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CLINICOPATHOLOGICAL STUDY OF MELANOCYTIC TUMORS OF SKIN

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ABSTRACT

Acquired melanocytic naevi are believed to have been developed from epidermal melanocytes that completed their migration from the neural crest to the dermo-epidermal junction. Uncommon in infancy, naevi increase in frequency during childhood and adolescence and then more slowly to a plateau in middle age. During old age, their prevalence falls. Solar ultraviolet radiation exposure itself has been implicated in both the genesis of new nevi in children and the disappearance of nevi in older adult life. The role of benign melanocytic lesions as precursors and not only as risk markers for the development of cutaneous melanoma is controversial. Nevi are the most important simulants of melanoma, both clinically and histologically, and can usually be reliably distinguished from melanomas. This study is a clinicopathologic analysis of 27 cases of melanocytic tumors

KEY WORDS : Melanocytic nevus, blue nevus, Melanoma, ultraviolet radiation, precursor lesions.

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INTRODUCTION

Melanoma is an increasingly common malignancy, sun sensitivity, family history of melanoma, and melanocytic nevi. Sunburn and intermittent sun exposure appear to increase the risk of developing melanoma. The ABCDs--asymmetry, border, colour, and diameter--can be used as a guide to differentiate melanoma from benign lesions [1]. Suspicious pigmented lesions should undergo full thickness biopsy. Individuals at high risk of cutaneous melanoma can be identified by the use of simple measures of benign melanocytic naevi--raised risk occurring in persons who have large numbers of naevi, or naevi with atypical clinical features [2].

MATERIALS AND METHODS

We have reviewed the clinical records of patients from the Department of pathology, Govt Kilpauk medical college who were diagnosed with skin tumours by histopathology for a period of three years. All biopsies were taken from grossly characteristic areas. Multiple biopsies were advised when lesions present in differing forms and stages Each specimen was given a number, detailed clinical history like age, sex, occupation, family history, presentation and history of sun exposure, history of previous therapy, and other investigation details were noted for analysis Macroscopic gross details of the specimen were noted down and bits were taken respectively. Inking of margins was done whenever necessary to know the extent of infiltration of the lesion. Sections were made from paraffin embedded specimen and stained with Hematoxylin and Eosin routinely. Special stains were done as and when necessary.

RESULTS

There were 27 Melanocytic tumours, which constituted 13.5 percent of total neoplasms in skin. Common acquired melanocytic nevus comprised of 74 % of the melanocytic lesions. 2.2 percent lesions were malignant. (table1)

TABLE1
Melanocytic tumors in the study

Melanocytic tumor	Number	Percent
Common acquired nevus	20	74.07
Blue cellular nevus	1	3.7
Malignant melanoma	6	22.23
Total	27	100

Age distribution of melanocytic tumors is given in the table2. Melanoma is seen in above fifty years of age and benign melanocytic tumors are common in less than twenty years of age.

TABLE2
Age distribution of melanocytic tumors

Age distribution	Number	Percentage
0-20	14	52%
21-40	2	7%
41-60	7	26%
>60	4	15%

The site distribution of melanocytic tumors is given in table 3. Common melanocytic nevus is common in face in the form of pigmented macule or papule. It also shows female predominance

TABLE 3
Site distribution of melanocytic tumors

Site of tumor	Number	Percentage
Face	1	3%
Scalp	16	60%
Trunk	1	3%
Extremities	9	34%
Total	27	

3.70 % of cases were blue nevus. It was noted in the hand in the form of nodular lesion. Malignant melanoma was observed in extremities as nodular or warty symptomatic lesions . There was equal sex distribution with regard to Melanoma. Two of six cases had metastases in inguinal node Excessive sunlight exposure of more than six hours per day was noted in 67% of Malignant melanoma cases and only in 14% of cases with melanocytic nevus

