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Histopathological Spectrum of Keratinocytic Tumors of Skin at Tertiary Care Centre

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Abstract

Background: Skin is the largest organ in the body and tumors can arise from any part of the skin. Skin cancer represents most common form of the malignancy in the world.1 In India, skin cancer constitutes 1 to 2 % of all cancer.2 Keratinocytic tumors are frequently occur. Kerationcytes are the predominant cell type in the epidermis, the outer most layer of the skin, constituting 90% of the cells found there.3 Keratinocytes are present in all layers of skin.

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

Results: Out of total 198 cases of keratinocytic tumors in the present study, 68 cases were benign and 130 cases were malignant.

Conclusion: Among benign tumors, skin tags were most common while squamous cell carcinoma was most common malignant tumor. Prevalence of benign tumors was more in younger age group while malignant tumors were more frequent in elderly persons.

Keywords: Keratinocytic tumors, Squamous cell carcinoma, Skin tags.

Introduction

Skin is the largest organ of the body and it comes in direct contact with the external environment, so it performs numerous important functions, most of which are protective. The ability to properly diagnose and treat tumors is a vital skill for all clinicians. Early diagnosis can reduce morbidity and cost. There is a definite role of pathologists in the management of tumors. But due to diversity of these tumors, there can be confusion regarding nomenclature of these tumors. As a result, the study of skin tumor is perhaps more interesting and challenging than any other tumors. The aim was to study the different histopathological features of keratinocytic skin tumors and to study the variations of skin tumors and analyze the tumors according to age, sex and incidence. Keratinocytic tumors comprise a large spectrum of lesions ranging from benign proliferations to malignant squamous cell carcinomas which show aggressive growth and have a metastatic potential. Seborrheic keratosis and skin tags are benign tumors. Actinic keratosis, pseudo epitheliomatous hyperplasia and bowen's disease are considered as premalignant conditions while squamous

cell carcinoma and basal cell carcinoma are keratinocytic or non melanoma cancer.

Despite their low mortality rate, they pose a significant public health problem, the main etiologic factor is UV radiation.

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 melanocytes, 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 keratinocytic 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	94	47.47
2	2018	162	49	24.74
3	2019	115	55	27.77
4	Total	528	198	100

In the present study, out of 528 cases, 198 cases of keratinocytic lesions were received. Maximum frequency of keratinocytic tumors cases was found in 2017 (47.47%).

Table 2: Distribution of benign and malignant keratinocytic tumors of skin.

S.N.	Type of cases	No. of cases	Frequency (%)
1	Benign	68	34.34
2	Malignant	130	65.65
3	Total	198	100

Out of total 198 cases, 68 cases (34.34%) were benign while 130 cases (65.65%) were malignant.

Table 3: Distribution of different keratinocytic lesions of skin

S.N.	Disease	Number of cases	Frequency (%)
1	Seborrheic keratosis	14	2.65
2	Acrochordon (skin tag)	38	7.19
3	Cutaneous horn	1	0.18
4	SCC	94	17.80
5	PEH	15	2.84
6	BCC	36	6.81

Among benign tumors, skin tags were most common (38 cases, 7.19%) while squamous cell carcinoma was most common malignant tumor (94 cases, 17.80%). Overall, squamous cell carcinoma was most common keratinocytic tumor.

Table 4: Sex wise distribution of different keratinocytic tumors

S.N.	Name of lesion	Male	Frequency (%)	Female	Frequency (%)
1	Seborrheic keratosis	8	6.20	6	8.69
2	Acrochordon	18	13.95	20	28.98
3	Cutaneous horn	1	0.7	-	-
4	SCC	73	56.58	21	30.43
5	PEH	14	10.85	1	1.44
6	BCC	15	11.62	21	30.43
7	Total	129	100	69	100

In both males and females, most common benign tumor was acrochordon having 18 cases (13.95%) and 20 cases (28.98%) respectively while most common malignant tumor was squamous cell carcinoma in males (73 cases, 56.58%). In females, both squamous cell

carcinoma and basal cell carcinoma showed equal frequency (30.43%).

Table 5: Age wise distribution of different keratinocytic tumors of skin

S.N.	Age group (years)→ Name of lesion(↓)	≤10	11-20	21-30	31-40	41-50	51-60	61-70	>70
1	Seborrheic keratosis	1	-	1	1	2	3	4	2
2	Acrochordon	-	3	10	9	6	5	2	3
3	Cutaneous horn	-	-	-	1	-	-	-	-
4	SCC	-	-	5	7	17	25	24	16
5	PEH	-	-	1	4	3	4	3	-
6	BCC	-	-	-	3	5	3	9	16
7	Total	1	3	17	25	33	40	42	37

Maximum number of keratinocytic tumors were found in the age group of 61-70 years (42 cases, 21.21%) followed by age group of 51-60 years (40 cases, 20.20%) and >70 years (37 cases, 18.68%) . Upto 10 years of age, only 1 case of seborrheic keratosis was found. Between 11-40 years of age, skin tag was most common keratinocytic tumor. In the age group of 41-70 years, squamous cell carcinoma was most frequent. After 70 years, cases of both squamous cell carcinoma and basal cell carcinoma were in maximum number.

