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Original Article

A clinico-pathological study of cutaneous tumors in a tertiary care centre of Eastern India

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Abstract

Objective To study the clinical profile of various benign and malignant cutaneous tumors and establishing their clinico-pathological correlation.

Methods A total of 102 consecutive patients of cutaneous tumors fulfilling the eligibility criteria were taken in the present study. Informed consent, detailed history, clinical examination and routine laboratory investigations were carried out on requirement basis. Skin biopsy was taken from representative areas and submitted for routine processing. Correlation of clinical findings with histopathological results was done to establish a final diagnosis.

Results Out of total 102 patients, 80.4% were presented with benign conditions while 19.6% were presented with malignant conditions. Most common type of tumor observed in present study was Keratinocytic (42.2%) followed by Melanocytic (18.6%). Most common individual tumor observed was Seborrheic Keratosis (27.5%), followed by Melanocytic Nevus (14.7%) and Syringoma (11.7%), while (8.8%) and (5.9%) cases of SCC and BCC were observed. Most of the pathologies were presented as either papule (55.9%) or plaque (21.6%). Growth was observed in 6 cases of SCC and two cases of melanoma.

Conclusion Seborrheic keratosis is the commonest benign tumor while SCC and BCC were the maximum skin tumors in our study. Histopathological study is thus most important part in the diagnosis of skin tumors.

Key words
Cutaneous tumors; Histopathology; Seborrheic keratosis; Squamous cell carcinoma; Basal cell carcinoma.

Introduction

A tumor is an abnormal, uncoordinated proliferation of tissues that exceeds the normal pattern. Although majority of the tumors retain a similarity from the parent tissue, they can show structurally extraordinary variation and which causes difficulties in some cases to establish a definitive histopathological diagnosis.[1] The terminology of benign tumor is used to describe where the cells remain at originating site, forming a mass of similar type of tumor cells. Malignant tumors are formed when they have the ability to invade the basement membrane and this has capability to metastasize to other organs through the lymphatic's and blood vessels. Moreover, malignant tumors commonly shows rapid growth and less differentiation than the tumors which are considered benign, which is reflected histo-immunopathologically by higher mitotic rates, cellular and nuclear pleomorphism and abnormal mitosis.[1] The skin is the largest organ in the body. It has complicated structure and serves many functions.[2] Cutaneous tumors

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range from small papules to large fungating masses. Certain tumors are easily recognized clinically based on the characteristic site of presentation, size, color, distribution and symptoms but still to confirm the diagnosis, histopathological correlation is important. Proper diagnosing and treatment of the tumors requires a vital skill for all clinicians. Any lesion which has a diagnostic dilemma, after taking thorough history and clinical examination, should undergo biopsy for histopathological confirmation and to rule out malignancy.[3] Among Indian population, malignant skin tumors constitute 1-2% of all cancers. As per various cancer registries in India, the cumulative incidence of skin cancer range from 0.5 to 2 per 100000 populations.[4] Non-melanoma Skin Cancers (NMSC) is often associated with substantial morbidity of functional loss and disfigurement. Moreover the treatment is very costly. Hence, early diagnosis can reduce morbidity and out of pocket expense. Al of this aspect made the study of cutaneous tumor more interesting and challenging than any other tumors of the body.

Material and Methods

The present study was a hospital based observational study .It was conducted at Department of Dermatology, Venereology and Leprosy of a tertiary care Centre of Eastern India for a period of 1 year (March 2019-Feb 2020). 102 willing cases of cutaneous tumors attending Dermatology OPD (doubtful cases confirmed by histopathology examination) are included in the study.

After taking informed consent, detail history, clinical examination and routine laboratory investigations including complete blood count, platelets, Erythrocyte sedimentation rate, blood sugar estimation, liver function test, renal function test, chest x-ray, USG, FNAC and any other test were carried out on requirement basis. Clinical photograph of patients was recorded in digital camera. Skin biopsy from doubtful cases was taken from representative areas. Correlation of clinical findings with histopathological results was done to establish a final diagnosis. All the data was entered in Microsoft Excel sheet and then transferred to MedCal for statistical analysis.