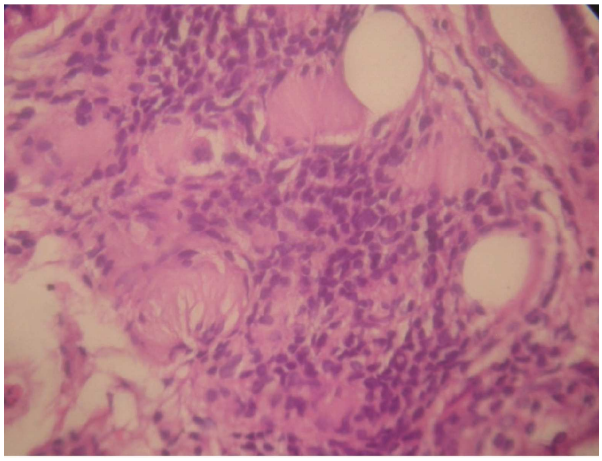
DISCUSSION

Melanocytic lesions
Melanocytic proliferations are composed of one or more of three types of cells; Melanocytes, Nevus cells and Melanoma cells. Each of which may be located in the epidermis or dermis. Benign melanocytic tumours include various types of nevi Most of the benign pigmented lesions were asymptomatic and were not excised [3]. They were usually biopsied for cosmetic reasons and fear of melanoma. Benign melanocytic lesions included in the study were common acquired melanocytic nevi, intradermal nevi, juntional nevi and blue nevi. Solar ultraviolet radiation exposure itself has been implicated in both the genesis of new nevi in children and the disappearance of nevi in older adult life.
[4, 9]

Common melanocytic nevus
Numerous variants of melanocytic naevi have been described. Their main pathological significance lies in their distinction from melanoma, as well as being precursors and risk markers for melanoma [5] 20 cases of melanocytic nevi were observed in the study, which constituted 70.7% of total melanocytic lesions. They have a varied presentation. 6 of them showed Plaque like presentation, 10 showed macules, 3 showed warty lesions and one was a pedunculated lesion. Histologically, these lesions showed proliferation of nevus cells in the form of nest and are classified according to location of nevus cells in relation to major epidermal landmarks. It is called as Junctional nevus if melanocytic proliferation is restricted to basal layer of epidermis.[6] In intradermal nevus, all melanocytes were in dermis. In 2 of the 20 cases (10%) of intradermal nevus observed in the study, nevus cells appeared spindle shaped, arranged in bundles, embedded in collagenous fibres forming neuroid tubes. This forms Neurotised nevus.

Neurotisation
is the tendency of melanocytes to adapt some of the phenotypic characteristics of Schwann cells, a spindle shaped elaboration of basement membrane material, and formation of structures called Pseudomeissnerian corpuscles(Figure 1). Features of peripheral nerve sheath differentiation such as neuroid cords, nerve corpuscles, fascicle-like structures, and, exceptionally, palisading have been reported in melanocytic nevi [7]

