

Original Research Article

Morphological Gamut of Various Neoplastic Lesions of Skin

Rupashree S¹, Geethalakshmi U²

Associate Professor, Department of Pathology, Shivamogga Institute of Medical Sciences, Shivamogga, Karnataka, India

Corresponding Author: Geethalakshmi U

ABSTRACT

Skin cancer constitutes a significant proportion of all neoplasms, constituting less than 1% of all diagnosed cancers in India. The incidence of skin cancer is gradually increasing over last few decades. Neoplasms of skin arise from epidermis, adnexal structures, dermis and neuroendocrine cells. ⁽¹⁾ Histological examination gives more information to the clinician thereby facilitating better treatment modalities. ⁽²⁾ They pose a diagnostic challenge and range from a simple benign tumours causing cosmetic concern to premalignant and aggressive malignant tumours. ⁽³⁾ Hence till date, histopathology remains the gold standard in diagnosing any neoplastic lesions of skin. Aim was to study the various histopathological types of skin tumours. This was a retrospective study done over a three year period. Out of all the skin biopsies received, only neoplastic conditions were selected for the study. A total of 121 tumours were considered for the study. Most common age group of presentation was between 60-69 years (21.4 %); youngest being 4years and oldest was 86 years. Slight Male preponderance (51.5%) was observed in the study. Out of 121 cases, 73 were benign neoplasms (60.3%) and malignant neoplasms were seen in 48 cases (39.6%). Among all the skin neoplasms, nonmelanocytotic tumours were frequently seen (78.5%). Out of 121 cases, 118 were of primary skin tumours and only 3 cases were of metastatic skin deposits. The present study highlights that knowledge of histopathologic patterns helps in early diagnosis, prognosis and also to plan an effective management modality.

Key words: Skin tumours, Histopathology

INTRODUCTION

Skin cancer constitutes a significant proportion of all neoplasms. In India, skin cancer constitutes less than 1% of all diagnosed cancers. The incidence of skin cancer is gradually increasing over last few decades. Neoplasms of skin arise from epidermis, adnexal structures, dermis and neuroendocrine cells. ⁽¹⁾ The most common malignant primary skin cancers are Basal cell carcinoma (BCC), squamous cell carcinoma (SCC) and malignant melanoma. Histological examination gives more information to the clinician thereby facilitating better treatment modalities. ⁽²⁾ They pose a diagnostic challenge and range

from a simple benign tumours causing cosmetic concern to premalignant and aggressive malignant tumours. ⁽³⁾ Hence till date, histopathology remains the gold standard in diagnosing any neoplastic lesions of skin.

AIMS AND OBJECTIVES:

- 1) To find out the incidence of various types of skin tumors
- 2) To study age and sex distribution of skin tumours

MATERIALS AND METHODS

This was a retrospective study over a three year period from 2016 to 2018 done in the Department of Pathology, Shimoga Institute

of Medical Sciences, Shimoga. Out of all the skin biopsies received, only neoplastic conditions were selected for the study. The skin biopsy specimens preserved in 10% formalin were received by Department of Pathology of Shimoga Institute of Medical Sciences, Shivamogga. Demographic details like age, sex and related clinical details of the patient and were noted. These skin biopsy specimens were grossly examined, processed and stained with routine Haematoxylin and Eosin. These sections were studied under light microscope.

STATISTICAL ANALYSIS

The statistical methods applied in the present study were number and percentage and descriptive statistics.

RESULTS

A total of 121 tumours were considered for the study. Among all the skin neoplasms, nonmelanocytotic tumours were frequently seen (78.5%). Out of 121 cases,

118 were of primary skin tumours and only 3 cases were of metastatic skin deposits.

Most common age group of presentation was between 60-69 years (21.4 %) as shown in Table 1; youngest being 4years and oldest was 86 years. Slight Male preponderance (51.5%) was observed in the study.

