Atypical melanocytic lesions

Niamh Leonard

Abstract

Atypical melanocytic lesions are relatively common and can be difficult to diagnose with confidence. Dysplastic naevi were the first type to be described and have specific features. The pigmented lentiginous naevus with atypia was first described in 1991 but has only recently been more commonly recognized. In situ malignant change is described in a significant proportion of cases. Lesions from special sites may show atypical features, as can recurrent lesions, and the pathologist needs to be aware of the particular changes seen. Dermal nodules may arise in benign naevi and can be suspicious clinically. Combined naevi, mitotically active naevi and ancient naevi may show atypical features. The pathologist needs to document the atypical features seen and to be clear about the implications these features have on the diagnosis and treatment.

Keywords ancient naevus; atypical naevus; combined naevus; dermal nodules; dysplastic naevus; pigmented lentiginous naevus

Introduction

The correct diagnosis of melanocytic lesions can be difficult. In a study of 335 medicolegal cases, a false-negative diagnosis of a melanocytic lesion was the most common reason for filing a claim against a pathologist.[1] Whilst a significant proportion of melanocytic lesions can be definitely diagnosed as benign or malignant based on specific histopathological criteria, there is a group with intermediate features which can be hard to classify.

This article will discuss dysplastic naevi, pigmented lentiginous naevus with atypia, site-related atypia, recurrent lesions, dermal nodules and atypical features in otherwise unremarkable naevi. Atypical Spitz naevi and lesions in children are discussed elsewhere in this volume.

Dysplastic naevi

Dysplastic naevi were first described in the late 1970s as part of a familial disorder, and are risk markers and potential precursors of melanoma in these families.[2,3] It has since been recognized that they occur sporadically more often where their relative risk for malignancy is far less. From the point of view of the pathologist, the most important feature of dysplastic naevi is the need to accurately distinguish them from malignant melanomas.[4]

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There has been considerable debate about the entity and many names and different diagnostic criteria have been applied. The National Institute of Health required architectural disorder only for a naevus to be called dysplastic, resulting in a high percentage of dysplastic naevi.[5] However, many authors consider that cytological atypia is essential for the diagnosis as well as architectural features.

Dysplastic naevi are > 5 mm in diameter clinically or 4 mm on the slide.[5] Clinically they have an irregular border and irregular pigmentation. Dysplastic naevi have characteristic architectural and cytological features, all of which are required to make the diagnosis. Architecturally, most are compound, some are junctional and none is intradermal. There are junctional nests and solitary cells in a lentiginous pattern. The nests have a horizontal orientation with bridging of adjacent rete ridges, and are present at the sides of rete ridges as well as the usual site, the tips of rete ridges. There is rete ridge elongation with eosinophilic or lamellar fibrosis of the dermis and a dermal perivascular lymphohistiocytic inflammatory infiltrate. The inflammatory infiltrate should not be band-like. There is random cytological atypia. The nuclei are variable in size, shape and staining intensity (Figures 1–3).[4] Some authors grade the cytological atypia as mild, moderate or severe, but this is not universal practice. McKee recommends modest excision of incompletely excised dysplastic naevi showing moderate cytological atypia and a 5 mm margin of excision for dysplastic naevi with severe atypia.[6] Some authors report that the presence of a junctional 'shoulder' extending at least three rete ridges beyond the dermal component is a characteristic feature.[7] For lesions which have some, but not all, of the classical features of a dysplastic naevus, the report should detail the relevant features but explain that the lesion cannot be classified as a dysplastic naevus.

The distinction of dysplastic naevi from malignant melanoma is the most important. Dysplastic naevi do not have areas of pagetoid spread. It is important not to interpret overall upward ascent of atrophic melanocytes as pagetoid spread.[4] Dysplastic naevi do not have intradermal mitoses, atypical mitoses or any asymmetry.

