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A DESCRIPTIVE STUDY ON CLINICOHISTOPATHOLOGICAL SPECTRUM OF CUTANEOUS MELANOCYTIC LESIONS AT SMS HOSPITAL, JAIPUR DURING 2022

Pathology

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ABSTRACT

Background and Objectives- Melanocytes are derived from stem cell in the neural crest that normally migrate to the epidermis, where they are scattered along the basal layer. Proliferation of melanocytes may result in melanocytic lesions ranging from benign freckles and nevi (mole) to malignant melanoma. The diagnosis of melanocytic tumor is one of the most problematic areas in dermatology and diagnostic pathology. Early recognition and correct diagnosis of melanoma is however, challenging due to the wide morphological spectrum. The purpose of this study is to evaluate the clinicopathological spectrum of cutaneous melanocytic lesions. **Methods-** 63 biopsy specimens of clinically diagnosed cutaneous melanocytic lesios were reviewed histologically in the Department of Pathology at SMS Medical College, Jaipur (Rajasthan) . **Results-**In this study benign lesions 42(66.3 %) were more than malignant lesions 21 (33.7%). Among benign lesions most common was intradermal nevus 26 (41.3%) with female preponderance. In malignant lesions most common was conventional melanoma 13 cases with male preponderance .Most common site for benign were forearm ,trunk , face and for malignant was foot. In wide local excised specimens most common Clark's level of invasion was III. **Conclusion and Interpretation-** In this study 85.7 % clinically diagnosed cases well correlated with histopathological diagnosis while 14.3% histopathological diagnosis had varied clinical presentation. The spectrum of various cutaneous melanocytic lesions in relation with different parameters is well documented. This study will facilitate pathological reporting and aid clinicians to make focused investigation and plan appropriate treatment.

KEYWORDS

Clinicohistopathological spectrum , Benign , Malignant, Cutaneous melanocytic lesions

INTRODUCTION

Melanocytes are derived from stem cells in the neural crest that normally migrate to the epidermis, where they are scattered along the basal layer. Melanocytic proliferation are composed of one or more of three related types of cells. Melanocytes, nevus cells or melanoma cells. Each of which may be located in the epidermis or in the dermis. Melanocytes are solitary, dendritic cells with small regular nucleus. Nevus cells are rounded or spindle shaped cells arranged in clusters with small regular nucleus. Melanoma cells are rounded or spindle shaped arranged in clusters and sheets with large irregular hyperchromatic nucleus.[1]

Proliferation of melanocytes may result in melanocytic lesions ranging from benign freckles and nevi (mole) to malignant melanoma.(2) Melanocytic lesions are amongst the most common skin lesion. These lesions show great morphological diversity in their architecture and the cytomorphological appearance of their composite cell. They are of importance primarily because of malignant melanoma, which is the single most common potentially lethal neoplasm of skin.[1]

Benign melanocytic lesions like nevi are extremely common and great majority are benign with little if any malignant potential.(3) Historically benign melanocytic lesions are subdivided into freckles and different types of nevi like intradermal nevi compound nevus, blue nevus, spitz nevus and junctional nevus.

The diagnosis of melanocytic tumor is one of the most problematic areas in dermatology and diagnostic pathology. Early recognition and correct diagnosis of melanoma is however, challenging due to the wide morphological spectrum.

Historically malignant melanoma are subdivided into acral lentiginous, superficial spreading and nodular lentigo[4]

AIM AND OBJECTIVE

To study the clinicohistopathological spectrum of various types of cutaneous melanocytic lesions. Staging of melanoma according to AJCC 8th classification system in radical resections specimen.

METHODS AND MATERIAL

This observational type of cross sectional study was carried out in the Pathology department, S.M.S. Medical College, Jaipur, during the period of 2021-2022. Approval was taken from ethical review board and institutional review board. A total of 63 cases of all ages and both genders who were suspected and clinically diagnosed with cutaneous melanocytic lesions were included. Extracutaneous cases were excluded.

The samples were analysed for morphology on H&E stain. This included samples of skin biopsy and wide local excised specimen which sent in 10% formalin in the department.