Table 1: showing Age distribution

Age group (years)	Number of cases
< 10	3 (2.5%)
10-19	9(7.4%)
20-29	15 (12.4%)
30-39	19 (10.2%)
40-49	19 (10.2%)
50-59	18 (8.4%)
60-69	26 (6.9%)
70-79	9 (7.4%)
80-89	3 (2.5%)

Out of 121 cases, 73 were benign neoplasms (60.3%) and malignant neoplasms were seen in 48 cases(39.6%). Majority of the tumours of skin belonged to epidermal and dermal origin. (Table 2)

Table 2 : showing distribution of various skin neoplasms

Type of tumour	Epidermal and dermal tumours	Adnexal tumours	Melanocytic tumour
Benign (73)	34 (28%)	16 (13.2%)	23 (19%)
Malignant(48)	40 (33%)	2 (1.6%)	3 (2.5%)
Total no of cases	74 (61.1%)	18 (14.8%)	26 (21.5%)

In our study, squamous cell carcinoma was more frequently seen (40.5 %) when compared to basal cell carcinoma (12.1%) (Table 3).

Table 3: Showing distribution of Epidermal and dermal tumours

Tumours	No .of cases
Squamous papilloma	8 (6.6%)
Verruca vulgaris	4(3.3%)
Keratoacanthoma	1(0.8%)
Squamous cell carcinoma	30(24.8%)
Basal cell carcinoma	9(7.4%)
Verrucous Carcinoma	1(0.8%)
Capillary Haemangioma	15(12.4%)
Cutaneous Leiomyoma	2(1.6%)
Granular cell Tumour	1(0.8%)
Hamartoma	1(0.8%)
Fibroma	2(1.6%)
TOTAL	74

Out of 18 cases of adnexal tumours, 16 cases (88.8%) were benign tumours and the remaining 2 cases were malignant, being sebaceous carcinoma.

Table 4 : Distribution of adnexal tumours

Tumours	No. of cases
Eccrine Poroma	2(1.6%)
Cylindroma	1(0.8%)
Nodular hidradenoma	1(0.8%)
Seborrheic Keratosis	4(3.3%)
Pilomatricoma	5(4.1%)
Eccrine Spiradenoma	1(0.8%)
Trichoepithelioma	1(0.8%)
Sebaceoma	1(0.8%)
Sebaceous carcinoma	2(1.6%)
TOTAL	18

In the present study, out of 26 cases of melanocytic lesions, majority of the cases were benign nevi (88.5%) and 3 cases were of malignant melanoma (11.5%) (Table 5)

Table 5: Distribution of melanocytic tumours

Tumours	No. of cases
Intradermal nevus	15(12.4%)
Other types of nevi	8(6.6%)
Malignant melanoma	3(2.5%)
TOTAL	26

DISCUSSION

Skin with its appendages is a highly sophisticated sensory organ which has various functions like barrier to fluid loss and mechanical injury, protective against potentially harmful agents along with endocrine roles. ⁽³⁾

Incidence of skin tumours are on the rise in the last few decades due to increasing sun and chemical exposure. ⁽⁴⁾

Skin tumours vary hugely with respect to clinical presentation, behavior and histological types ⁽⁵⁾

According to our study, commonest age group of presentation was between 60-69 years (Table 1); youngest was 4years and the oldest being 86 years. This was in correlation with a study done by Gundalli et.al ⁽⁵⁾

Slight male predominance was noted in our study which was in accordance with Kaur R et .al ⁽⁶⁾

In our study, there were 121 cases of skin tumours including both benign and malignant lesions. Out of these 121 cases, 73 cases (60.3%) were histologically diagnosed as benign and 48 cases (39.6%) were diagnosed as malignant tumours (Table 2). A similar finding was obtained in study by Kaur et al ⁽⁶⁾ and Karki et al. ⁽⁷⁾

Majority of the tumours in our study were epidermal tumours (43.8%); the remaining were adnexal (14.8%) and melanotic tumours (21.5%). This was in accordance with the study done by Samanta M et.al ^[Error! Reference source not found.]

