

HISTOPATHOLOGICAL SPECTRUM OF SKIN TUMORS WITH SPECIAL REFERENCE TO WHO CLASSIFICATION- AN OBSERVATIONAL STUDY IN A TERTIARY CARE HOSPITAL OF NORTH-EAST INDIA.

Histopathology

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ABSTRACT

Background: Skin is the largest organ of the body comprising of epidermis, dermis and subcutis. There are wide spectrum of skin tumors arising from different cell population. **Objectives:** The aim is to study the histopathological spectrum of skin tumors with their age and sex wise distribution in patients who has undergone tumor resection or biopsy in Agartala Government Medical College and GB Pant hospital & to group the tumors according to World Health Organization (WHO) classification. **Material And Methods:** This is an observational cross-sectional study conducted in a tertiary care hospital of North-East India over a period of 2 years (June 2020 to May 2022). Total 60 cases of skin tumors were analyzed in this study period. **Result:** Out of 60 cases 27cases (45%) were benign and 33cases (55%) were malignant. According to origin keratinocytic tumors were most common (66.67%) followed by skin appendageal (23.33%) and melanocytic tumors (6.67%). Most common skin tumor was squamous cell carcinoma (30%) followed by basal cell carcinoma (11.67%). **Conclusion:** Skin tumors can affect any age group. Keratinocytic tumors were the most common tumors according to origin.

KEYWORDS

Skin tumors, Keratinocytic, Skin appendages, Histopathology.

INTRODUCTION

Skin is the largest organ in the body, comprising of epidermis, dermis, and subcutis. It is a complex organ with multiple functions, mainly acts as a barrier against various harmful environmental agents and also maintains homeostasis. It is the most exposed organ to sunlight and other forms of ultraviolet rays. The epidermal layer is composed of 90% of keratinocytes and remaining 10% composed by melanocytes, Langerhans cells and Merkel cells. Epidermal appendages extend from epidermis to dermis comprising of specialized cells like follicular epithelial cells, sebaceous cells, cells of eccrine and apocrine glands¹. Different cell types give rise to different types of tumors².

There are wide spectrum of skin tumors arising from different cell population. Epidermis has the capacity to develop into an array of keratinocytic lesion, whereas skin adnexal structures can also give rise to wide spectrum lesion which may be solitary or multiple, benign or malignant³. These tumors clinically usually present as papules or nodules only. So clinical diagnosis is not at all conclusive alone. Histopathological confirmation is the prime requisite for a definite diagnosis. But at times there are considerable clinical or histological overlaps also, so clinicopathological correlation is must for their exact identification⁴.

This study is planned to analyze the various skin tumors in our population and to group them according to recent classification given by World Health Organization (WHO)⁵.

OBJECTIVES:

1. The aim is to study the histopathological spectrum of skin tumors with their age and sex wise distribution in patients who has undergone tumor resection or biopsy in Agartala Government Medical College and GB Pant hospital.

2. To group the tumors according to World Health Organization (WHO) classification.

MATERIALS AND METHODS:

This is an observational cross-sectional study which was carried out in the Department of Pathology, Agartala Government Medical College, Agartala, Tripura, India. All the skin biopsies received in the histopathology section from June 2020 to May 2022 were retrieved and reviewed from the archives of the department and studied retrospectively. Total 60 cases were found in this study period. Clinical history and relevant data were acquired from the requisition forms.

Slides stained with routine hematoxylin and eosin stain were reexamined under the light microscopy. Re-sectioning and re-staining of the slides were done wherever required. Slides were reviewed by two pathologists and the consensus final diagnosis has been accepted.

Inclusion Criteria:

All the skin biopsies with a definitive diagnosis of skin tumors received in the histopathology section of department of Pathology, AGMC were included in the study.

Exclusion Criteria:

Inadequate and inconclusive skin biopsies, mesenchymal tumors, nonspecific chronic dermatitis, cutaneous or skin appendageal cysts were excluded from the study.

RESULTS:

Table 1: Gender Incidence Of Skin Tumors.