RESULTS

A total of 63 patients were included in the study. Out of 63 patients, 22 (35%) were males & rest 41 (65%) were females. Maximum number of patients were in the age groups of more than 60 years 13 (20.6%) followed by 12 (19%) in the age group of 21-30 years, 11 (17.5%) in the age group of 11-20 years, 10 (15.9%) in the age group of 31-40 years, 9 (14.3%) in the age group of 41-50 years, 4 (6.3%) in the age group of 0-10 years and 4 (6.3%) in the age group of 51-60 years. Among them, 23(36%) were skin punch biopsy, 35(56%) were excisional biopsy and 5(8%) were wide local excision. Out of 63 cases,26 were intradermal nevus with female preponderance followed by 13 were conventional melanoma with male preponderance. Most common site for benign lesions was forearm and for malignant was foot. As per the distribution of cases 42 (66.7%) were benign and 21 (33.3%) were malignant.

Among cases, Age group 0-30 shows all benign lesion. Age 31-40 group had 30%, age 41-50 group had 66.7% and group 51-60 had 75% malignant lesion. Age>60 had almost 69.2 % of malignant lesion.

Table 1 : Distribution Of Cutaneous Melanocytic Lesion In Different Age Group.

Age group	Benign		Malignant	
0-10	4	100%	0	0%
11-20	11	100%	0	0%

21-30	12	100%	0	0%
31-40	7	70%	3	30%
41-50	3	33.3%	6	66.7%
51-60	1	25%	3	75%
>60	4	30.8%	9	69.2%
Total				

In our study 85.7 % clinically diagnosed cases well correlated with histopathological diagnosis while 14.3% histopathological diagnosis had varied clinical presentation.

Table 2 : Concordance Of Histopathological And Clinical Diagnosis

Clinical Diagnosis	Histo Pathological Diagnosis	Clinical diagnosis	Concor-dance	Disconcor-dance	Concor-dance index
Intradermal nevus	26	22	22	4	84.6%
Blue nevus	4	2	2	2	50
Becker's nevus	2	1	1	1	50
Congenital nevus	3	4	3	-1	100
Junctional nevus	2	0	0	2	0
Nevus ITO	1	1	1	0	100
Conjuctival Nevus	1	1	1	0	100
Halo Nevus	2	2	2	0	100
Melanoma	21	21	21	0	100
Acral Lentigenous nevus	1	0	0	1	0
Total		63	54	9	85.7%

According to histology, among 21 cases of melanoma , 16 were tumorigenic and 5 were nontumorigenic.

Table 3 : Different Types Of Nontumorigenic Melanoma

Total	Acral lentiginous melanoma	Superficial spreading melanoma	Lentigo maligna	Mucosal lentiginous melanoma
5	4	1	0	0

Table 4 : Different Types Of Tumorigenic Melanoma

Total	Nodular	Conventional
16	3	13

In present study , out of 5 cases of conventional melanoma , 2 cases showed Clark's level III invasion, 0.8 mm Breslow's thickness, brisk tumour infiltrating lymphocytes, 0-1 / 10 hpf mitotic rate with focal ulceration and no lymphovascular invasion and satellite nodules seen. One case shows Clark's level of III invasion, 1 cm of Breslow's thickness, nonbrisk tumour infiltrating lymphocytes , 0-1/10 hpf mitotic rate with presence of satellite nodule. Ulceration and lymphovascular invasion were not seen. One case shows Clark's level of V invasion, 2 cm of Breslow's thickness with brisk tumour infiltrating lymphocytes were seen .Mitosis , ulceration and satellite nodule were not seen. One case shows Clark's level of IV invasion , 1.2 cm of Breslow's thickness , brisk tumour infiltrating lymphocytes , 4-5 / 10 hpf mitotic rate with focal ulceration, satellite nodule and lymphovascular invasion seen.