In the present study commonest benign epidermal tumor was Squamous papilloma which on microscopy showed hyperkeratosis, acanthosis, papillomatosis with well formed fibrovascular core.

Among the dermal tumours, capillary haemangioma constituted the major component. This was similar to study done by Karki et.al ⁽⁷⁾

In the present study, squamous cell carcinoma (SCC) was the most frequent malignant epidermal tumour (24.8%) with male preponderance. Commonest site of occurrence of SCC was lower extremity.

Majority of these tumours were well differentiated and showed nests and sheets of malignant Squamous cells with large, hyperchromatic, pleomorphic nuclei, moderate amount of eosinophilic cytoplasm admixed with numerous keratin pearl formation and individual cell keratinisation (Fig 1). This was similar to Deo SV et.al ⁽⁸⁾ and Chakravarthy RC et.al. ⁽¹⁰⁾

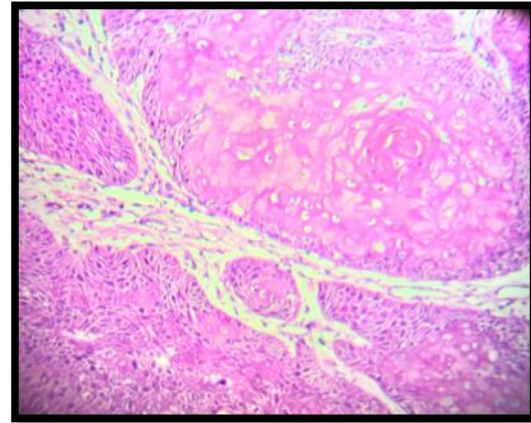


Fig 1: Squamous cell Carcinoma- Well differentiated (H& E x400)

Basal cell carcinoma was the next common malignancy noted in our study (7.4%). Jina et.al ⁽⁴⁾ and Gundalli et.al ⁽⁵⁾ also made the same observation. On histopathology, these tumours showed nests of basaloid cells with peripheral pallisading and clefting artifact between the tumour nests and the stroma. (Fig 2)

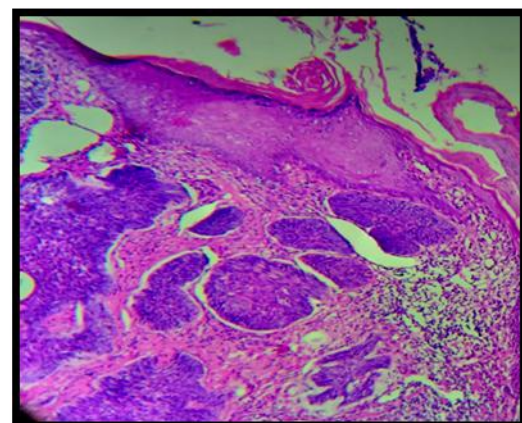


Fig 2: Basal cell carcinoma (H&E x400)

In the present study, adnexal tumours constituted 14.8% (18 cases) of all skin tumours. Out of these cases, benign tumours

formed the major bulk (88.9%). Out of which, pilomatricoma was the most common benign tumour observed. These cases of pilomatricoma predominantly occurred in scalp and showed bimodal population of basophilic and ghost cells (Fig 3). This was comparable with study done by Sharma A et.al, [11] Samaila et.al [12] and Song et. al. [13]

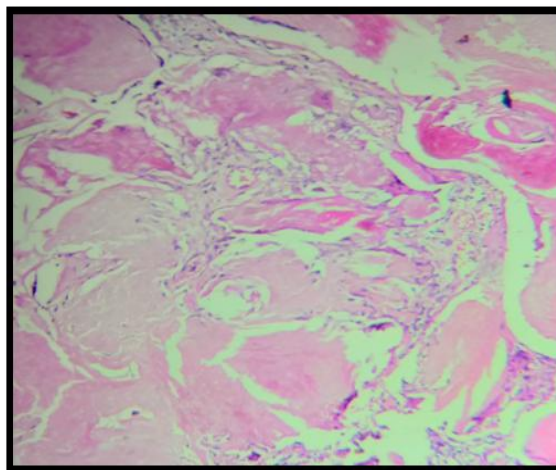


Fig 3. Pilomatricoma (H and E, x400)

Sebaceous carcinoma was the only malignant adnexal tumour seen (11.1%). Similar observation was done by Gundalli et al [5] and Kaur et.al. [6] These showed irregular nests and lobules of pleomorphic sebaceous cells having foamy cytoplasm and distinct cell borders (Fig 4).

