A CLINICOPATHOLOGICAL STUDY AND MANAGEMENT OF SKIN MALIGNANCIES

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ABSTRACT

BACKGROUND

Skin cancer is the most common form of cancer globally accounting for at least 40% of cases. It is especially common among people with light skin. Non-melanoma skin cancers, about 80% are basal cell cancers and 20% squamous cell cancers. Basal cell and squamous cell cancers rarely result in death. Australia and New Zealand have the highest rates of melanoma in the world.

The aim of the study is to study the prevalence, clinicopathological presentation and management of skin malignancies.

MATERIALS AND METHODS

This is a prospective study conducted for a period of 2 years and analysed 30 cases of malignant skin tumours proven on histopathology with respect to prevalence, age, sex distribution, common site of occurrence and treatment modalities adopted.

RESULTS

In the present study, 47% of squamous cell carcinoma occurred between 50-59 years of age, more common in males with site predilection of lower limbs. Basal cell carcinoma was more common in the age group, 60-69 years (55.6%) and more common in females (66.7%). The commonest site of occurrence of basal cell carcinoma was in the lower eyelid. Malignant melanoma was more common in the age group 50-59 years (75%) and more common in females (75%). The commonest site of occurrence of melanoma was lower extremity. All the cases were treated with surgery.

CONCLUSION

Non-melanoma skin malignancies like squamous cell carcinoma and basal cell carcinoma are more common than melanoma and have good prognosis. The mean age of occurrence of the tumours was around 60 years of age and responded well with surgical resection.

KEYWORDS

Basal Cell Carcinoma, Squamous Cell Carcinoma, Melanoma, Prevalence, Management.

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BACKGROUND

Skin contrary to the ubiquitous simplistic concept is a remarkably heterogenous organ. Non-melanoma skin cancer largely composed of squamous cell carcinoma and basal cell carcinoma. They compose 1-2% of cutaneous neoplasm in Indians. Basal cell carcinoma contributes to 20% to 30% and squamous cell carcinoma 30% to 65% in Asian Indians. Among skin cancers, melanoma is the most lethal. It comprises only 3% of all skin cancers diagnosed each year.[1,2]

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Aim of the Study

To study the prevalence, clinical presentation and management of skin malignancies.

MATERIALS AND METHODS

This is a prospective study conducted for a period of 2 years. Primary skin malignancies were included in the study. Tumours arising from mucocutaneous junctions are not included in the study. On admission, a detailed history was recorded, local examination included size, shape, extent of the lesion, fixity, involvement of regional lymph nodes and modes of therapy. A total of 30 cases of primary skin tumours were analysed.

RESULTS

A total of 30 cases were analysed. The prevalence of primary malignant skin tumour is 0.41% of all surgical admission.

Male-to-female ratio being 1.7:1. These tumours are more common in the age group 50-59 years (43.3%) (Table 1).

Age	Sex Distribution		Total	Percentage
	Male	Female		
40-49	2	3	5	16.7
50-59	11	2	13	43.3
60-69	5	6	11	36.7
70-79	1	0	1	3.3
Total	**19**	**11**	**30**	**100**

Table 1. Age and Sex Distribution

In the present study, skin malignancies were more common in agricultural field workers. This is probably due to increased exposure to sun and thus UV radiation on working outside long hours (Table 2).

Occupation	Sex Distribution		Total	Percentage
	Male	Female		
Agriculture	15	6	21	70
Coolie	3	1	4	13.33
Housewife	0	4	4	13.33
Employee	1	0	1	3.33
Total	**19**	**11**	**30**	**100**

Table 2. Occupation

The commonest clinical presentation of skin tumours was ulceroproliferative lesion (60%) followed by ulcerative lesions (26.7%) (Table 3).

Symptom	Number	Percentage
Ulcerative	8	26.7
Ulceroproliferative	18	60
Nodule	1	3.3
Swelling with ulcer	3	10
Total	**30**	**100**

Table 3. Clinical Presentation

Squamous cell carcinoma was more common in lower extremity, basal cell carcinoma was more common on the face and malignant melanoma on lower extremity (Table 4).

Site	Squamous Cell Carcinoma	Basal Cell Carcinoma	Malignant Melanoma	Total
Face	2	9	1	12
Back and gluteal region	1	0	0	1
Upper limb	3	0	0	3
Lower limb	11	0	3	14

Table 4. Site Distribution of Various Skin Malignancies

Of the malignant skin tumours, 56.7% were squamous cell carcinoma, 30% were basal cell carcinoma and 13.3% were malignant melanoma (Table 5).

