Case 4 : A Man with Dysplastic Naevus

by Dr. K.H. Mak

Date:	11 March 1998
Venue:	Yaumatei Skin Center
Organizer:	Social Hygiene Service, DH; Clinico-pathological Seminar

CASE SUMMARY

History

The patient was a 36-year-old South African white man who was active in outdoor sports. He gave a history of basal cell carcinoma (BCC) on his right shoulder with excision done in South Africa in 1989. In October 1997, three more BCCs were found on the chest, right shoulder and right shin with excision in the Social Hygiene Clinic. He also had multiple solar keratoses on the upper trunk treated with topical 5-fluorouracil.

In January 1998, he complained of increasing size and pigmentation of an abdominal mole.

Family history

His father had solar keratosis. Otherwise, there was no family history of dysplastic nevus or any kind of skin malignancy.

Physical examination

Three brownish macules with slight irregular border, mamillated surface and uneven coloration were found on the abdomen (Figure 1). The largest one with a diameter of 6mm was located periumbilically. He also had a large number of lentigines scatterred over the upper trunk, and a few melanocytic nevi were found on the abdomen and lower back.

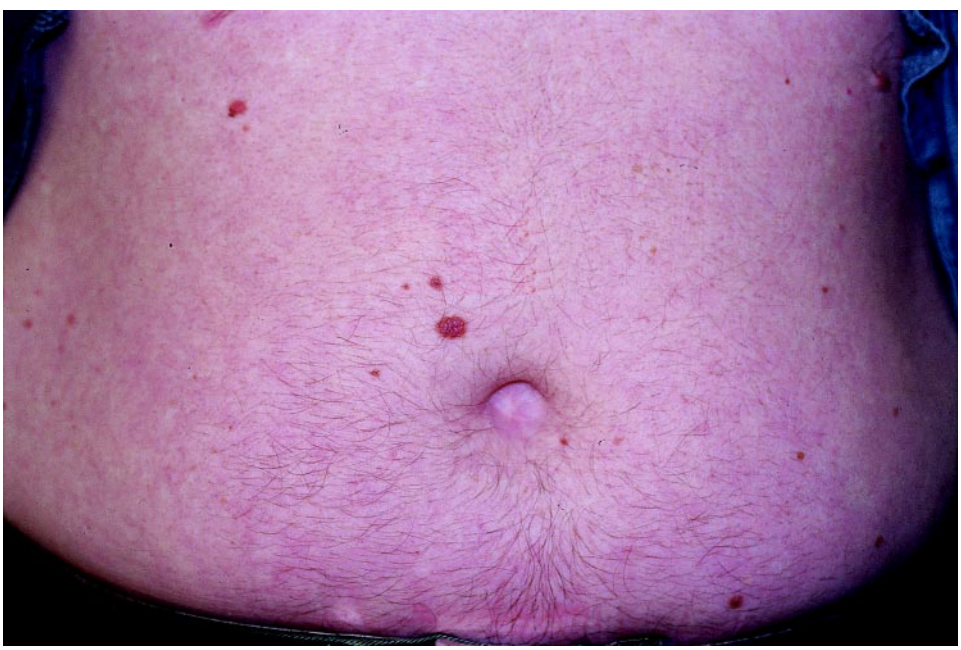

Figure 1: Dysplastic naevi on the abdomen

Differential diagnoses

The possible diagnoses including atypical mole (dysplastic naevus), superficial spreading melanoma and acquired melanocytic naevus were considered.

Investigations

Multiple sections in the biopsy showed slightly raised skin lesion with symmetric proliferation of naevus cells both intraepidermally and in the superficial dermis. There was elongation of epidermal rete ridges.

Lentiginous proliferation of melanocytes was observed. These cells demonstrated random mild cytological atypia. with enlarged nuclei and prominent nucleoli. Some of them have lain parallel to the epidermis and formed bridges between retia. Eosinophilic fibroplasia was present in the dermo-epidermal junction. There was no mitosis seen. The features were consistent with dysplastic naevus.

Management

The patient was advised to have sun avoidance and to carry out self-examination for the remaining atypical moles. He was followed up regularly, also because of the presence of multiple solar keratoses and history of reccurent basal cell carcinomas. The solar keratoses respond well to topical 5-fluorouracil.

Discussion

The dermatopathologist pointed out that whether cytologic atypia should be included was the key debatable issue in the histologic diagnosis of DN. Cytologic atypia makes it difficult to differentiate DN from other situations including melanoma in situ. This explains why there is such a wide range of prevalence figures in different studies. Some pathologists consider lentiginous melanocytic hyperplasia as the only major diagnostic finding and thus they prefer the term "naevus with architectural disorder".