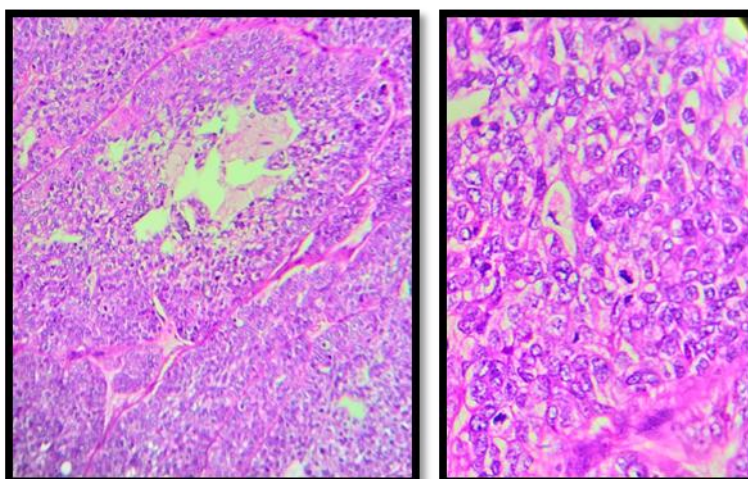


Fig 4. Sebaceous carcinoma (H and E, x100, 400)

Melanocytic tumours comprised 21.5% of all the skin tumours (26 cases) in our study. Majority of them were benign tumours. Among these, intradermal nevi amounted to 88.5% . Karki et.al, [7] Samantha et.al [Error! Reference source not found.] also had the same finding.

nucleoli, numerous bizarre mitosis and variable amount of melanin pigment (Fig 6).

These cases of Intradermal nevi showed cords, nests and sheets of benign nevus cells in the dermis, with variable amount of melanin pigment (Fig 5).

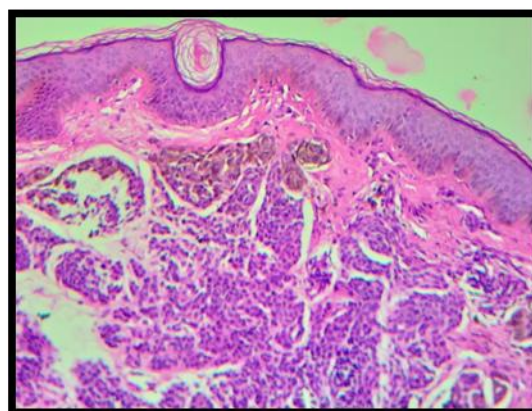


Fig 5. Intradermal Naevus (H and E, x400)

Only 11.5 % of melanocytic tumours were malignant melanoma as seen by Gundalli et.al. [5] In our study it was most commonly seen in leg. The cells in Melanoma were arranged in sheets and nests and showed large, irregular, pleomorphic nuclei, with prominent eosinophilic

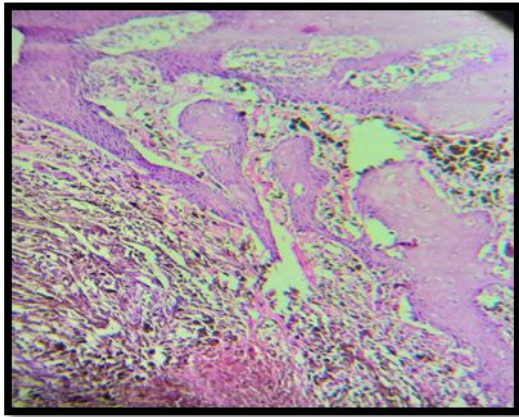


Fig 6. Malignant Melanoma (Hand E, x400)