Table 5 : Staging Of Melanoma With Different Prognostic Attributes In Case Of Wide Local Excised Specimen Of Tumorigenic Melanoma

S. No.	Histo-genesis	Clarks level	Bre-slow's thickness	TIL	Mito-ses	Ulcera-tion	Lympho vascular invasion	Satel-lite
1	Conven-tional melanoma	III	0.8mm	Brisk	0-1/ 10hpf	Focal	No	No
2	Conven-tional melanoma	III	0.8mm	Brisk	0-1/ 10hpf	Focal	No	No
3	Conven-tional melanoma	III	1cm	Non brisk	0-1/ 10hpf	No	No	Seen
4	Conven-tional melanoma	V	2cm	Brisk	No	No	No	No
5	Conven-tional melanoma	IV	1.2cm	Brisk	4-5/ 10hpf	Focal	Seen	Seen

DISCUSSION

Melanocytic lesions have a wide spectrum of tumour ranging from small macule to congenital or acquired melanocytic nevi to malignant melanoma. Hence an accurate histopathological diagnosis of these lesions is an important area in dermatopathology. The present study comprised biopsy of 63 cases with suspected or clinically diagnosed melanocytic lesions in department of pathology, SMS medical college Jaipur between time period of April 2021 to March 2022.

Our study concluded that benign lesions were more prevalent as compared to their malignant counterparts with a benign- malignant ratio of 2:1, similar to some other international studies[3,5] and benign lesions were more common in the population falling in 21-30 years age group. Similar age group were found in other studies in different part of world.[9,10]

Malignant lesions were more prevalent in the geratric age group(more than 60years).This result were consistent with the previous studies.[12,13]

In our study females are more commonly affected with male to female ratio of 1:2.8 .This result of gender similarities were observed in many of the previously done studies.[5,9,10] Intradermal Nevus was found to be the most common benign entity. Analogous results were obtained in the studies done in different part of world[1,3,9,10,11] Our study found Conventional Melanoma to be the most common tumorigenic melanoma and this similar result found in different studies done in different part of world.[7,8]

In this study most common Clark's level of invasion was III which were consistent with previous studies.[6,7,8]

CONCLUSION

To overcome the clinical confusion, recognition of these commonly encountered cutaneous problems, familiarity of clinical presentation and the diagnosis confirmed with the histopathology which is the gold standard are important. Some of the histopathological features are specific and characteristic for each entity while few disorders may show some overlap. In these circumstances an attempt at clinico-histopathological correlation serves as an ideal approach. In our study 85.7 % clinically diagnosed cases well correlated with histopathological diagnosis while 14.3% histopathological diagnosis had varied clinical presentation.

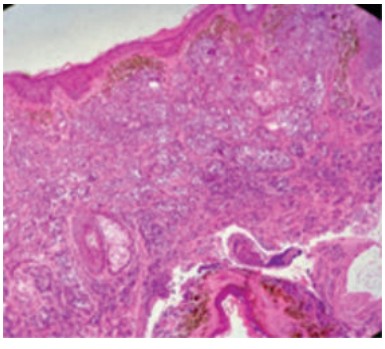

Fig.1: H&E Of Intradermal Nevus

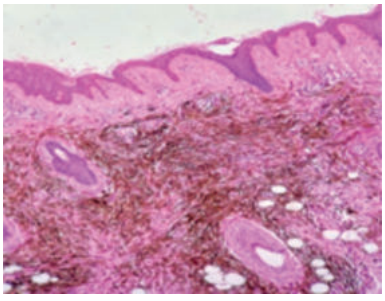

Fig.2: H&E Of Blue Nevus

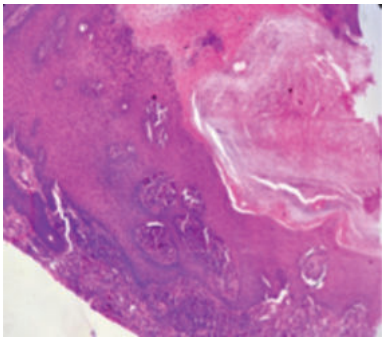

Fig.3 : H&E Of Acral Lentiginous Melanoma

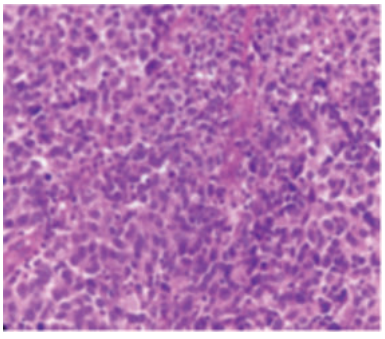

Fig.4:H&E Of Conventional Melanoma

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