Results

Mean age of study subjects was 40.15 years with slight male predominance (males – 57.8% to females – 42.2%). Out of total 102 patients, 82 (80.4%) were presented with benign conditions while 20 (19.6%) were presented with malignant conditions. Most common type of tumor observed in present study was Keratinocytic (42.2%) followed by Melanocytic (18.6%), Adnexal (14.7%), Vascular (8.8%), neural tumor (7.8%), smooth muscle tumor (5.9%) and Lymphocytic was observed (1.9%) **(Figure 1)**.

Most common individual tumor observed was Seborrheic Keratosis (27.5%) **(Figure 1,2)**, followed by Melanocytic Nevus (14.7%) and Syringoma (11.7%) **(Figure 3)**.

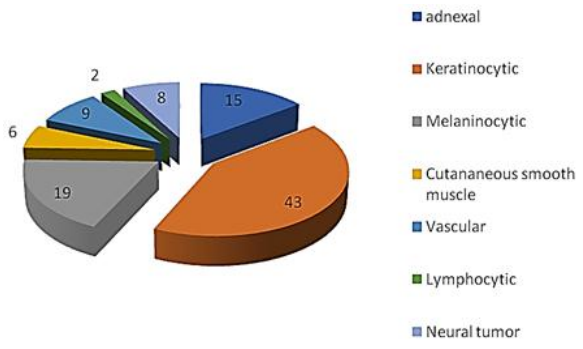

Figure 1 Tumors as per tissue origin.

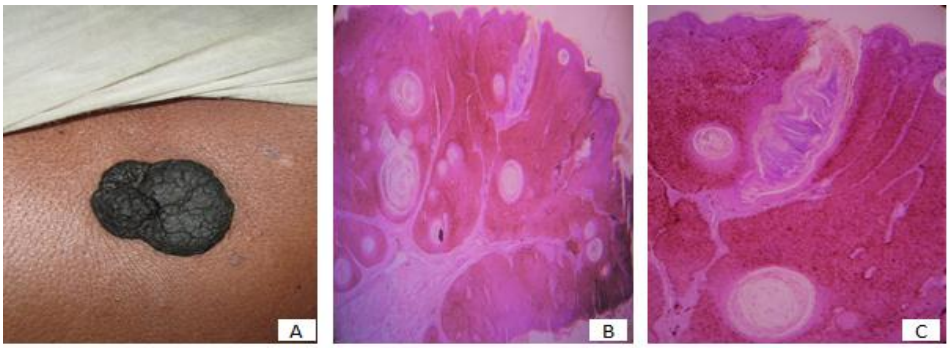

Figure 2 Seborrhic keratosis. A) Clinical Image B) HP image in low power(10X) showing keratin filled invaginations and horn cyst C) HP image in High Power(40X).

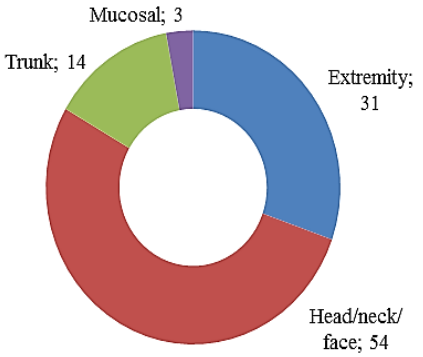

Figure 3 Location of tumors as per site.