Male	Female	Total
35	25	60
58.33%	41.67%	100%

Total 60 cases of skin tumors were studied during this 2 years period, out of which 35 cases (58.33%) were male and 25 cases (41.67%) were female. Male: Female= 1.4:1

Skin tumors are distributed in all age groups. The age ranged from 11-76 years. Most of the tumors were found in the 5th decade of life that is total 17 cases (28.33%) followed by 4th decade of life that is total 14 cases (23.34%). No tumor was found in the 1st decade of life. Out of total 60 cases 27cases (45%) were benign and 33cases (55%) were malignant.

Table 2: Distribution Of Various Skin Tumors According To Origin:

Origin	Benign	Malignant
Epidermal	15(25%)	25(41.67%)
Melanocytic	01(1.67%)	03(5%)
Appendageal	11(18.33%)	03(5%)
Miscellaneous	0	02(3.33%)
Total	27(45%)	33(55%)

According to the origin of the tumors most of the tumors were originated from epidermal cell layer out of which 15 cases (25%) were benign and 25 cases (41.67%) were malignant followed by skin

appendageal tumors where 11 cases (18.33%) were benign and 03 cases (5%) were malignant. Total 04 cases of melanocytic tumors were also diagnosed out of which 03 cases (5%) were malignant.

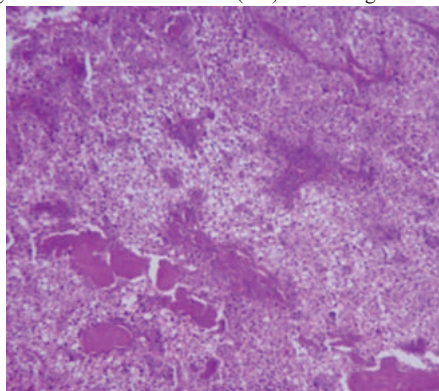


Figure 1: Clear cell hidradenoma; H&E stain (100X)

Table 3: Distribution Of Various Pattern Of Skin Tumor As Per WHO Classification.

Tumor Type	Diagnosis	Number of cases	Percentages
Keratinocytic	Basal cell carcinoma	7	11.67%
	Squamous cell carcinoma	18	30%
	Verrucous carcinoma	3	5%
	Verruca vulgaris	4	6.67%
	Verruca plana	2	3.33%
	Seborrheic keratosis	6	10%
Melanocytic	Junctional nevus	1	1.67%
	Malignant melanoma	3	5%
Adnexal Apocrine & eccrine	Hidradenoma	1	1.67%
	Cylindroma	1	1.67%
	Syringocystadenoma papilliferum	2	3.33%
	Chondroid syringoma	2	3.33%
Follicular	Pilomatrixoma	2	3.33%
Sebaceous	Sebaceous adenoma	2	3.33%
	Nevus sebaceous	1	1.67%
	Sebaceous carcinoma	3	5%
Miscellaneous	Extramammary Paget disease	1	1.67%
	Metastatic deposit of mucinous adenocarcinoma	1	1.67%

Among the keratinocytic tumors squamous cell carcinoma comprised bulk of the tumor percentages. Out of total 60 cases of skin tumor squamous cell carcinoma comprised 18 cases (30%) followed by basal cell carcinoma which was comprising of total 07 cases (11.67%). Most common benign tumor encountered in the keratinocytic tumor was seborrheic keratosis which comprised total 06 cases (10%).

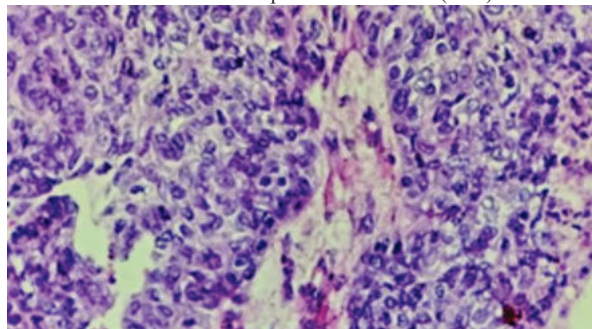


Figure2: Sebaceous carcinoma; H&E stain (400X).

