray, white, or reddish brown scattered among the normal tan or brown melanin. Bluish-black coloring is an ominous sign and indicates melanin deposited by invading cells below the epidermis. Gray and white spots suggest spontaneous regression of pigment cells from some area of the lesion, another hallmark of malignancy. Frequently a distinctive reddish hue tints the brown melanin, indicative of either the vascular dilatation from the inflammation that accompanies melanomas and/or the high concentration of phaeomelanin found in melanomas. Phaeomelanin is the red pigment in the freckles and red hair of patients of Celtic origin. Variegated color is most frequently observed in lentigo maligna and superficial spreading melanoma. Nodular melanoma tends to have an evenly distributed black or blue-black color, although its base and border may show color irregularities.

Shape

The borders of melanomas may exhibit striking irregularities. Tiny feet or projections of spreading tumor cells may be present on one side of the lesion and indentation or notches of regression on the other. The irregular outline is especially common in lentigo maligna and superficial spreading melanoma. Benign pigmented lesions tend to be regularly irregular or have smooth curved borders.

Topography

The surface of a melanoma can range from perfectly flat (lentigo maligna) to an exophytic nodule (nodular melanoma). Frequently the surface is raised or papular.
on one side of the lesion but flat on the other. These latter tumors are either lentigo maligna melanomas or superficial spreading melanomas with dermal invasion. A verrucous surface is occasionally observed in superficial spreading melanoma.

CLINICAL CLASSIFICATION

Lentigo Maligna

Lentigo maligna (Fig. 1) develops almost exclusively in sun-exposed areas in elderly patients with a median age of 70 yr (3). The long-term prognosis is excellent because the lesion represents a melanoma in situ with the tumor cells confined above the epidermal basement membrane. Occasionally, the cells penetrate into the dermis, producing a dark nodule on the skin surface (lentigo maligna melanoma). The lesion begins as a faint tan macule that slowly enlarges. Some areas of the lesion turn dark brown or black, while others regress, leaving a gray or white macule within or at the edge of the lesion. The outline of the lesion is jagged and irregular from the haphazard advancing and regressing edges.

Superficial Spreading Melanoma

The superficial spreading melanomas (Fig. 2) can occur anywhere on the body, although they also have a predilection for the sun-exposed areas. Patients who have

FIG. 1. Lentigo maligna. There are dark brown areas interspaced with lighter and occasional depigmented areas. The border is flat and irregular.
this type of lesion tend to be younger, in their late fifties (3). The color of the tumors is typically variable. Combinations of tan, browns, blacks, blue-blacks, reddish-browns, or white spots in a disorderly array are common. The lesions tend to be circular with indentations or notches and spreading feet. In contradistinction to lentigo maligna, the surface is palpable and lumpy and the edges are raised. Occasionally the lesions acquire a peculiar scaly, verrucoid surface. Lesions with a verrucoid surface must be distinguished from pigmented seborrheic keratoses.

**Nodular Melanoma**

Nodular melanomas (Fig. 3) are distributed randomly over the body without special predilection for any given area. The median age of patients with this lesion is about 50 yr (3). Nodular melanomas carry the worst prognosis and are not advanced superficial spreading melanomas. From their inception nodular melanomas are rapidly invasive into the dermis and metastasize early. Therefore, they present the poorest prognosis. The color of the nodular melanoma tends to be a uniform black, blue-black, or brown-black. They may be almost amelanotic with small flecks of pigment seen at the periphery of the base. The base is often inflamed, irregular in outline with an advancing border. The surface is nodular as its name implies and may have an elevated plaque or an ulcerated nodule.
FIG. 3. Nodular melanoma. An amelanotic nodule with a raised edge. Flecks of pigment at the base are seen at upper edge of the lesion. The surrounding skin exhibits actinic damage.

PATIENT POPULATION

Anyone can develop a melanoma. The classical patient is a person with a Celtic inheritance manifested by blue eyes, red hair, and freckles. Most patients exhibit evidence of sun damage to the skin in the area of the melanoma. Occasionally, Blacks also form melanomas, but these usually arise in the oropharynx or from junctional nevi present on the sides of the palms or soles.

DIFFERENTIAL DIAGNOSIS

A great number of benign lesions must be differentiated from melanomas. These include junctional nevi, dermal nevi, blue nevi, and juvenile melanomas, seborrheic keratoses, pigmented basal cell epitheliomas, angiomas, and pyogenic granulomas. Juvenile melanomas are a benign hyperplasia of melanocytes that are most often found on the skin of children. They are not cancers and should not be radically excised.

The definitive diagnosis of melanoma is made only on histologic examination of a biopsy. In a series of 559 patients with pigmented lesions, only 2.1% of the suspected lesions were true melanomas (4). Other studies indicate that incisional or punch biopsies removed from melanomas do not increase the rate of metastases or decrease the cure rate from surgical excision (5, 6). Thus, biopsies are needed for proof of malignancy, but large disfiguring excisional biopsies are not indicated for the diagnosis of melanoma. Small incisional or punch biopsies that leave minimal scars are sufficient to provide the information for proper treatment of a pigmented lesion.
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