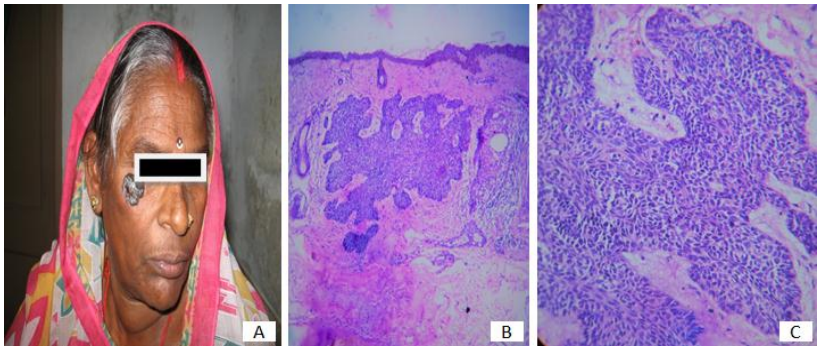

Figure 4 Basal Cell Carcinoma (A) Clinical Image (B) HP image low Power showing nest of basaloid cells (C) HP image High Power showing palisading of cells at the peripheryand haphazard arrangement at the centre.

9 cases (8.8%) and 6 cases (5.8%) of SCC **(Figure 5,6)** and BCC **(Figure 7)** were observed respectively **(Table 1)**. Most common histological diagnosis reported was of seborrheic keratosis. Out of 15 cases of Melanocytic Nevus, 9 were intra dermal and 6 were compound nevus. Out of 6 cases of BCC, 5 were nodular and 1 case was of superficial plaque BCC **(Table 2)**. Head, neck and face (56.7%) were the most common site involved in most of the pathologies followed by extremities (30.4%). Oral mucosa was involved in SCC **(Table 3)**. Most of the pathologies were presented as either papule (55.9%) or plaque (21.6%). Growth on oral mucosa was observed in 2 cases of SCC **(Table 4)**. Majority of the pathologies were clinically asymptomatic (67.6%). Ulceration is seen 12.7% cases mainly SCC and hemangioma and 1 case melanoma. Itching is seen in irritated seborrheic keratosis, neurofibroma and Mycosis Fungoides. Pain and bleeding were associated with pyogenic granuloma.

Discussion

The present study aimed at study the clinicopathological features of cutaneous tumors. Mean age of study subjects in present study was 40.15 years 57.8% males to 42.2% females. In a study "Skin Tumors – Histopathological Review of 125 Cases" by Bari V *et al.* tumors of skin were present in all the age groups (mean 46.1 years). Maximum number of tumors was found in third decade in case of benign tumors (20.3%) and seventh decade in case of malignant tumors (37.7%). They found that both benign and malignant tumors of skin were common in males than in females.[5] The incidences in the male and female in the present study are comparable with those

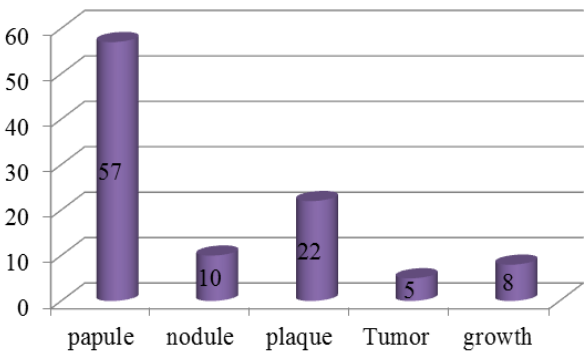

Figure 5 Gross morphology of various tumors.

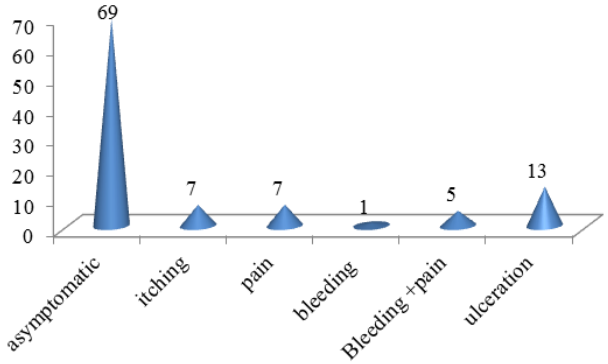

Figure 6 Symptoms of various tumors.