Skin adnexal tumors were the 2nd most common skin tumors in this study. Adnexal tumors showed several differentiations like eccrine and apocrine, follicular or sebaceous differentiation. Total 14 cases of skin

adnexal tumors were diagnosed out of which 11 cases (18.33%) were benign and 03 cases (5%) were malignant. All the malignant skin adnexal tumors were sebaceous carcinoma.

Another majority of malignant tumors were found originating from melanocytic cells. Total 04 cases of melanocytic tumor were diagnosed, from which 03 cases (5%) were diagnosed as malignant melanoma.

Squamous cell carcinomas were mostly seen in the age group of 6th decade (6 cases) followed by 5th decade (5 cases) of life whereas basal cell carcinomas were found most commonly in the 5th decade (4 cases) of life. Most common benign tumor of keratinocytic origin seborrheic keratosis was seen mostly in the 5th decade (3 cases) of life.

Malignant melanoma was found mostly in the 6th decade (2 cases) of the life. Most common malignant skin adnexal tumor sebaceous carcinoma was found distributed in the 5th, 6th and 7th decade of life.

DISCUSSION:

Skin tumor comprises a wide variety and extensive spectrum of lesions arising from keratinocyte, melanocyte, or skin adnexal structures. Total 60 cases of skin tumors were studied in a period of 2 years. Male to female ratio is 1.4:1. 27 cases (45%) were benign and 33 cases (55%) were malignant. Most of the skin tumors were found in the 5th decade (17 cases) of life followed by 4th decade (14 cases) of life irrespective of benign or malignant lesion. Epidermal tumors were the most common tumor comprising of total 40 cases (66.67%) followed by skin adnexal tumors (14 cases) and melanocytic tumors (4 cases). Most common tumor found in the epidermal tumor was squamous cell carcinoma which comprised total 18 cases (30%) and mostly seen in the 6th decade of life whereas 2nd most common tumor was basal cell carcinoma (7 cases) seen mostly in the 5th decade of life. Seborrheic keratosis was diagnosed as most common benign keratinocytic tumor comprising total 6 cases (10%) and seen mostly in the 6th decade of life. 14 cases (23.33%) of skin adnexal tumors were diagnosed out of which 03 cases (5%) were malignant and all the 03 cases were sebaceous carcinoma. Benign adnexal tumors were pilomatrixoma, Syringocystadenoma papilliferum, chondroid syringoma, sebaceous adenoma comprising 02 cases each. 01 case of hidradenoma and Cylindroma was also diagnosed. Total 04 cases of melanocytic tumors were diagnosed out of which 03 cases were malignant melanoma, mostly seen in the 6th decade of life. 01 case of extra mammary pagets disease was diagnosed in the 7th decade of life and another case of metastatic deposits of adenocarcinoma was presented as fungating lesion in the buttock.

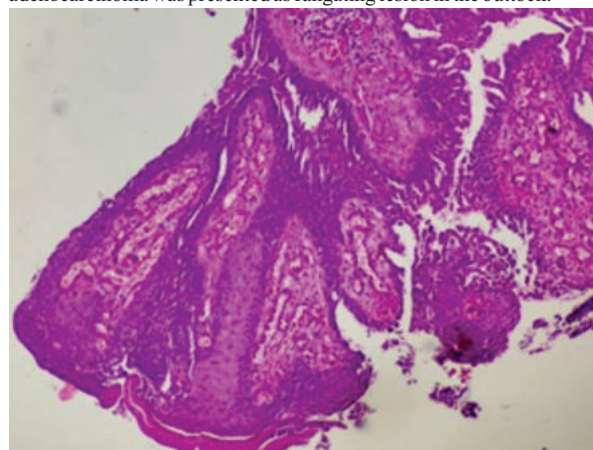


Figure 3: Syringocystadenoma papilliferum; H&E stain (100X).

