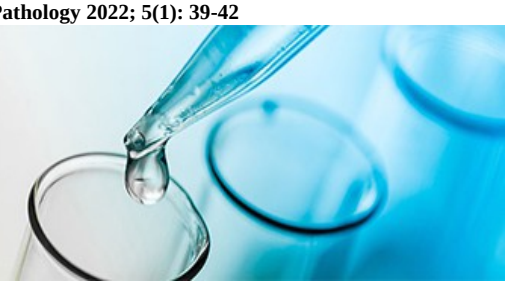
International Journal of Clinical and Diagnostic Pathology



ISSN (P): 2617-7226
ISSN (E): 2617-7234
www.patholjournal.com
2022; 5(1): 39-42
Received: 12-10-2021
Accepted: 22-12-2021

Deychen D Myes
MD Pathology, Senior Resident, B.J.MC, Ahmedabad, Gujarat, India

Tana Shah
MBBS, Junior Resident, B.J.M.C Ahmedabad, Gujarat, India

Smita A Shah
MD Pathology, Professor, B.J.M.C Ahmedabad, Gujarat, India

Corresponding Author:
Deychen D Myes
MD Pathology, Senior Resident, B.J.MC, Ahmedabad, Gujarat, India

Histopathological study of skin tumors: A 100 case study in a tertiary care hospital

Deychen D Myes, Tana Shah and Smita A Shah

DOI: https://doi.org/10.33545/pathol.2022.v5.i1a.453

Abstract
Introduction: The overall incidence is still lower in India, possibly due to high melanin content in Indian skin but cases of skin tumors are identified. This study was undertaken to evaluate the different histopathological types of skin tumors in a tertiary care hospital.
Method: All the specimens were received in Histopathology section of Pathology department of B.J. Medical College and Civil Hospital, Ahmedabad from a period of two years extending from July 2018 to August 2020.
Result: Out of the total 100 cases of skin tumors, 61 were diagnosed to be as benign and 39 were diagnosed as malignant**.** The study showed there was male predominance with male to female ratio of 1.27:1.
Conclusion: Histopathology is the gold standard to identify the architectural pattern of tumor and growth of infiltration due to its therapeutics and prognostic implications.

Keywords: Skin tumors, benign, malignant

Introduction

Aims and Objectives: This study was done to classify different types of skin tumors in a tertiary care hospital and to find the incidence of various skin tumors and study their variation according to age, sex and site. The results of the present study were compared with other studies.

Material and Method: All the specimens were received in Histopathology section of Pathology department of B.J. Medical College and Civil Hospital, Ahmedabad for a period of two years extending from July 2018 to August 2020. Data for retrospective study was obtained from departmental records, tissue blocks and slides. Routine H&E slides were made and further classified as per WHO Histological Classification of skin tumors, 4th edition 2018.

Results and Observations: During the study period of two years, out of the total 100 cases of skin tumors, 61 were diagnosed to be as benign and 39 were diagnosed as malignant. The ratio of benign to malignant tumors was found to be 1.56:1.

Benign skin tumors*:* In the present study, benign tumors accounted for 61 cases (61%) out of 100 skin tumors with the peak incidence of benign skin tumors was found to be between 2nd and 5th decade and the peak incidence of malignant tumors were found to be between 4th and 6th decade. The study showed there was male predominance with 56 cases and 44 cases as females with male to female ratio of 1.27:1.

Table 1: Incidence of different benign tumors

Tumors	Number of cases	Percentage (%)
Keratinocytic	29	47.54
Seborrheic keratosis	15	24.59
Verruca vulgaris	7	11.47
Actinic keratosis	1	1.63
Lichen planus Like keratosis	3	4.91
Large cell acanthoma	2	3.27
Warty dyskeratoma	1	1.63
Adnexal	21	33.33
Hidradenoma	7	11.47
Syringoma	1	1.63
Poroma	1	1.63
Eccrine adenoma	4	6.55
Syringocystadenosus pappilliferum	1	1.63
Pilomatricoma	2	3.27
Trichoepithelioma	2	3.27
Cylindroma	2	3.27
Sebaceoma	1	1.63
Melanocytic	11	18.03
Nevus sebaceous	1	1.63
Nevus lipomatosus superficialis	1	1.63
Compound nevus	7	11.47
Intradermal nevus	2	3.27
Total	61	100