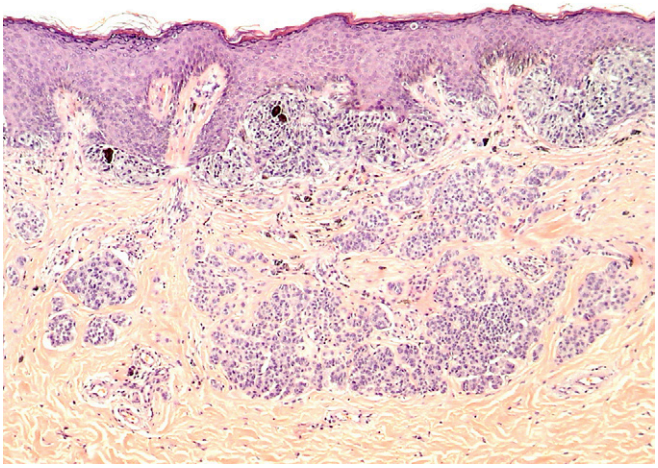

Figure 1 Dysplastic naevus with architectural atypia. There is elongation of rete ridges with bridging by nests of melanocytes. Nests of melanocytes are present at the sides of rete ridges.

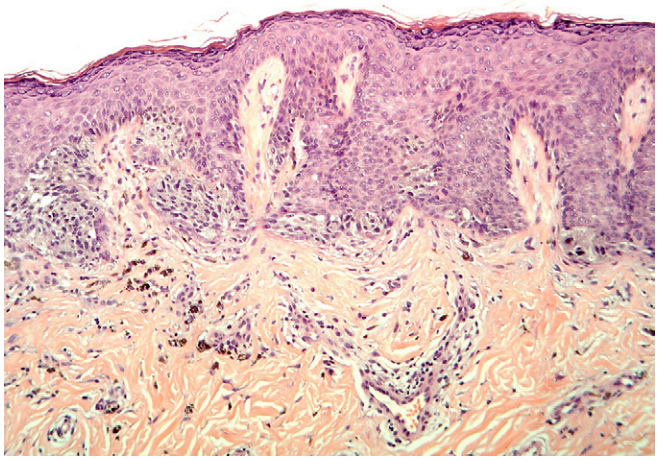

Figure 2 Lateral margin of a dysplastic naevus showing a significant junctional component.

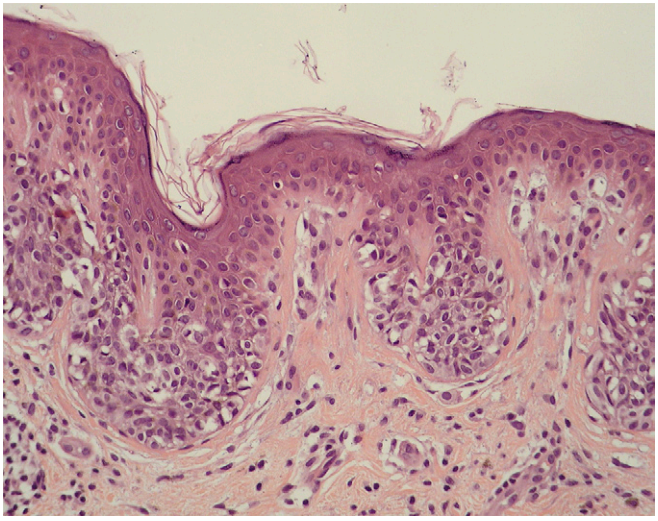

Figure 4 PLNA with elongation of rete ridges.

Pigmented lentiginous naevus with atypia

This lesion was first described as lentiginous dysplastic naevus of the elderly in 1991 by Kossard et al,[8] followed by a very detailed paper in 2002.[9] The same lesion has been called a 'pigmented lentiginous naevus with atypia (PLNA)' by Blessing.[10] PLNA typically occurs on sun-damaged skin in patients over 60 years. In contrast to lentigo malignas, which occur predominantly on the head and neck, PLNA occurs on the back in men and legs in women. It is usually < 5 mm in diameter and has uneven edges and pigmentation.

