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| <p>Melanocytic nevi can have a wide range of histologic appearances. Within the spectrum of nevi, there exists a group that presents in certain anatomic locations with histologically worrisome features but nonetheless benign behavior. This group of nevi has been broadly categorized as nevi of special sites. The anatomic locations affected by this group include the embryonic milkline (breast, axillae, umbilicus, genitalia), flexural areas, acral surfaces, ear, and scalp. Nevi in these locations may be mistaken for melanomas because of their histologic appearance, resulting in inappropriate overtreatment of patients. In this article, the authors review the histologic features of these special site nevi and discuss the criteria that help distinguish them from melanoma.</p> | |
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| <p>Patients with multiple dysplastic nevi have an increased risk for malignant melanoma, and dysplastic nevi themselves have at least some potential for malignant transformation. Development of malignant melanoma is uncommon within dysplastic nevi, however. Since this transformation occurs in other types of nevi, their role as a marker of increased risk for melanoma in the patients who bear them seems to be of greater significance. This article discusses the gross, clinical and microscopic features; diagnosis; and prognosis of dysplastic nevi. The key features and pitfalls of diagnosing malignant melanoma, congenital nevus, and recurrent nevus are given.</p> | |
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| <p>This article reviews congenital melanocytic nevi (CMN), which are present at birth or appear shortly thereafter, and their main histologic features. Several histologic variants and histopathologic criteria that differentiate CMN from other nevi, such as atypical or dysplastic nevi, and from nevoid malignant melanoma, are discussed. Histologic pitfalls in the correct identification of lentiginous melanocytic hyperplasia, pagetoid scatter,</p> | |

and proliferative nodules in the context of CMN are discussed. The risk for development of malignant melanoma in association with a congenital melanocytic nevus and variable causes for changing mole are discussed.

Acral Lentiginous Melanoma

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Melissa Peck Piliang

Acral lentiginous melanoma is an uncommon skin malignancy that occurs with equal frequency in all races and has a worse prognosis than other types of melanoma; it presents as dark, irregular macules, papules, or nodules on the feet and, less commonly, the hands. The histologic findings of acral lentiginous melanoma are characterized by an asymmetric, poorly circumscribed proliferation of continuous single melanocytes at the dermoepidermal junction. Single melanocytes predominate over nests. The tumor must be distinguished from benign acral lentiginous nevi, which can display site-related atypia.

Melanoma Margin Assessment

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Martin J. Trotter

Primary cutaneous melanoma is treated by excisional surgery and careful histologic assessment of the specimen margins is a crucial component of pathology reporting. Surgical margins may be assessed by conventional transverse (bread-loaf) vertical sections, by en face vertical sections, or by en face oblique sections. Transverse techniques only sample a small percentage of the surgical margin. En face techniques are technically challenging but allow assessment of close to 100% of the margin. Margin assessment for melanoma removed from chronically sun-damaged skin is difficult. Melanoma in situ shows contiguous melanocyte growth, nesting, or intraepidermal pagetoid spread. Pitfalls include solar melanocytic hyperplasia, solar lentigines, melanocytic hyperplasia secondary to previous biopsy, lichenoid reactions, and invasive melanoma mimicking scar or benign nevus. En face sections can be used to assess margins for melanoma on sun-damaged skin, and evidence suggests that frozen sections may also be employed by experienced clinicians. Immunohistochemistry is a useful ancillary technique, enabling more accurate identification of in situ melanoma within a surgical margin.

Sentinel Lymph Nodes in Cutaneous Melanoma

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Victor G. Prieto

Examination of sentinel lymph nodes (SLN) has probably become the most popular method of early staging of patients who have cutaneous melanoma because SLN are considered to be the lymph nodes most likely to contain metastatic deposits; they can be examined in a more intense manner than in standard lymphadenectomy. There are several protocols to examine SLN but most of them use formalin-fixed, paraffin-embedded sections stained with hematoxylin and eosin with the addition of immunohistochemistry. By using these protocols, approximately 20% of patients who have cutaneous melanoma have melanoma cells in the SLN. Current studies are evaluating the possible therapeutic value of removal of positive SLN, but it is accepted by most authors that

detection of positive SLN conveys an impaired prognosis for patients who have cutaneous melanoma.

Spitz Nevi, Atypical Spitzoid Neoplasms, and Spitzoid Melanoma

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Daniel C. Zedek and Timothy H. McCalmont

Spitz nevi and melanoma represent benign and malignant counterparts commonly coupled in the same differential diagnosis. The precise distinction between the two entities remains an ongoing challenge in dermatopathology and surgical pathology. In past years, considerable work has been devoted to the assembly of criteria to permit exact diagnosis. Although diagnostic accuracy has improved, many lesions remain challenging to classify based solely upon conventional microscopic criteria. In this article, the clinical and histopathological attributes of Spitz nevi and spitzoid melanoma are reviewed. Lesions that cannot be definitively classified based solely upon conventional microscopic criteria are referred to as atypical spitzoid neoplasms, which the authors view as a provisional diagnostic category rather than as a formal disease entity. Molecular assessment by way of comparative genomic hybridization or fluorescence in situ hybridization is increasingly used to facilitate assessment of this challenging differential and is especially germane to the evaluation of ambiguous lesions.

Desmoplastic Melanoma

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Klaus J. Busam

Desmoplastic melanoma (DM) is a variant of spindle cell melanoma characterized by the presence of abundant fibrous matrix. It is typically found in the head and neck region on chronically sun-damaged skin of older individuals. Early detection is uncommon, because its clinical features are not distinctive. DM is prone to misdiagnosis not only clinically but also histologically. It may simulate a sclerosing melanocytic nevus and various benign and malignant nonmelanocytic lesions. Among melanomas said to be desmoplastic by various pathologists there is significant variation with regard to the extent of intratumoral fibrosis. It may be prominent throughout the entire tumor (pure DM) or represent a portion of an otherwise nondesmoplastic melanoma (combined DM). Immunophenotypically, DM are usually strongly and homogeneously positive for S-100 protein, but are often negative or only focally positive for melanocyte differentiation antigens. DM differs from conventional melanoma in its clinical course. It is associated with a higher tendency for local recurrence, but metastases to regional lymph nodes are less common.

Molecular Aspects of Melanoma

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Philip D. Da Forno and Gerald S. Saldanha

Melanoma is the most serious type of skin cancer. Unfortunately, treatment has progressed little and advanced melanoma has appalling survival rates. A goal of molecular analysis is to fully describe the alterations that underpin melanoma's clinical phenotype so that diagnosis can be more accurate, outcome can be predicted with greater confidence, and treatment that is tailored to the patient can be given. This article describes

the handful of “signature” changes that are known to occur, describes how some recent studies have shed light on changes beyond this signature, and finally discusses the impact of molecular pathology for practicing histopathologists.

Blue Nevi and Related Tumors**345**

Pushkar A. Phadke and Artur Zembowicz

Blue nevi and related lesions are characterized by the proliferation of dermal dendritic melanocytes. Although they share certain common clinical and histologic features, they encompass a spectrum of lesions ranging from benign melanocytic hamartomas and common blue nevi to borderline malignant pigmented epithelioid melanocytoma and aggressive malignant blue nevi. This article succinctly describes the common dermal dendritic proliferations and updates readers on newly classified entities and variants. The differential diagnosis of the main entities and strategies to distinguish them from their melanocytic and nonmelanocytic mimics is also presented.

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