In the present study, benign keratinocytic tumors formed the majority with 29 cases with 47.54%, followed by adnexal tumors with 21 cases (33.33%) and melanocytic nevus with 11 cases (18.03%) cases of all benign cases. 15 cases (24.59%) of seborrheic keratosis were noted in the study. Ages ranged from 30-65 years of age with female to male ratio of 1.8:1 In the present study, 7 cases (11.47% of all benign skin tumors) of verruca vulgaris were observed. The study showed female predominance with female to male ration 1.14:1. Ages ranged from 10-65 years of age. 3 cases each of lichen planus like keratosis and acanthoma, 1 case of actinic keratosis,7 cases of compound nevus, 2 cases of intradermal nevus, 1 case each of nevus sebaceous and nevus lipomatosus superficialis were noted. In the present study, 29 cases of skin adnexal tumors were encountered, out of which 21 were benign and 8 were found to be malignant. Hair follicle tumors constituted 19% of the benign adnexal tumors out of which 2 cases each of pilomatricoma and trichoepithelioma were noted. Majority of cases were seen in males with male to female ratio of 3:1 ratio. Benign Sweat gland tumors were noted to be 16, constituted 76.1% of all benign adnexal tumors out of which 7 cases (43.75%) of hidradenoma, 4 cases(25%) of eccrine adenoma, 2 cases (12.5%) of cylindroma and 1 case (6.25%) each of syringoma, poroma and syringoform cystadenoma papilliferum. The male to female ratio noted was 1.6:1. 7 cases of hidradenoma, 1 case each of Syringoma, Syringocystadenoma papilliferum and poroma, 4 cases of eccrine adenoma and 2 cases of cylindroma were noted. Out of the 16 cases of benign adnexal skin tumors, 1 case of sebaceoma was found. Out of 27 adnexal tumors, benign tumors were found to be 21 (77.7%).

Malignant tumors of skin: In the present study, total of 39 cases of malignant skin tumors are observed. In the study, squamous cell carcinoma was the most common with 15 cases (38.46%), followed by 6 cases (15.38%) basal cell carcinoma, 4 cases (10.25%) of malignant melanoma, 2(5.12) each of adnexal Adenocarcinoma, Extramammary Paget disease, SCC in situ and verrucous carcinoma and 1 each case (2.56%) of spindle cell carcinoma, malignant eccrine poroma, porocarcinoma, Hidradenocarcinoma, malignant Syringocystadenoma papilliferum and metastatic carcinoma.

Table 2: Incidence of different malignant tumors of skin

Tumor	Number of cases	Percentage (%)
Keratinocytic	26	66.64
Squamous cell carcinoma	15	38.46
Verrucous carcinoma	2	5.12
Basal cell carcinoma	6	15.38
Bowen's disease (Squamous cell carcinoma in situ)	2	5.12
Spindle cell carcinoma	1	2.56
Adnexal	8	15.36
Adnexal Adenocarcinoma	2	5.12
Eccrine ductal carcinoma	1	2.56
Porocarcinoma	1	2.56
Extramammary Paget disease	2	5.12
Malignant syringocystadenosum papilliferum	1	2.56
Hidradenocarcinoma	1	2.56
Melanocytic	4	10.25
Malignant melanoma	4	10.25
Metastatic	1	2.56
Total	39	100

In the present study, 15 cases of SCC were noted accounting for 38.46% of all malignant skin tumors. It was found to be the most commonest skin cancer in this study. Male predominance was noted with M:F ratio of 2:1. Majority of the squamous cell carcinoma were well differentiated, accounting to 66.66% of all malignant skin tumors. 2 cases of verrucous carcinoma were encountered in the study. 6 cases of basal cell carcinoma were encountered and accounted for 15.38% of all malignant skin tumors of skin. In this study M:F was found to be 2:1. No cases of infiltrating and basosquamous carcinoma were noted. 4 cases of malignant melanoma were encountered and it accounted for 10.25% of all malignant skin tumors. Adnexal malignant skin tumors accounted for total 8 cases (15.36%) of all malignant skin tumors. In the present study, 2 cases each (25%) were noted in Adenocarcinoma and Extramammary Paget disease. 1 case each (12.5%) were noted in eccrine ductal carcinoma, malignant SCP, porocarcinoma and hidradenocarcinoma of all the malignant adnexal skin tumors. 2 cases of adnexal adenocarcinoma were observed in the present study, accounting to 5.12% of all malignant skin tumors and 25% of all adnexal malignant skin tumors. 1 case each of Hidradenocarcinoma, Eccrine ductal carcinoma, porocarcinoma were noted. Two cases each of Extra mammary Paget disease were noted. One case each of Malignant syringocystadenosum papilliferum and metastatic carcinoma were found.