REVIEW ON DYSPLASTIC NAEVUS (ATYPICAL MOLE)

Dysplastic naevus (DN) is an acquired melanocytic naevus with disordered proliferations of variably atypical melanocytes, which also differs clinically from common acquired naevus. There are several forms, both familial and non-familial. Group A represents the truly sporadic DN, without melanoma or dysplastic naevi in the family. Group B is familial DN without melanoma. Group C is DN with personal history of melanoma. Group D is familial melanoma and DN which is further classified into D1 and D2. D1 represents familial DN with one blood relative with melanoma. D2 represents familial DN with at least two blood relatives with melanoma.[1]

Prevalence

Dysplastic naevus is not uncommon in the white population. The prevalence of sporadic DN has been estimated to range from 1.8-17% of populations in different studies.[2] It occurs in 70% of patients with familial cutaneous melanoma and in 30-50% of patients with sporadic cases of melanoma.[3]

Terminology- a matter of dispute

In 1992, the committee of National Institute of Health consensus meeting recommended the term "dysplastic naevus" to be replaced by "atypical mole" (a diagnosis made on clinical basis) because there is lack of agreement on defining the histologic features of "dysplastic" naevus.[4]

Other synonyms include B-K mole, Clark's naevus, and naevus with architectural disorder.

Clinical features

It is a melanocytic overgrowth with variegated colors of tan, brown, pink or red and irregular borders. The size varies from 5-10mm or larger, predominantly located on the trunk, arms and legs, rarely on the face. There may be a central papular component surrounded by a 'halo' of brown, or mamillated surface.

Atypical mole syndrome[5,6]

The minimal inclusion criteria for this condition is not well defined. The definition of classic atypical mole syndrome (AMS) also varies in different studies. Generally speaking it gives the triad of: 1) many (>100) naevocytic naevi; 2) some large naevocytic naevi (with at least one naevus>8mm); 3) presence of atypical mole (at least one). Some people suggest that the unusual distribution of naevi, for example, on the buttocks and foot dorsum, scalp and iris, is also indicative of AMS.

This syndrome is diagnosed solely on clinical basis. Its presence indicates a fifty fold increase risk in developing cutaneous melanoma. There are approximately 32,000 persons in U.S.A having familial AMS.[7]

Pathogensis

Genetic studies show possibly the same trait link between the familial melanoma and familial DN. Multiple loci of the putative genes have been found in patients including chromosome 1p36, 9p21 and 12q14.8 All the findings need confirmation in independent studies. It is still uncertain about the mode of inheritance, whether it is autosomal dominant or polygeneic.

Studies have demonstrated the deficient repair of radiation-induced DNA damage in these patients.[9] Therefore, solar irradiation seems to play the role in phenotypic expression of DN. However, the lesion can also be found in sun-protected area such as the buttocks but rarely on the chronically sun-exposed area such as the face. Perhaps, as in melanoma, the intermittent bursts of recreational sun exposure impose a greater harm. Because of the presence of large number of melanocytic naevi in covered skin, a solar-induced circulating factor is suggested to be present in the genetically-predisposed individual.[10]

Pathology

There is no consensus on the histological diagnostic criteria to enable fair concordance amongst different dermatopathologists in making the diagnosis of DN. Besides the rather non-specific "dysplastic" features can also be present in the growing naevi of children and pregnant women, so clinical correlation must be made.[11]

The major features are lentiginous melanocytic hyperplasia, sometimes associated with elongation of rete ridges and random cytologic atypia. Other features include lamellar fibroplasia, accentuated vasculature of the underlying dermis and sparse or dense lymphocytic infiltrate.[2]

Significance

Dysplastic naevus serves as a risk indicator of developing cutaneous melanoma. Individuals with sporadic DN (Group A) has only a slight increase in risk when compared with the general population and the risk seems to be directly proportional to the number of DN. However, patients with familial melanoma and DN (group D2) have a lifetime risk of 100%. Besides, the latter group carries a higher risk of developing uveal melanoma. However, one should be reminded that the risk also correlates with the total naevus count (including the common naevi), but not the morphologic feature of an individual DN.[7]

It is still controversial as to whether dysplastic naevi are potential precursors of melanoma. The existence of atypical naevi seen histologically in cases of melanoma has been estimated to range from less than 1% to 83%. The high prevalence is likely a consequence of over-interpretation of melanocytic proliferation at the edge of melanoma as representing residual dysplastic naevus. Another opposing view is that most melanomas arise de-novo from normal skin, and most dysplastic naevus is found to be relatively stable clinically once developed.[7]

Treatment plan[1,7]

The patient should have sun protection. Family members (first degree relatives) should be screened to rule out familial condition. Patients should receive adequate information about the features of malignant transformation so as to carry out useful self-examination. Annual follow-up for patients with sporadic DN is generally believed to be sufficient. In patients with familial melanoma and DN or the familial atypical mole syndrome, follow-up at up to 4-monthly intervals is necessary. Lesions which should be excised include those with changing morphology or located at sites difficult to be self-examined e.g. the upper back, scalp and the genitalia. Regional photography is a useful recording tool for comparison. In high risk group, referral to ophthalmologist for examination is recommended.

Learning points:

Atypical mole is the clinical counterpart for dysplastic naevus which has uncertain malignant potential. Sun protection, regular self examination and follow up for change is warranted especially for those with past or family history of melanoma.

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