Answer to Dermacase *continued from page 633*

3. Melanoma

Melanoma is a malignant tumour of melanocytes. The incidence of melanoma has been steadily increasing and now represents about 4% of all newly diagnosed cancers.[1] Melanoma is the most aggressive type of skin cancer, accounting for 1% of all deaths due to cancer. The prognosis of patients with melanoma is highly correlated with depth of invasion (Breslow thickness[2]), nodal status, and presence of distal metastases at the time of diagnosis.[3] Family physicians and patients are important in the diagnosis and follow-up management of melanoma.

Diagnosis

Several histologic subtypes of melanoma have been defined (**Table 1**). Diagnosis of melanoma relies on strong clinical suspicion and excision biopsy.[3] Investigation should start with a detailed history that includes a history of changes in the appearance of the suspect lesion and the patient's risk factors for melanoma. These include skin type, sunburns during childhood or intermittent burning due to exposure of unacclimatized skin to the sun, number (>50) and size (>5 mm) of melanocytic nevi, number of atypical nevi (>5), family and personal history of melanoma or dysplastic nevi, and immunosuppression.[1,3] The presence of melanoma risk factors should heighten clinical suspicion and should not change management of any suspect lesion.

Physical examination should include a total body examination, assessing patient's skin type and total number of nevi and their distribution. The ABCDE rule is particularly useful for differentiating early melanomas and dysplastic nevi from common benign nevi:

A—asymmetry;
B—border irregularity;
C—colour, mottled with a mixture of brown, black, gray, and pink;
D—diameter >6 mm (pencil eraser);
E—ulceration, enlargement (growth in size) and elevation.

A melanocytic lesion that is very different from the surrounding nevi should arouse suspicion of melanoma, regardless of specific findings.[3] All lymph-node groups should be examined once a diagnosis of melanoma has been established.

Any suspect lesion requires an excision biopsy with a margin of 1 to 2 mm for a definitive diagnosis.[4] It is important to include all skin layers and some subcutaneous fat for proper depth assessment. For large lesions and cosmetically sensitive areas, incision biopsy that includes the most darkly pigmented or raised area of the biopsied lesion is an acceptable alternative biopsy technique.[4] Examine lymph nodes before biopsy and document their size, mobility, and consistency.

Management

Once diagnosis of melanoma is confirmed, each patient should be referred to a dermatologist for skin examination and to an oncologist for evaluation of disease invasion and management. At the time of referral, several laboratory investigations could be considered: complete blood count with differential, and blood chemistry analysis, including alkaline phosphatase, alanine aminotransferase, aspartate aminotransferase, total protein, albumin, creatinine, and lactate dehydrogenase (one of the prognostic factors in melanoma staging).[3] Chest x-ray examination provides useful baseline information for patients with no nodal involvement. If systemic involvement is suspected or is very likely owing to extensive or recurrent disease, computed tomography scans of the chest, brain, abdomen, and pelvis might be useful.[3]

Definitive therapy for cutaneous melanoma is complete surgical excision. Complete surgical excision of the tumour should encompass margins as follows:

- in situ melanoma, 0.5 cm margin;

Table 1. Histologic subtypes of melanoma

TYPE OF MELANOMA	% OF ALL MELANOMAS	CLINICAL PRESENTATION	COMMON LOCATION
Superficial spreading	70	Flat-topped, elevated plaque with sharply demarcated and irregular margins coloured a mixture of brown, blue, black, and red with some gray regions in areas of tumour regression	Any sun-exposed area, most commonly the back and lower legs among women
Nodular	15	Uniformly elevated, smooth, dark blue, black, gray, pink-brown nodule with sharply defined regular borders	Any site
Lentigo maligna	5	Flat brown pigmented macules with focal areas of blue, black, and pink; papules or nodules with gray, blue, and hypopigmented areas and sharply defined irregular borders	Any sun-exposed area
Acral, subungual, and mucosal lentiginous	10	These lesions resemble lentigo maligna, but are usually smaller	Soles, palms, subungual area, mucous membranes

Adapted from Nestle and Kerl.[3]

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- lesions <1 mm in thickness, 1-cm margin;
- lesions 1 to 4 mm in thickness, 2-cm margin; and
- lesions >4 mm in thickness, 2- to 3-cm margin.[3,4]

Patients with melanoma at Breslow thickness 1 to 4 mm, nonpalpable lymph nodes, and no other metastatic disease can be referred for sentinel lymph-node biopsy.[3,4] Clinically positive nodes are usually managed with total resection of all lymph nodes in the area.[4]

Adjuvant medical therapy for melanoma is reserved for patients with metastatic disease or patients at high risk of metastatic disease with aggressive primary tumours.[3] Treatment includes traditional chemotherapy, biologic therapy, and radiotherapy to palliate metastases. Vaccine therapy, a promising new biotherapeutic modality, is still under investigation.[3] Unfortunately, no currently available therapeutic agent or combination therapy will notably improve survival in patients with metastatic disease.

It is highly recommended that all patients diagnosed with melanoma be followed up by dermatologists or oncologists, especially patients with melanomas at Breslow depth >1 mm and patients with nodal and other metastatic involvement. No evidence supports a specific follow-up interval, but patients should be seen 1 to 4 times yearly, depending on the thickness of the lesion and other risk factors, for 2 years after diagnosis and once or twice yearly thereafter.[5] Patients diagnosed with melanoma and their first-degree relatives are encouraged to take preventive measures, such as avoiding sun exposure and use of tanning booths and wearing protective clothing and sunscreen.[3] Annual skin examinations by dermatologists are highly recommended for all melanoma patients and their first-degree relatives.

Family physicians are strongly encouraged to be aggressive in diagnosing melanoma. Any suspicious-looking lesion should be biopsied.

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