Type	Number of Cases	%
Squamous cell carcinoma	17	56.7
Basal cell carcinoma	9	30
Malignant melanoma	4	13.3
Total	**30**	**100**

Table 5. Prevalence of Primary Malignant Tumours of Skin

In the present study, 47% of squamous cell carcinoma occurred between 50-59 years of age and more common in males (82.3%). Squamous cell carcinoma was more common in lower limbs (64.7%) followed by upper extremity (17.7%). Basal cell carcinoma was more common in the age group, 60-69 years (55.6%) and more common in females (66.7%). The commonest site of occurrence of basal cell carcinoma was in the lower eyelid and cheek (56.6%). Malignant melanoma was more common in the age group 50-59 years (75%) and more common in females (75%). The commonest site of occurrence of melanoma was lower extremity (75%) (Table 6, 7).

Type of Tumour	Age Distribution				Sex Distribution	
	40-49 Years	50-59 Years	60-69 Years	70-80 Years	Male	Female
Squamous cell carcinoma	3 (17.6%)	8 (47%)	5 (29.5%)	1 (5.9%)	14 (82.3%)	3 (17.7%)
Basal cell carcinoma	2 (22.2%)	2 (22.2%)	5 (55.6%)	0	3 (33.3%)	6 (66.7%)
Malignant melanoma	1 (25%)	3 (75%)	0	0	1 (25%)	3 (75%)
Total	**6**	**13**	**10**	**1**	**18**	**12**

Table 6. Age and Sex Distribution of Various Malignant Skin Tumours

Site of Tumour	Number of Cases	Percentage
Squamous Cell Carcinoma		
Face	2	11.8
Back and gluteal	1	5.8
Upper extremity	3	17.7
Lower extremity	11	64.7
Basal Cell Carcinoma		
Nose	2	22.2
Lower eyelid and cheek	5	56.6
Upper lip	2	22.2
Malignant Melanoma		
Face	1	25
Back and gluteal	0	0
Upper limb	0	0
Lower limb	3	75

Table 7. Site of Various Malignant Skin Tumours

DISCUSSION

Rates of squamous cell carcinoma and basal cell carcinomas are increasing due to increased exposure to ultraviolet radiation. Ozone depletion is increasing UV radiation and also tanning sessions. One tanning session is enough to damage DNA keratinocytes.[3,4]

Basal cell carcinoma is an indolent primary cutaneous neoplasm arising from the epithelium of hair follicle and has low metastatic potential. Although, the precise incidence is difficult to estimate, it represents 75% of the non-melanoma skin cancer with low mortality. Imaging plays an important role in staging. High frequency ultrasound (15-22 MH_z) has promising role in the evaluation of basal cell carcinoma. Assessment of depth of invasion with high frequency USG correlated well with histopathology, which is the gold standard.[5,6,7]

Basal cell carcinoma in 70% of cases affects face, most commonly the nose and eyelid; other sites involve are the trunk and extremities. Basal cell carcinoma is divided into nodular (60%), superficial (30%) and less common subtype are morphea form, microinsular, infiltrative BCC and fibroepithelioma of Pinkus.

The histological subtype and location of tumour is very important for management and for this biopsy is very much necessary. Basal cell carcinoma prognosis depends on the site, histological subtype (nodular, superficial types (low risk) and morphea type (high risk)); perivascular and perineural invasion; primary or recurrent basal cell carcinoma and history of immune suppression or radiation. On histopathology, if there is lymphovascular invasion, then the sentinel node has to be assessed to rule out metastasis. Superficial basal cell carcinoma can be treated by cryosurgery or photodynamic therapy. Most of the subtypes are amenable to wide surgical excision and tumour greater than 2 cm. Morphea form or micronodular subtypes need Mohs micrographic surgery. Clinical follow up at 6-12 months intervals are recommended for life; prognosis is excellent.[8,9]

Squamous cell carcinoma is a malignant tumour arising from keratinocytes of epidermis like basal cell carcinoma, exposure to UV radiation is the most common cause. Lifetime risk of squamous cell carcinoma is 9% to 14% in men and 4% to 9% among women.[10] UV radiation produces mutations in the DNA by forming thymidine dimers in the P53 tumour suppressor gene. Squamous cell carcinoma is more common in middle aged and elderly adults and more in men. The most common sites involved are scalp, dorsum of hands, ears, lower lip, neck, forearm and legs starts as erythematous papule becoming ulceroproliferative nodule. Risk factor for metastasis include size of the tumour >2 cm, site (lip, ear), immune suppression, history of prior treatment and aggressive histological features (depth >4 mm), poorly-differentiated appearance and perineural invasion. Additional variables that put squamous cell carcinoma in the high-risk category include cause (scar, chronic ulcer, sinus tract, radiation dermatitis and rapid growth pattern.[11]

Adinarayan M et al[12] in their study analysed non-melanoma skin cancer for a 5-year period and constituted 51.6% of total skin malignancies. 83.9% of cases were squamous cell carcinoma and 16.1% of cases were basal cell carcinoma. Common age groups had 80% in 60-80 yrs. of age for basal cell carcinoma and 40-60 yrs. (50%) for squamous cell carcinoma. Most common site was face.