Pathological features include the presence of regular elongation of rete ridges with increased basal pigmentation. There are increased single melanocytes and nests (Figures 4 and 5). The nests occur at the tips of suprapapillary plates and may bridge adjacent rete ridges. There is atypia with fibrosis of the papillary dermis.[9] Twenty eight of Kossard's original 73 lesions (38%) had an in situ melanoma present,[9] so that PLNA is regarded as a potential precursor of malignancy. This means that a diagnosis of a PLNA on a punch biopsy cannot be regarded as a benign diagnosis and that examination of the whole lesion is necessary.

In situ melanoma developing in a PLNA is characterized by loss of rete ridges with confluent melanocyte proliferation and epidermal atrophy. The melanocytes develop more atypia and there may be upward drift, although pagetoid spread is not a dominant pattern.[9] The presence of fibrosis, pigment-laden melanocytes and lichenoid inflammation should be regarded as suspicious of recent change (Figure 6). Invasive melanomas arising from PLNA are more likely to be of small cell type.[9]

Site-related atypia

Naevi from certain anatomical sites can show atypical features which can be a cause for concern diagnostically and have the possibility of being overcalled as dysplastic naevi or malignant melanomas. Naevi from the genital area and acral parts were the first to be characterized. Wallace Clark described atypical melanocytic naevi of the genital type (AMNGT) in 1998.[11]

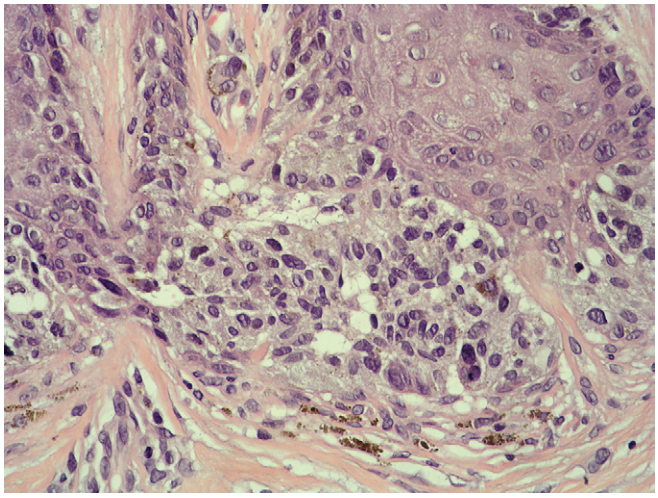

Figure 3 High power view showing random cytological atypia of melanocytes.

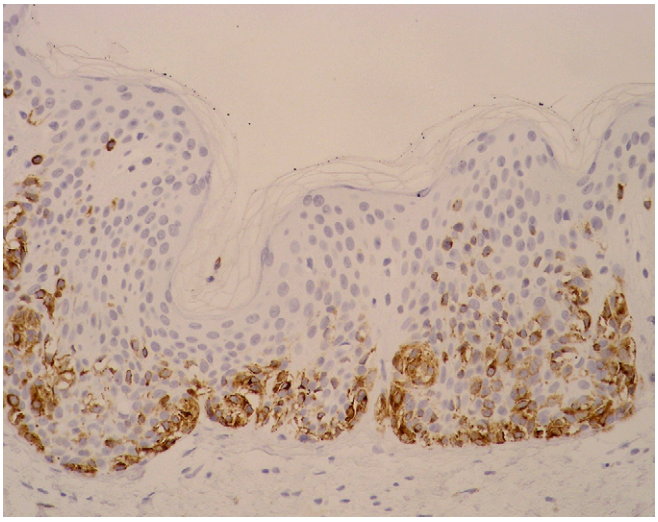

Figure 5 Melan A staining of a PLNA showing increased single melanocytes along the dermo-epidermal junction.