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Clinical study of basal cell carcinoma in head & neck region in western Rajasthan

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Abstract

Introduction: Basal Cell Carcinoma in the Head and Neck region is one of the most common skin cancer encountered in clinical practice. The main peculiarities of BCC are :- its frequent recurrence, long development process, localization in cosmetically important places such as nose lips, forehead, cheeks, eyelids, ears etc.

Aims & Objective: The Study is a Clinicopathological study of BCC in head and neck region in western Rajasthan with a view to find out important aspect of this problem in population and treatments.

Material and Method: The present study was done in MDM hospital Department Of ENT from January 2012 to December 2016. The patient work up included history, age, sex, skin colour, average daily sun exposure (hours/day), occupation, residence etc. with some exclusion criteria.

Conclusion: Study was undertaken to evaluate the clinical profile, evaluate the different causative factors, treatment modalities followed in these cases and to evaluate results of various reconstruction techniques

Keywords: Basal cell carcinoma, recurrence, staging of tumor

1. Introduction

Basal cell carcinoma in Head and Neck region is one the most common skin Cancer encountered in clinical practice [10]. Jacob Arthurin (1827) first coined the term rodent ulcer to describe what now we know as Basal cell carcinoma (BCC) [5, 10]. It is the most common cutaneous malignancy worldwide accounting for 65-75% of all skin cancers. BCC is slow-growing, locally invasive malignant epidermal skin tumor with very limited capacity to metastasize. The main peculiarities of of BCC are:- its frequent recurrence long development process, localization in cosmetically important places such as nose lips, forehead, cheeks, eyelids, ears, scalp and neck.80-90% cases occur on these afore mentioned sites. Frequent recurrence is one of the most common problems in treatment of BCC patients. Gross differences are noted in the percentage of skin cancer in Asians (2-4%) and Blacks (1-2%) as compared to Caucasians (35-40%) [3]. In India, Skin Cancers constitute about 1-2% of all diagnosed cancers.

Risk Factors – there are several risk factors for developing basal cell carcinoma: [6, 7, 15]

- Sun Exposure – Both UVB radiation and UVA radiation contribute to the formation of BCC. UVB is believed to play a greater role in the development of BCC than UVA for these patients. (94)
- Older age and Male gender are associated with risk of BCC.
- Exposure to certain chemicals – Diepgen *et al* (2005) found that chemical carcinogens such as arsenic, coal tar products and poralens as well as ionizing radiation increase the risk of BCC. Combination of UV irradiation and arsenic exposure lead to an impaired process of nucleotide excision repair. Excessive exposure to psoralen UVA treatment in psoriasis patient also result in an increased risk for BCC.
- Radiation exposure – X-ray and genz ray – exposure is associated with the risk of BCC.
- Immunosuppression
- Fair Skin – People with fair skin, especially those with blond or red hair and blue light colored eyes, have a higher chance of developing skin cancer.

- Personal History of Skin Cancer – People who had skin cancer have higher risk of developing skin cancer again.
- Inherited syndromes:- In children, it is usually associated with genetic defect such as basal cell nevus syndrome, Xerodermapigmentosum, Nevus sebaceous, Epidermodysplasia verruciformis, Rombo syndrome or Bazex Syndrome.

2. Aims and Objective

The study is clinicopathological study of basal cell carcinoma in head and neck in western Rajasthan with a view to find out important aspect of this problem in population. The important points which are emphasized are:-

- Clinical profile of cases
- To look for any Causative Factors in these cases
- Staging of tumors
- Treatment policies followed in these cases and to evaluate the results of various reconstruction techniques.

Signs and symptoms of Basal cell carcinoma

Basal cell cancer grows slowly and usually painless. Characteristic features of BCC lesion include the following

- Waxy papules with central depression
- Pearly appearance
- Erosion or ulceration :- often central and pigmented
- Bleeding:- Especially when crusted areas are traumatised.
- Rolled (raised) border
- Translucency
- Telangiectases over the surface
- Black – blue or brown areas

3. Material and methods

- Study type – Prospective and retrospective (January 2012 to December 2016)
- The study was carried out in MDM Hospital, Dr. S.N. Medical College Jodhpur, Rajasthan.
- Criteria for patient selection into the research :-

Morphologically and histologically verified diagnosis of BCC

- Exclusion Criteria for patient into research:-
- 1) Patient who had morphological diagnosis of BCC but did not consent for biopsy.
- 2) Patient with clinical and histopathological diagnosis of BCC but did not undergo surgery due to medical causes or were not willing for surgery.

- Description of research methods :-

All the patients of malignancy of skin were examined thoroughly and investigated as per proforma attached with special reference to the following points:-

1. Patient identification data and demographic data (Age, gender)
2. History with special references to presence of pre-existing lesions and any of causative factors.
3. Grading of tumor according to AJCC 6th edition TMN classification.
4. Chosen treatment and construction methods.