In a retrospective study of 10 years period from 2003-2013 from North India, basal cell carcinoma was seen in 67.5% of cases and 32.5% of squamous cell carcinoma. Binayak Baruah et al[13] analysed 37 cases of non-melanoma skin cancer during 3-year period, 24 cases were squamous cell carcinoma and 13 cases were basal cell carcinoma. The most common age of squamous carcinoma was 40-50 years and basal cell carcinoma was 61-70 years. Most common site for both squamous cell carcinoma and basal cell carcinoma was upper lip (75%) and 16.7% in the lower lip and 8.3% in cheek.

Balvinder Kaur Brar et al[14] reviewed 52 cases of histologically-proven skin malignancies. Basal Cell Carcinoma (BCC) was found to be the most common skin cancer in Malwa belt of Punjab, followed by Squamous Cell Cancer (SCC) of skin contrary to the present study where squamous cell carcinoma was more common. Majority of skin cancers affected elderly age group, median age affected being about 60 years for non-melanoma skin cancers. Male preponderance was seen in squamous cell carcinoma and

basal cell carcinoma was more common in females. Head and neck region was found to be the most common site affected by BCC as well as SCC.

Squamous cell carcinoma constituted 56.7% of cases in the present study. Squamous cell carcinoma occurred in the age group between 50-59 yrs. (47%) and youngest patient suffering from squamous cell carcinoma was aged 45%. The percentage of males affected were 82.3% and females 17.7%. The increased rate could be explained due to outdoor activity and occupation. Squamous cell carcinoma was most commonly seen in lower limbs followed by upper extremity.

In the present study, the age distribution of basal cell carcinoma was from 40 yrs. to 60 yrs.; 55.6% belongs to age group 60-69 years and more prevalent in female. 56.6% of cases occurred in the lower eyelid and cheek followed by nose and upper lip. The prevalence of basal cell carcinoma was 30% more commonly seen in agriculture workers with ulceroproliferative lesions. All were resected with surgery with no metastasis.

Melanoma arises from melanocytes and usually occurs in the mouth, intestine, eye, legs, back or from the mole on the skin. Melanoma is suspected when mole increases in size with irregular edges, change in color and itchiness of skin breakdown. UV exposure is a known risk factor for melanoma. Geographic location is known to influence UV exposure and the distribution of the incidence of melanoma. Advanced-stage cutaneous melanoma has a median survival time of less than 1 year. Surgical removal, radiotherapy, chemotherapy, targeted therapies and a variety of immunotherapies have been utilised in the treatment of melanoma. An important feature of melanoma is that the incidence rate is highest in lighter skinned patients and is much rarer in darker-skinned individuals. It is estimated that the annual increase in the incidence rate of melanoma has been approximately 3-7% per year worldwide for Caucasians.[15] Continuous sun exposure (occupational) was associated with risk of head and neck melanoma and total sun exposure was associated with an increased risk of melanoma on the limbs.[16] The overall prognosis is dependent on certain other parameters like sex, anatomic location, size, level of invasion, thickness, type of the primary ulceration and number and status of regional nodes.[17]

Melanoma is a relatively uncommon skin cancer in geographical locations like India. Its highest prevalence is seen in sixth decade as observed in our series.[18,19,20] Wanebo et al reported female preponderance in their small series, which was comparable with the present study.[21] Balvinder Kaur Brar et al,[14] malignant melanoma was third most common with median age affected being about 60 years. Malignant melanoma occurred more on the extremities and trunk, which was comparable with the present study. Primary radical surgery was done in all the patients while radiotherapy as the primary modality was used in five patients in the present study, which was comparable with study by Kuldeep Sharma et al.[22]

CONCLUSION

Prevalence of skin cancers has been increasing since the last few decades worldwide. Nonmelanoma Skin Cancer (NMSC) is the commonest variety of cutaneous malignancy. Skin cancers are lower among Indians due to the protective effects of melanin. The epidemiological characteristics of common skin cancers in India are distinct from global trends and need to be reviewed in detail. The age of distribution, site affected and stage of disease helps in determining the prognostic outlook for patients and planning an effective management.

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