A study conducted by Uplaonkar VS et al⁶ on 69 cases, 36 cases (52.17%) were benign and 33 cases (47.8%) were malignant. Pappala P et al⁷ concluded out of 46 cases 43 cases (93.5%) were benign and only 03 cases (6.5%) were malignant whereas Narhire V et al⁸ found out of 36 cases 25 cases (69.45%) were benign and 11 cases (30.6%) were malignant.

Uplaonkar VS et al⁶ found keratinocytic tumors were 16 cases (44.4%), melanocytic tumors 6 cases (16.6%) and skin adnexal tumors 14 cases (38.8%) whereas Pappala P et al⁷ found keratinocytic tumors 28 cases (60.86%), melanocytic tumors 11 cases (23.91%) and skin adnexal tumors 07 cases (15.21%). Samanta et al⁹ also found melanocytic

tumors more than skin appendageal tumors.

Table 4: Comparison Of Frequency Of Various Neoplasm According To Origin:

Tumor type	Uplaonkar VS et al ⁶	Pappala P et al ⁷	Present study
Keratinocytic	16 (44.4%)	28 (60.86%)	40(66.67%)
Melanocytic	6(16.6%)	11 (23.91%)	04(6.67%)
Adnexal	14(38.8%)	07(15.21%)	14(23.33%)

Bari V et al¹⁰ conducted a study on 125 cases of skin tumors and found that squamous cell carcinoma was the commonest malignant tumor (45.9%) followed by basal cell carcinoma (34.4%). Uplaonkar VS et al⁶ concluded that most common malignant tumor is basal cell carcinoma (26%) followed by squamous cell carcinoma (6%). In the present study the most common tumor is squamous cell carcinoma; 18 cases (30%) followed by basal cell carcinoma; 7 cases (11.67%).

CONCLUSION:

Skin tumors comprises a small, yet significant proportion of tumors diagnosed histologically. Skin tumors can affect any age group. Males were slightly affected more than female. Keratinocytic tumors were the most common tumor according to origin. Squamous cell carcinoma was the most commonly diagnosed tumor mainly affecting 6th decade of life followed by basal cell carcinoma. Most common benign keratinocytic tumor was seborrheic keratosis. Most of the melanocytic tumors were malignant melanoma. Skin appendageal tumors were mainly benign and showed follicular, eccrine, apocrine and sebaceous differentiation. Sebaceous carcinoma was the only diagnosed malignant skin appendageal entity mainly seen in the 5th to 6th decade of life.

REFERENCES:

1. Kumar V, Abbas A, Aster J. Robbins and Cotran. Pathological basis of disease. 10th ed. Elsevier 2021; 1133-35.
2. Rosai and Ackerman's surgical pathology. 11th ed. Elsevier 2018; 45-51.
3. Weedon D. Tumors of the epidermis. Weedon Skin Pathology. 5th ed. Elsevier 2019; 667-708.
4. Fletcher C. Tumors of Skin. Diagnostic Histopathology of Tumors. 5th ed. Elsevier 2019; 1680-1795.
5. D E Elder, D Massi, Richard A et al. WHO Classification of Skin Tumors. 4th ed. 2018; 10-221.
6. Uplaonkar VS, Tengli M, Farheen S, Pratima S. Histopathological Study of Tumors of Epidermis and Epidermal Appendages. Indian J Pathol. 2017; 6(2): 460-466.
7. Pappala P, Raksha S, Vasundara G, P Anusha, Mohan KVM. Histopathological study of skin tumors. Indian J Pathol Oncol. 2019;6(4):543-547.
8. Narhire V, Swami Y, Baste D. A clinicopathological study of skin and adnexal neoplasms at a rural based tertiary teaching hospital. Asian Pac J Health Sci. 2014;2(2):153-62.
9. Samanta M, Mangal N, Bhavani K. Histopathological study of skin tumors. Tropical J Pathol Microbiol. 2018;4(2):195-200.
10. Bari V, Murarkar P, Gosavi A, Sulhyan K. Skin Tumors- Histopathological Review of 125 cases. Indian Medl Gazette. 2014 Nov; 148(11): 418-427.