

A Study of Histopathological Spectrum of Melanocytic Tumors of the Skin

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Abstract

Background: Skin cancer represents most common form of the malignancy in the world. Melanocytic lesions are particularly important because of malignant melanoma, which is the potentially lethal malignancy of the skin. Nevi are common melanocytic lesions which rarely turn into malignancy. If any person has more than 50 common nevi, then he will have increased chance of developing malignant melanoma. Melanocytes are neural crest-derived cells. Their function is to produce an insoluble pigment known as melanin.

Material and Methods: Record based retrospective study conducted in the Department of Pathology.

Results: Out of total 34 cases of melanocytic tumors in the present study, 27 cases were benign and 7 cases were malignant.

Conclusion: Benign lesions were more common than malignant tumors. As the age increased, frequency of malignant tumors has been also increased.

Keywords: Malignant melanoma, Nevi, Melanocytic tumors.

Introduction

The skin or integument is a complex organ with many functions and with three main anatomic components: epidermis with skin adnexa and melanocytic system and dermis with subcutis.^{1,2,3,4} The ratio of melanocytes to keratinocytes in the epidermal basal layer varies from 1:4 to 1:10 depending on the site of the body.

The functional unit composed of a melanocyte and the adjacent keratinocytes receiving melanin from it, is referred to as the epidermal–melanin unit.

Melanocytic lesions are of importance primarily because of malignant melanoma, which is the single most common potentially lethal neoplasm of the skin.

Nevi are benign tumors of melanocytes (nevus cells) are generally called melanocytic nevi. These melanocytes are referred as nevus cells. Ordinary nevi are classified according to the location of the nevus cells in relation to the major epidermal and dermal landmarks. Junctional nevus is defined as a nevus in which the melanocytic proliferation is restricted to the basal portion of the epidermis (‘junctional’ area).

Intradermal nevus is the term given to a nevus in which all the melanocytes are in the dermis. This is the common adult type of nevus. Compound nevus possesses features of both junctional and intradermal nevus. Nevus cell nests are present in the epidermis, as well as appearing to drop off from the epidermis into the superficial dermis.

Malignant melanoma is the single most common potentially lethal neoplasm of the skin. It arises in the epidermis and may be in situ or may be invasive. Invasive melanoma may be tumorigenic (vertical growth phase) or non tumorigenic (radial growth phase). Melanoma in situ and non tumorigenic invasive melanoma can be divided into (a) lentigo maligna, (b) superficial spreading, (c) acral lentiginous and (d) mucosal lentiginous types. Tumorigenic melanoma may arise in relation to a preexisting non tumorigenic component of any of the above types, in which case it is named accordingly. Alternatively, tumorigenic melanoma may arise de novo, without evidence of an adjacent in situ or microinvasive component at the time of detection, in which case it is termed nodular melanoma. Other pigmented lesions are blue nevus, spitz nevus, dysplastic nevus, Mongolian spot, nevus of Ota and nevus of Ito.

Material and Methods

Study place: Sardar Patel Medical College, Bikaner.

Study duration: January 2017 to July 2019

Study design: Record based retrospective study

Inclusion criteria: All the biopsy samples suspected to have skin tumors of melanocytic origin.

Exclusion criteria:

- Infective and inflammatory diseases of skin.
- Tumors of keratinocytes, skin adnexa and mesenchymal origin
- Inadequate biopsies

Routine histological procedure was followed and slides were stained with H&E.

Observation and results

Total of 528 cases of skin specimens were studied in the Department of Pathology, Sardar Patel Medical College, Bikaner From 1st January 2017 to 31st July 2019. The results of the study were as follows:

Table 1: Frequency of melanocytic tumors in total histopathology specimens of the skin

S.N.	Year	Total no. of histopathology specimens of skin	No. of cases in present study	Frequency (%)
1	2017	251	13	5.17
2	2018	162	14	8.64
3	2019	115	7	6.08
4	Total	528	34	19.89

In the present study, out of 528 cases, 34 cases of melanocytic lesions were received. Maximum no. of cases were found in 2018 (8.64%).

Table 2: Distribution of benign and malignant melanocytic tumors of skin

S.N	Type of cases	No. of cases	Frequency (%)
1	Benign	27	79.41
2	Malignant	5	14.70
3	Total	34	100

Out of total 34 cases, 27 cases (79.41%) were benign while 5 cases (14.70%) were malignant.

Table 3: Sex wise distribution of melanocytic tumors

S.N.	Type of cases	Male	Frequency (%)	Female	Frequency (%)
1	Nevi	8	29.62	19	70.37
2	Malignant melanoma	6	85.71	1	14.28
3	Total	14	100	20	100

Nevi were more common in female (19 cases, 70.37%) while malignant melanoma was more common in male (6 cases, 85.71%) patients.