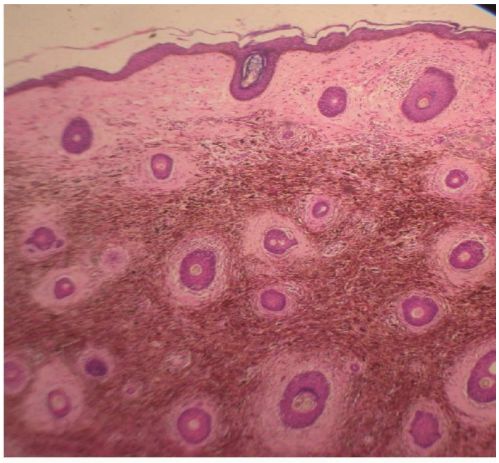
Figure 1
Neurotisation of Nevus



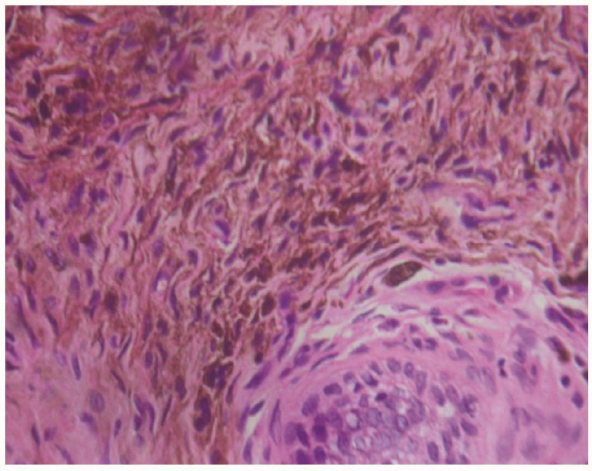
Common Blue nevus

One case of common blue nevus observed in the study was located in forearm. Microscopically, Common Blue nevi were characterized by dermal proliferation of elongated, dendritic melanocytes (Figure 2). Junctional activity was absent. Common Blue Nevus resembles Nevus of Ota and Nevus of Ito, due to the presence of bipolar melanocytes [8]. It was distinguished from them by the presence of sclerosis and dermal melanophages. It was distinguished from Dermatofibroma by the absence of hyperplasticepidermis.

Figure 2
Proliferation of heavily pigmented dendritic melanocytes



Blue cellular nervus 10 X 10x H & E

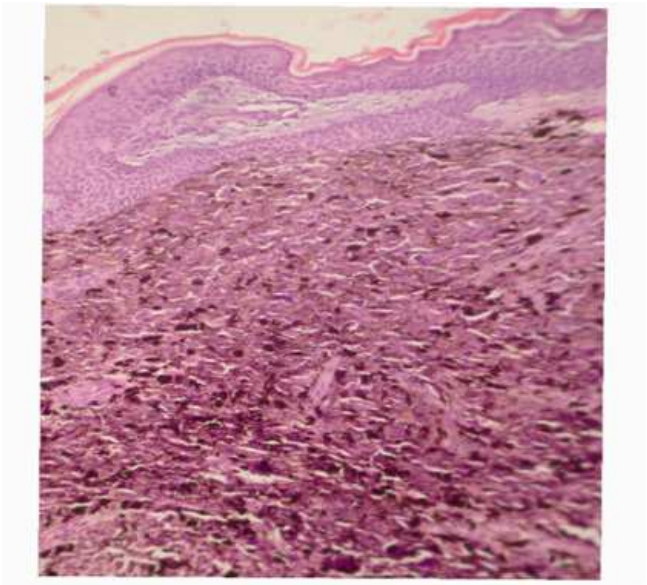


Blue cellular nevus 10 X 40x H & E

Malignant melanoma

There were 6 case of Malignant melanoma observed in the study. All were nodular lesions, except for one, which was superficial spreading melanoma and was clinically thought as nevus prior to biopsy. Microscopically, all were characterized by prominent melanin pigmentation, junctional activity, invasion into surrounding tissue, marked cytologic atypia, nuclear grooves and inclusions, eosinophilic nucleoli and abundant mitosis. (Figure 3)

Figure 3
Malignant melanocytes with uniform cytologic atypia



Malignant melanoma 10 X 10x H & E

Level of invasion, depth of tumor thickness, tumor associated lymphocytes and number of mitosis were assessed for prognastification of tumours.

Clark system was used for assessing level of invasion.

i. Intraepidermal
ii. In the papillary dermis
iii. Filling the papillary dermis and stopping at the interphase between papillary and reticular dermis
iv. In the reticular dermis
v. In the subcutaneous fat

One of the six cases was in Clark's stage I , 3 were in stage III, one was in stage IV and one in stage V.

CONCLUSION

Nevi may also be important as potential precursors of melanoma; however, most nevi are stable and will not progress to malignancy. Nevi are vastly more common than melanomas and the rate of progression of individual lesions is very low. Therefore, nevi are not as a rule managed by excision to prevent melanoma. Nevi are also important as risk markers, identifying individuals at greater risk of developing melanoma in the future.

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