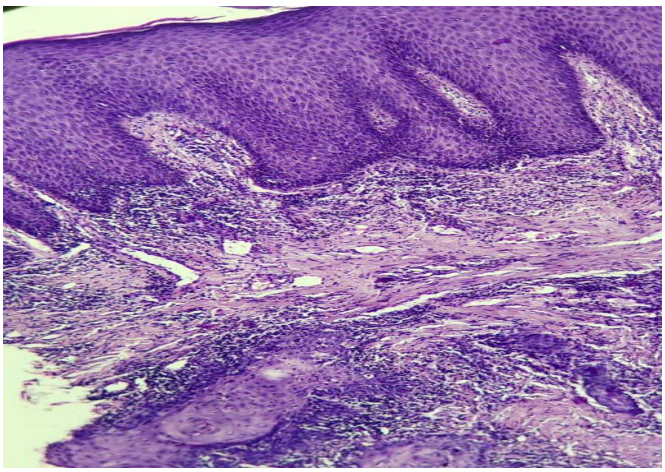


Figure 1: Psuedoepitheliomatous hyperplasia-showing tongue like epithelial proliferation and inflammatory infiltration. (H&E, 10x)

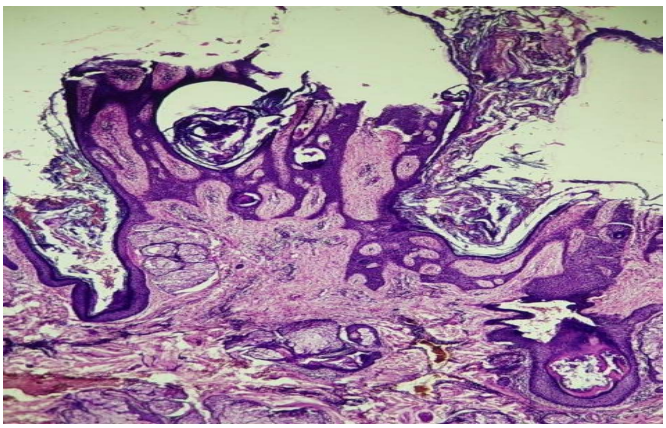
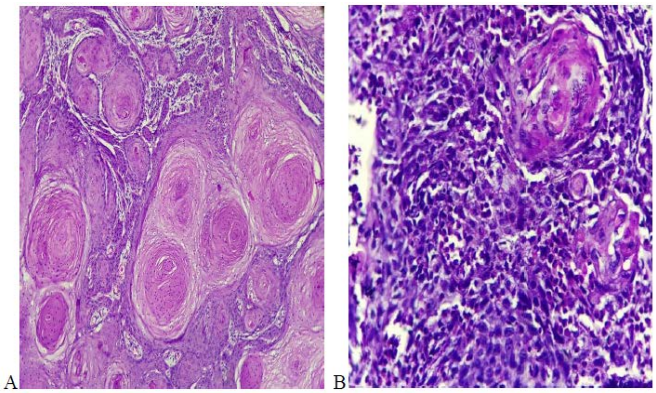


Figure 2: Seborrheic keratosis (acanthotic type)-showing horn cyst

and psuedohorn cyst formation. (H&E, 10x)



A B

Figure 3: (A) Well differentiated squamous cell carcinoma - showing numerous keratin pearls formation and mild cellular typia. (H&E, 10x) (B) Moderately differentiated squamous cell carcinoma - showing keratin pearl formation and moderate degree of cellular atypia. (H&E, 40x)

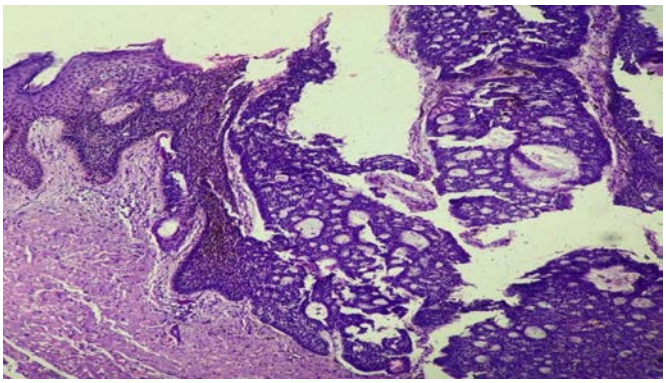


Figure 4: Basal cell carcinoma (adenocystic type)-showing basal cell hyperplasia, peripheral palisading, retraction artefact & glandular pattern. (H&E, 10x)

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 6: Comparsion of frequency of keratinocytic tumors

S.N.	Name of study	Frequency
1	Khandare M et al[4]	64.8%
2	Present study	37.5%

In this study, keratinocytic (198 cases, 37.5%) tumors were the most common. These observations were comparable with a study conducted by Khandare M et al4 in which keratinocytic tumors (64.8%) were in maximum number.

Table 7: Comparision of cases of keratinocytic tumors with different studies

S.N.	Name of tumor	Chakravarthy RC et al[5]	Bari V et al[6]	Present study
1	Squamous cell carcinoma	64.3%	45.9%	56.96%
2	Basal cell carcinoma	16.5%	34.4%	21.81%

In this study, squamous cell carcinoma has accounted the maximum number of the cases among malignant tumors containing 56.96% followed by basal cell carcinoma (21.81%). These findings were similar to the observations made by Chakravarthy RC et al5 and Bari V et al.6

Table 8: Comparison of prevalence of basal cell carcinoma in male and female.

S.N.	Name of study	Male	Female
1	Sonal Tina Lal et al[7]	44.05%	55.95%
2	Present study	41.66%	58.33%

Basal cell carcinoma was the second most common malignant tumor of skin in this study with 41.66% cases of male and 58.33% cases of female. Male to female ratio was 0.7:1. This finding was comparable with the study conducted by Sonal Tina Lal et al7 in which 44.05% cases were male and 55.95% cases were female. Male to female ratio was 0.79:1.

Conclusion

Squamous cell carcinoma was most common keratinocytic tumor and also most common malignant tumor. Among benign tumors, fibroepithelial polyps were most frequent.

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