

## **DermPath Update**

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### **Lentigo Maligna and Lentigo Maligna Melanoma**

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Lentigo maligna occurs on sun exposed surfaces in the elderly, particularly the face. It is present in 3 per 1000 persons older than 50 years of age and accounts for approximately 4% of all cutaneous melanomas.<sup>1</sup> It begins as a pigmented freckle that slowly grows centrifugally, as a flat, variegated pigmented lesion for an average of 10-20 years. During this stage it is a non-invasive melanoma-in-situ. If persons live long enough an invasive lentigo maligna melanoma can be said to develop in possibly a third; however, the risk of progression may be substantially lower than is commonly believed.<sup>2</sup> Historically, lentigo maligna melanoma has been considered a "favorable" histological subtype.<sup>3</sup> However, in the more recent literature multivariate analyses would suggest that there is no significant difference in disease-free interval or survival by histological subtype.<sup>4,5</sup>

In 1969, Clark and Mihm<sup>3</sup> described and correlated the clinical and histological findings in lentigo maligna and lentigo maligna melanoma and differentiated lentigo maligna melanoma from superficial spreading melanoma and melanocytic nevi. Lentigo maligna is characterized histologically by a proliferation of normal and atypical melanocytes occurring singly and in nests in the basal layer, with little pagetoid invasion of the epidermis. There is often involvement of the superficial adnexal follicular and eccrine epithelium. The epidermis is usually atrophic and there is usually moderate to severe solar elastosis of the upper dermis. The abnormal melanocytes are characterized by large nuclei with increased nuclear to cytoplasmic ratios, prominent or multiple nucleoli and often have a fine gray melanotic cytoplasm. Some abnormal cells may be multinucleated. There is progressive accumulation of melanocytes disposed in cords and strips, with increased pigmentation of the lesion from flat tan areas to flat black areas. The presence of surface irregularity is frequently a sign of invasion and is associated with the accumulation of malignant melanocytes, inflammatory cells and melanophages in the dermis.

Lentigo maligna and lentigo maligna melanoma may present a variety of diagnostic and therapeutic challenges. Clinically, these lesions may resemble other pigmented lesions, such as a solar lentigo or a spreading actinic keratosis<sup>6</sup> and the separation from superficial spreading malignant melanoma is not

always clear cut. Rarely, lentigo maligna can be amelanotic<sup>7</sup> and mimic a dermatitis or Bowen's disease and borders of the lesion may be impossible to determine. Histologically, it may be difficult at times to define the lateral borders of the lesion since sun-damaged skin<sup>8</sup> has often an increased density of melanocytes and may have occasional atypical melanocytes in the basal cell layer. Keratinocyte atypia in actinic keratosis<sup>9</sup> may confound the histology even further since the two lesions often co-exist. Reactive lentiginous melanocytic hyperplasia may be found adjacent to melanoma or follow ablative therapy for primary melanotic neoplasms<sup>10</sup> and thus pose the diagnostic dilemma of reactive hyperplasia versus recurrence. Microinvasive foci may be difficult to see in hematoxylin and eosin stained sections even after multiple levels, since spindled melanocytes may resemble fibrohistiocytic cells and be obscured by inflammatory cells and heavily pigmented melanophages.<sup>4</sup> Several studies have illustrated the use of S100 protein and HMB45 immunohistochemical stains to help resolve the aforementioned histologic diagnostic problems.<sup>4,9,11,12</sup>

Lentigo maligna is an in situ malignant melanoma for which the treatment of choice is surgical excision.<sup>13</sup> The current recommendation is early complete conservative excision with 0.5 to 1.0 cm clear margins. We do not advocate the use of frozen sections for margin control. Some elderly patients with large lesions in the head and neck may not be suitable candidates for surgical excision. Radiation therapy<sup>14</sup> and cryosurgery<sup>15</sup> are alternative treatment modalities whose results compare favorably to excisional surgery.

**JFF**

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