Majority of the cases in our study were primary tumours (118 cases), while only 3 cases were metastatic deposits in skin. Primary tumours were from plasmacytoma, renal cell carcinoma and follicular carcinoma thyroid which were comparable to the study done by Requena L et.al, Quinn TR et.al and Tadashi T et.al. [14-16]

CONCLUSION

Histopathology forms the gold standard in diagnosis of various cutaneous lesions in order to improve the therapeutic approach to patients especially with skin neoplasms. We would like to emphasize the importance of early diagnosis of malignant skin lesions owing to its prognostic implications. Hence the present study highlights that knowledge of histopathologic patterns helps in early diagnosis, prognosis and also to plan an effective management modality.

REFERENCES

1. Juan Rosai. Rosai and Ackerman's surgical pathology: Mosby. 9th edition. 2004.
2. Elder DE. Lever's Histopathology of the Skin: Lippincott Williams and Wilkins.2009.10th edition.
3. Lazar AJF, Murphy GF. Robbins Cotran Pathologic Basis of Disease : South Asia edition : Elsevier 2017.9th edition.
4. Jina .A, Singh V, Saini S, Chotan N, Rajan M. Clinicopathological profile, diagnosis and treatment of skin cancers at a tertiary care centre: A retrospective study. *Int.Surg.J.* 2017 Aug;4(8): 2549-2555
5. Gundalli S, Kolekar R, Pai K, Kolekar A. Histopathological Study of Skin tumours. *International Journal of Health care sciences.* Vol 2 (2), October 2014 – March 2015.
6. Kaur R, Kumar V, Mehra K, Gupta N, Singh A. Histopathological evaluation of skin tumors. *Indian Journal of Pathology and Oncology.* 2016;3(4):627-631.
7. Karki D, Jha A, Shreevastav S, Pokhrel DB. Histopathological evaluation of tumors and tumor like lesions of skin and adnexa. *Journal of Pathology of Nepal.* 2018(8):1353-1359.
8. Samanta M, Mangal N, Bhavani K, Koteeswaran G, Parmar P.C. Histopathological study of skin tumours. *Trop J Path Micro* 2018;4(2):195-200.
9. Deo SV, Sidhartha H, Shukla N K, Kumar S, Kar M, Samaiya A. Surgical management of skin cancers: Experience from a regional cancer centre in north India. *Indian journal of cancer.*2005 September ;42(3):145-50.
10. Chakravorthy RC and Choudhury DR. Malignant neoplasms of the skin in eastern India. *The Indian journal of cancer,* vol 5 1968:133-144.
11. Sharma A, et.al: Histopathological study of skin adnexal tumours- Institutional study in south India. *J skin Cancer* 2014.
12. Samaila MOA. Adnexal skin tumours in Zaria, Nigeria. *Ann Afr Med* 2008;7(1): 6-10.
13. Song KY, Yoon DH, Ham EK, Lee YS. Clinicopathological study on the skin appendage tumours. *Korean J Pathol* 1989;23:111-21.
14. Luis Requena, MD; Heinz Kutzner, MD; Gabriele Palmedo. Cutaneous Involvement in Multiple Myeloma A Clinicopathologic, Immunohistochemical, and Cytogenetic Study of 8 Cases. *Arch Dermatol.* 2003;139(4):475-486
15. Quinn TR, Duncan LM, Zembowicz A, Faquin WC. Cutaneous metastases of follicular thyroid carcinoma: a report of four cases and a review of the literature. *Am Dermatopathol.* 2005 Aug;27(4):306-12.
16. Terada Tadashi. Cutaneous metastasis of renal cell carcinoma: a report of two cases. *Int J Clin Exp Pathol.* 2012; 5(2): 175–178.

How to cite this article: Rupashree S, Geethalakshmi U. Morphological gamut of various neoplastic lesions of skin. *Int J Health Sci Res.* 2019; 9(12):10-14.