Discussion: In this study, The WHO classification of skin tumors 2018 was followed. During the two year period, out of 1oo cases, benign keratinocytic tumors (29%) were most

common, followed by malignant keratinocytic tumors (26%), benign tumors of epidermal appendages (21%), Benign melanocytic tumors (11%), malignant melanoma (4%), malignant adnexal tumors (8%) and metastatic carcinoma (1%). The ratio of benign to malignant tumors was 1.56:1. Skin malignancies are rare in India as compared to western countries [1]. In India, skin malignancies constitute about 1-2% of all diagnosed cancers [2].

Table 3: Comparative study of different benign tumors of skin in India

Type of tumor	Farhat *et al.* [6]	Shivprasad *et al.* [4]	Kusuma stuti *et al.* [3]	Present study
Seborrheic keratosis	2.86%	57%	28%	24.59%
Verruca vulgaris	-	14%	4%	11.47%
Actinic keratosis	0.19%	29%	1%	1.63%
Melanocytic tumors	16.17%	-	39%	18.03%
Adnexal tumors	13.33%	-	4%	33.33%

In the present study, benign keratinocytic tumors accounted for 29 cases (47.54%) of all benign skin tumors. Seborhheic keratosis was found to be most common with 24.59% in our study, which is comparable to Kusumastuti *et al.* [3] which was 28%. M:F was found to be 1.56:1 which is comparable to study by Shivprasad *et al.* [4] with 1.4:1.

Verruca vulgaris accounted for 11.47% of benign tumors which is comparable to Shivprasad *et al.* [4] which was 14%. Actinic keratosis was 1.63% in the present study which is comparable to study by Farhar *et al.* [6] (0.19%) and Kusumastuti *et al.* [3] (1%). Melanocytic benign skin tumors accounted for 18.03% which is comparable to Farhar *et al.* [6] (16.17%). Adnexal skin tumors accounted for 33.33% in our study with Farhar *et al.* [6] (13.33%)

Table 4: Comparative incidence of different malignant tumors of skin in India

Type of tumor	Bhudraja SN *et al.* [7]	Chakravarthy RC *et al.* [8]	Deo SV *et al.* [9]	Present study
Squamous cell carcinoma	49.02%	64.3%	55.8%	38.46%
Basal cell carcinoma	17.65%	16.5%	18.1%	15.38%
Malignant melanoma	29.41%	8.69%	26.1%	10.25%
Adnexal carcinoma	0.98%	2.6%	-	15.36%

Most common was SCC (38.46%), BCC (15.38%), Verrucous carcinoma and Bowen disease (5.12% each) and Spindle cell carcinoma (2.5%) in keratinocytic malignant tumors. Among adnexal malignant skin tumors, 15.36% was found followed by malignant melanoma (10.25%) and metastatic carcinoma (2.56%). In the present study, 15 cases of SCC were noted accounting for 38.46% of all malignant skin tumors which are almost similar to findings by Chakravarthy *et al.* [8] (64.4%), Bhudraja *et al.* [7] (49.02%). BCC is the most common skin malignancy worldwide but in India various studies have reported SCC as the most prevalent skin malignancy [10].

Table 5: Comparison of sex distribution in SCC

Name of study	Males	Females
Ahmed *et al.* [11]	86%	14%
Laishram SN *et al.* [12]	73%	27%
Chakravarthy RC *et al.* [8]	71.62%	28.38%
Reddy DJ and Rao *et al.* [13]	61.84%	38.16%
Present study	66.66%	33.34%

In the present study, majority of patients were males with 56% and females with 44% females. This observation is similar to the studies done by Laishram SN *et al.* [12], Chakravarthy RC *et al.* [8] and Ahmed *et al.* [11]

Table 6: Comparison of site distribution in SCC

Site	Budharaja SN *et al.* [7]	Chakravorthy RC and Dutta [8]	Laishram *et al.* [12]	Present study
Head and neck	28%	21.6%	30%	6.66%
Extremities	56%	51.4%	32.5%	46.66%
External genitalia	4%	5.4%	30%	33.33%
Trunk	12%	21.6%	7.5%	13.33%