reported by, Reddy DJ and Rao KV,[6] Khalid M *et al;*[7] Ochicha O *et al*.[8] Chakravarthy RC *et al.*[9] reported 71.62% and 28.38% cases in male and female respectively. In a study done by Bari *et al.*[5] it was found that the occurrence of benign tumor was 51.2 % and malignant tumors were found to be 48.8%, while the incidences of benign and malignant tumors in the study done by Har-Shai *et al*.[10] was 68.4% and 31.6%. The malignant neoplasm of skin in different hospital based studies in India[9,11-14] ranged from 1.87% to 8.84%. In our study, 80.4% cases were presented with benign conditions while 19.6% were presented with malignant conditions. In our present study seborrheic keratosis was the most common individual tumor observed, present in 28 patients (27.5%). Most cases were observed above 50 years of age with head, neck and face being the most common site involved. All showed typical "stuck on appearance". Histologically, eight were of acanthotic type, three were of irritated type and one was keratotic type. Two of them showed melanin pigment. Our study supports the fact that histologically acanthotic type is the most commonly type.[15] In the present study, 9 cases of squamous cell carcinoma were encountered and all of them were above 50 years of age. The squamous cell carcinoma showed female preponderance (5/9) with commonest site being oral mucosa and presented as ulcerative growth. On histopathological examination, majority were diagnosed as well differentiated squamous cell carcinoma. Squamous cell carcinoma is the most common malignant skin tumor in India as its incidence ranges from 49.02% to 64.3% as study done by[19,10,12] Budhraja SN *et al;* Chakravarthy R C *et al.* and Deo SV *et al*. Present study shows Squamous Cell Carcinoma(SCC) being the most common malignant skin tumor (45%) which is followed by Basal Cell Carcinoma (BCC) which is 30%.

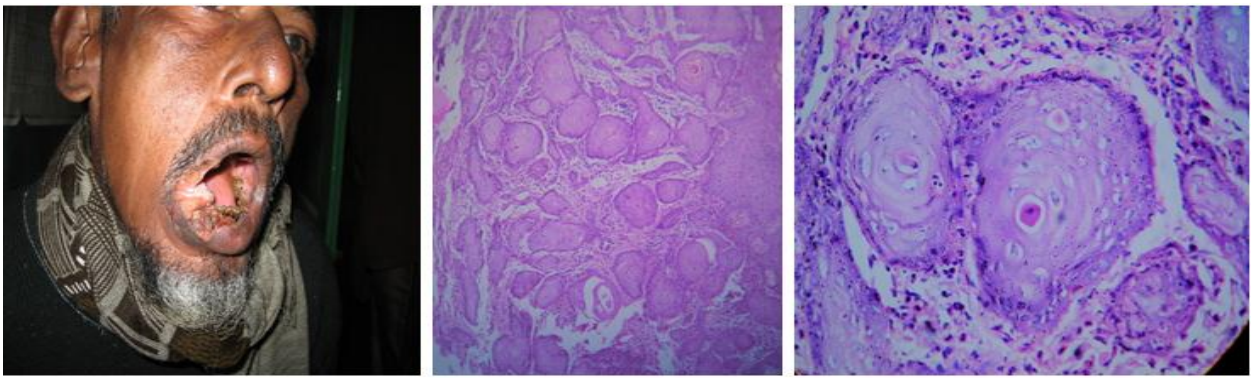

Figure 7 Squamous cell carcinoma (A) Clinical Images (B) HP image Low Power (10X) showing nests of squamous epithelial ells that arise from epidermis and extend to dermis.(C) HP image High Power showing horn pearl.

Table 2 Tumors as per location.

Diagnosis	*Site*				*Total*
	Extremity	*Head/neck/face*	*Trunk*	*Mucosal*	
Seborrheic keratosis	7	21	0	0	28
Melanocytic nevus	0	11	4	0	15
Syringoma	3	9	0	0	12
SCC	6	1	0	2	9
BCC	0	6	0	0	6
Eccrine poroma	1	0	0	0	1
Leiomyoma	3	0	0	0	3
Neurofibroma	2	1	5	0	8
Pyogenic granuloma	4	0	0	1	5
Hemangioma	1	3	0	0	4
Dermal nevus	0	0	2	0	2
Dermatofibroma	2	0	1	0	3
Melanoma	2	0	0	0	2
Mycosis fungoides	0	0	2	0	2
Hidrocytoma	0	2	0	0	2
Total	31	54	14	3	102

Table 3 Table showing various tumors as per clinical appearances.