Table 4: Age wise distribution of melanocytic lesions

Age group (years)→ Name of lesion(↓)	≤10	11-20	21-30	31-40	41-50	51-60	61-70	>70
Nevus	1	1	11	5	2	3	4	-
Malignant melanoma	-	-	-	1	-	2	-	4

Maximum number of cases of nevi were found in the age group of 21-30 years (11 cases) while majority of cases of malignant melanoma were seen in the age group of >70 years (4 cases).

Figures

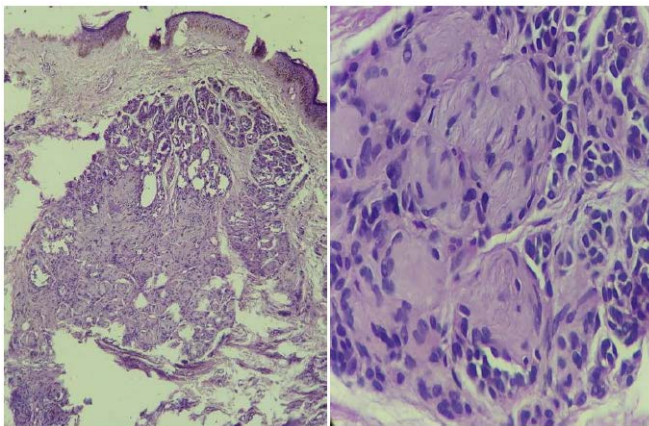


Figure 1: Intradermal nevus- showing nevus cells with melanin pigment and schwannian differentiation. (H&E, 10x and 40x)

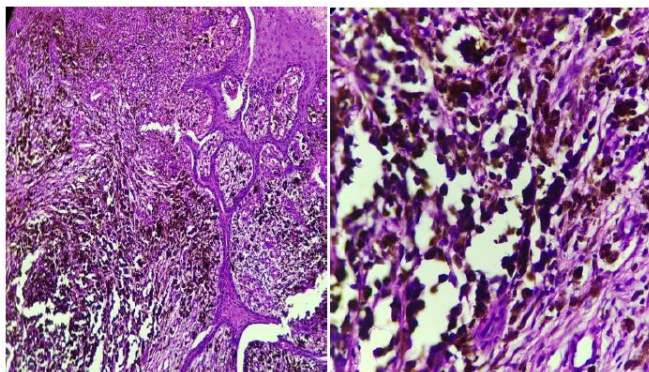


Figure 2: Malignant melanoma- showing highly pleomorphic tumor cells which are containing melanin pigment. (H&E, 10x and 40x)

Discussion

The present study was conducted in the Department of Pathology, Sardar Patel Medical College, Bikaner from

January 2017 to July 2019. In the present study, 528 cases were included and the following observations and inferences were made.

Table:5 Comparison of melanocytic lesions in male and female

S.N.	Name of study	Male	Female
1	Neetu Goyal et al ⁵	36.84%	63.15%
2	Present study	41.17%	58.82%

In the present study, 34 cases of melanocytic origin were found in which 14 were male and 20 were female. Male to Female ratio was 1:1.4 which was concordant with the study conducted by Neetu Goyal et al⁵ (1:1.7).

Table 6: Comparison of cases of malignant melanoma with different studies

Name of study	Chakravarthy RC et al ⁶	Bari V et al ⁷	Present study
Frequency (%)	1.69%	2.11%	1.32%

In this study, Out of 528 cases, 7 cases (1.69%) of malignant melanoma were found. These findings were similar to the observations made by Chakravarthy RC et al⁶ and Bari V et al⁷.

Conclusion

In the present study, nevi are more common than malignant melanoma. Nevi were more common in younger age group while frequency of malignant melanoma was more in older age group.

References

- Horstman E: Die Haut. In: Mollendorff WV, ed. Handbuch der mikroskopischen Anatomie des Menschen, vol 3. Berlin: Springer-Verlag; 1957:1-488,part 3.
- Li M, Urmacher CD: Normal skin. In: Mills SE, ed. Histology for pathologists, ed. 3. Philadelphia: Lippincott Williams & Wilkins; 2007.

3. Montagna W, Parakkal PF: The structure and function of the skin. ed 3. New York, Academic Press, Inc, 1974.
4. Montagna W, Kligman AM, Carlisle KS: Atlas of normal human skin. New York, Springer-Verlag, 1992.
5. Goyal N, Jain P, Malik R, Kosthi A; Spectrum of Non-neoplastic skin Disease: A Histopathology based clinicopathological correlation study. Sch. J.App. Med. Sci,3(1F):444-449.
6. Chakravorthy RC and Choudhary DR. Malignant neoplasm of the skin in Eastern India.The Indian Journal of Cancer,vol 5,1968:p133-144.
7. Vaibhav Bari, Prashant Murarkar, Alka Gosavi, Kalpana Sulhyan. Skin Tumors -Histopathological Review of 125 cases.p417-428.