In the present study, Highest number of SCC occurred in extremities with 66.66% which is comparable with that of Budharaja SN *et al.* [7] (56%) and Chakravorthy RC and Dutta [8] (51.4%) External genitalia comprised of 33.33% of location sites which is comparable to Laishram *et al.* [12] (30%). Trunk region comprised of 13.33% cases which is almost similar to Budharaja SN *et al.* [7] (12%). SCC over head and neck region is comparatively less in the present study when compared to Budharaja SN *et al.* [7], Chakravorthy RC and Dutta [8] and Laishram *et al.* [12]. In the present study, the incidence of BCC was 15.38% which is almost similar to findings by Chakravorthy RC and Dutta[8] (12%) and Deo SV *et al.* [9] (18.1%). In our study, the maximum number of cases were noted in head and neck region with 83.33% which is almost consistent with Laishram *et al.* [12] (83%) and Chakravorthy RC and Dutta[8] (90%) In the present study, there was peak incidence in 6th decade which is similar to study by Solanki *et al.* [15], the peak incidence was 5th decade.

Tumors of Melanocytic System

In the present study, 11 cases of benign melanocytic tumors were observed with 11.47% cases diagnosed at epidermal nevus followed by 3.27% of intradermal nevus. One case each of nevus sebaceous and nevus liposus were observed with 1.63% each of all the benign melanocytic tumors. Peak incidence was noted in 20-40 years of age. 4 cases of malignant melanoma were observed in the present study, comprising of 10.25% of all malignant cases which is almost similar to findings by Laishram *et al.* [12] and Chakravorthy and Dutta [14] In the present study, incidence of malignant melanoma was more in males with a ratio of M:F as 3:1 which is similar to findings of Sampat and Sirsut [18], Chakravorthy [8] and Dutta [14], Mukopadhyay S *et al.* [16] and Katalinic A *et al.* [17] where M:F ratio was almost 4:1 In the study, majority of cases occurred in the age group 43-78 years (50%). 2 cases were found to be in the age group 40-59 and two were found to be in the age group 60-79 years. Similar observations were made by Mukopadhyay S *et al.* [16] (45.5%) and Katalinic A *et al.* [16] (38.8%) Majority of cases in your study were found to be in the extremities i.e. foot (75%) and one case on face (25%). Similar finding was

noted in study done by Mukopadhyay S *et al.* [16] where extremities was found to comprise of 80% and similarly Sampat and Sirsut [18] noted 82% in the extremities. In all the cases, the primary sites were considered and no metastatic sites were recorded.In the present study, out of all the total 4 cases, 3 cases were found to be on the foot accounting to 75% of all malignant melanoma cases. Similar findings to be noted in studies done by Sampat and Sirsut [18] (54%) Budharaja SN *et al.* [7] (83%) and Chakravorthy [8] and Dutta [14] (80%)

Tumors of Skin Appendages: Total 29 cases of appendageal tumors were observed, with 21 cases as benign (72.41%) and 8 cases of malignant (27.58%). In the study done by Sharma *et al.* [19] and Reddy *et al.* [13], benign tumors also formed the majority. The present study showed male predominance [14] with m:f ratio as 1.6:1. Sharma *et al.* [19] observed a ratio of 1.07:1. In the present study, sweat gland tumor was predominant which is similar to Sharma *et al.* [19] and Reddy *et al.* [13]

Benign tumors of skin appendages: Total of 21 cases were found to be benign, comprising to 33.33% of all the benign skin tumors. The occurrence of sweat gland tumors was 76.19% which was similar to findings by Reddy *et al.* [13] (73%). Almost similar findings were noted in Nair SP *et al.* [20] (57.56%) and Solanki RL *et al.* [15] (53.2%) In the present study, 4 cases of benign hair follicle tumors were also noted. 2 cases of pilomatricoma and 2 of trichoepithelioma were noted comprising 50% and 50%. In the study, pilomatricoma and trichoepithelioma were 50% each. In studies done by Solanki RL *et al.* [15], Reddy *et al.* [13] and Sharma *et al.* [19], the occurrence of pilomatricoma was higher followed by trichoepithelioma. Total of 16 cases with sweat gland differentiation accounting for 76.19% of all benign adnexal tumors. The occurrence of hidradenoma was 43.75% in the present study followed by 25% of eccrine adenoma and cylindroma was 12.5%. In the study by Sharma RL *et al.* [19], hidradenoma was the most common with 50% followed by 25% of chondroid syringoma and eccrine poroma. In the study by Nair SP *et al.* [20], syringoma was the most common tumor with 73.7%. In the study by Reddy *et al.* [13] hidradenoma was the most common comprising of 67.4%