Diognosis	*Papule*	*Nodule*	*Plaque*	*Tumor*	*Growth*	*Total*
Seborrheic keratosis	20	0	8	0	0	28
Melanocytic nevus	15	0	0	0	0	15
syringoma	12	0	0	0	0	12
SCC	0	0	3	0	6	9
BCC	3	0	3	0	0	6
Eccrine poroma	1	0	0	0	0	1
Leiomyoma	0	3	0	0	0	3
Neurofibroma	6	0	2	0	0	8
Pyogenic granuloma	0	0	0	5	0	5
Hemangioma	0	0	4	0	0	4
Dermal nevus	0	2	0	0	0	2
Dermatofibroma	0	3	0	0	0	3
Melanoma	0	0	0	0	2	2
Mycosis fungoides	0	0	2	0	0	2
Hidrocytoma	0	2	0	0	0	2
Total	57	10	22	5	8	102

On comparison with[7,8,16,17] studies of other countries, BCC was the commonest malignant tumor in all other studies (Khalid *et al;* Soomero *et al.* 2009 and Zohreh *et al.*) except for the study by Ochicha *et al;* showing SCC as more common than BCC. The incidence was peak in seventh decade of life and head and neck region are the commonest place where the tumor arise. The nodular growth was the commonest in the gross findings and out of 6 cases of BCC, 4 showed peripheral palisading of the nuclei and clefting artifact. The incidence of basal cell carcinoma in Indian literature ranges from 16-28%.[11,12,18] In the present study, incidence of basal cell carcinoma was 30% of all malignant tumors of the skin which is higher in comparisons to the study done by Solanki RL *et al;* Budhraja SN *et al*. and Deo SV *et al*. [11,12] In comparison to western literature like Casson P *et al;*[19] our incidence is relatively less. The reasons for higher incidence of BCC in the western countries may be prolonged exposure to strong sunlight and white colored skin. Solanki *et al;* Soomero FR *et al.* and Raasch *et al.* reported

Table 4 Symptoms of various cutaneous tumors.

Diagnosis	*Symptoms*						*Total*	*P value*
	Asymptomatic	*Itching*	*Pain*	*Bleeding*	*Bleeding +pain*	*Ulceration*		
Seborrheic keratosis	25	3	0	0	0	0	28	.004059
Syringoma	12	0	0	0	0	0	12	
Melanocytic nevus	15	0	0	0	0	0	15	
SCC	0	0	0	0	0	9	9	
BCC	4	0	0	0	0	2	6	0.957802
Eccrine poroma	0	0	1	0	0	0	1	
Leiomyoma	0	0	3	0	0	0	3	
Neurofibroma	6	2	0	0	0	0	8	0.643303
Pyogenic granuloma	0	0	0	1	4	0	5	
Hemangioma	2	0	0	0	0	2	4	0.441492
Dermal nevus	2	0	0	0	0	0	2	
Dermatofibroma	0	0	3	0	0	0	3	
Melanoma	1	0	0	0	1	0	2	0.590043
Mycosis fungoides	0	2	0	0	0	0	2	
Hidrocytoma	2	0	0	0	0	0	2	
Total	69	7	7	1	5	13	102	

maximum number of BCC over the face, which is consistent with our findings.[16,18] Nodular BCC was the commonest histological type observed in our study which is comparable to above studies.

Conclusion

SK is the most common benign tumor while SCC and BCC were the most common malignant skin tumors in India. Histopathological study is a very important step in the diagnosis of skin tumors. Diagnosis of skin tumors requires thorough clinico pathological correlation. The demographic profile of patients, associated risk factors, and histopathological confirmation of tumors can guide towards timely diagnosis, definite and adequate management, and aid in meticulous follow-up, thereby improving the overall prognosis for cutaneous neoplasm, particularly malignant ones.

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