Malignant appendageal skin tumors: In our study, out of total 29 appendageal skin tumors, 8 (27.58%) were found to be malignant. In the study by Reddy *et al.* [13], adnexal carcinomas accounted for 30.6% of adnexal tumors. In the study by Vaishnav and Dharkar [21], adnexal carcinomas accounted for 10.4% of adnexal tumors. In the present study, 8 cases of adnexal carcinomas were observed. In the study by Reddy *et al.* [13] sebaceous gland carcinomas were noted accounting to 57.7%, followed by sweat gland carcinomas with 42.3%. In our study, 100% cases were noted in sweat glands and similar observation was made by Vaishnav and Dharkar [21] where all the cases were of sweat gland carcinomas accountimg to 100%

Conclusion: The present study emphasizes the various patterns of skin tumors. It is important to classify them because the early diagnosis of malignant tumors can be of critical value to the patient.In our study SCC was the most common malignant skin tumor, unlike western countries where the most common malignant skin tumor is BCC. It is always challenging to diagnose the skin tumors clinically and histopathology is the gold standard to identify the architectural pattern of tumor and growth of infiltration to distinguish the malignant tumor.

References

1. Murphy GF, Sellheyer K, Mihm MC. The skin. In Robbins and Cotran Pathological basis of disease. 9th ed. Philadelphia : Saunders, 2015, 1141-1178
2. Koh D, Wang H, Lee J, Chia KS. Basal cell carcinoma, squamous cell carcinoma and melanoma of the skin : Analysis of the Singapore cancer Registry data British Journal of Dermatology. 1968-97;148:1161-1166
3. Kusumati. Cytological diagnostic accuracy in skin tumor, Folia Medica Indonesia, 49, 66-71
4. Shivprasad *et al.*, Benign tumors of skin, Global journal of medical research 2014, 14.
5. Emmett AJJ, O'Rourke MGE Malignant skin tumors. Churchill Livingstone, 1982, 1-478.
6. Fouzia Farhat, Qamar Jamal, Mahmood Saeed, Zia Ghaffar. Evaluation of skin eyelid lesions at a tertiary care hospital, JPMC Karachi. Pak J Ophthalmol 2010, Vol.26 No.2
7. Budharaja SN, Pillai VCV, Bedi BMS. Malignant neoplasms of skin in Pondicherry. Indian journal of cancer. 1968;284-295
8. Chakravorty RC. Malignant neoplasms of the skin in Eastern India. Indian journal of cancer. 1968;5:13-144
9. Deo SV. Surgical management of skin cancers : Experience from a regional cancer centre in North India. Indian journal of cancer. 2005;42:145-150
10. Schwartz RA. Keratoacnathoma continuing medical education. J AM Acad of Dermatol. 1994 Jan;30;1-17
11. Ahmed *et al.* Incidence of Squamous cell carcinoma in Karnataka, Global journal of medical research. 2014, XIV.
12. Laishram *et al.*, Pattern of skin malignancies in Manipur India, Journal of Pakistan association of Dermatologists, 2010, 128-132
13. Reddy MK, Vediath AJ, Nagarajan S, Aurora AL. A clinicopathological study of adnexal tumors of skin. Indian journal of medical research 1982 June, 882-889
14. David W. tumors of cutaneous appendages. In Weedon David's Skin Pathology. Churchill Livingstone, 2002, 859-916
15. Solanki RL, Gupta R. Basal cell epithelioma, Indian journal of Dermatol, 1989, 33-43
16. Mukhopadhyay S *et al.* A clinicopathological study of malignant melanoma w. Indian Journal of Pathology and Microbiology 2008 Oct, 485-488
17. Katalinic A. Epidemiology of cutaneous melanoma in Germany. British Journal of Dermatology 2003, 1200-1206
18. Sampat MB, Sisrat MV. Malignant melanoma of the skin in Indians. Indian journal of cancer, 1966, 228-53
19. Sharma *et al.*, Histopathological study of skin Adnexal tumors – Institutional study in South India, Journal of skin cancer, 2014.
20. Nair SP, A clinicopathological study of skin appendageal tumors, Indian journal of Dermatol, 2008, 108-550