Detailed history including age, gender, duration of symptoms, skin colour, average daily sun exposure (hours/day), occupation, residence place (rural or urban), exposure to chemicals including pesticides, radiation exposure history, treatment with psoralen UVA (PUVA) or narrow band UVB (NBUVB), smoking, alcohol intake, history of skin cancers and genetic disorders like xeroderma pigmentosum, Albinism in other family members. Clinical examination was done with data collected on various tumor variables like size, location, number, morphological subtype, and pigmentation.

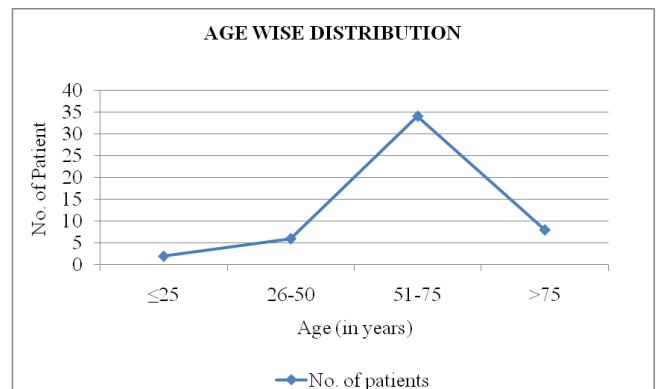
Investigations included complete blood count with differentials, bleeding time, clotting time, renal function tests, liver function tests and viral markers. Additional investigations were done depending upon the clinical scenario. Diagnosis was confirmed by histopathological variant.

4. Observation and results

In present study commonest age group is between 51-75 yrs (68%) with mean was 63.80 years

Table 1: Age Wise Distribution (n=50)

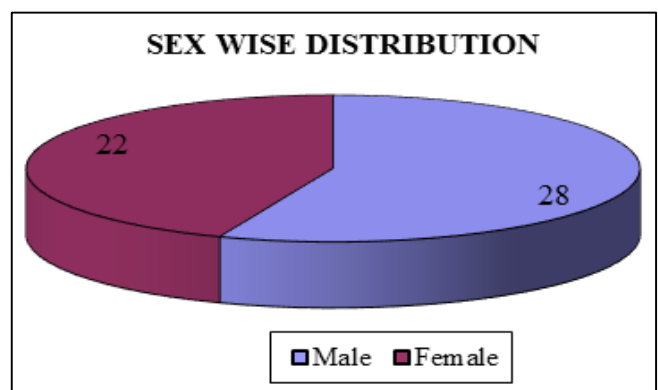
Age (in years)	No. of patients	Percentage
≤25	2	4
26-50	6	12
51-75	34	68
>75	8	16
Total	50	100



In present study, 28 patient were male (56%) and 22 were female (44%) with the male and female ratio 1.3:1.

Table 2: sex wise distribution (N=50)

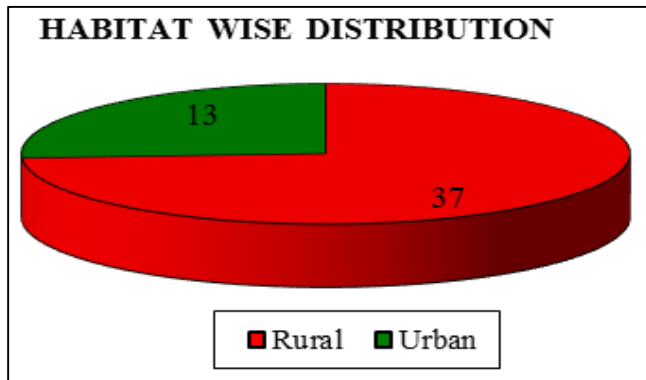
Sex	No. Of Patients	Percentage
Male	28	56
female	22	44



In present study majority of patient were from rural area (74%) in comparison to urban area 26%.

Table 3: habitat wise distribution (N=50)

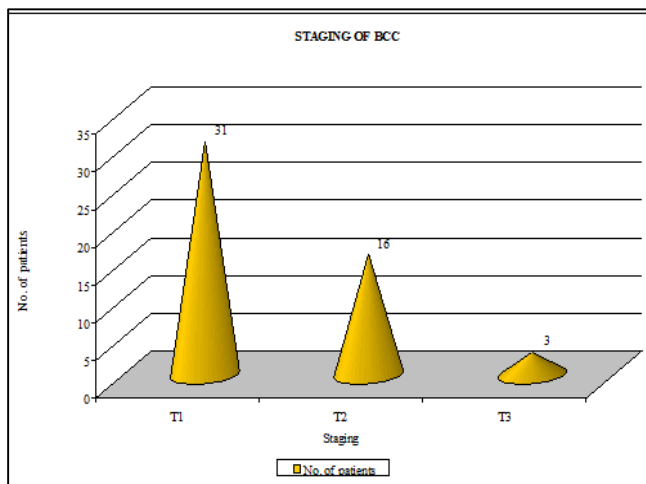
Habitat	No. of patients	Percentage
Rural	37	74
Urban	13	26



Most of patients (62%) presented at T1 stage followed by at T2 (32%) and T3 stage 6%.

Table 4: staging of BCC (N=50)

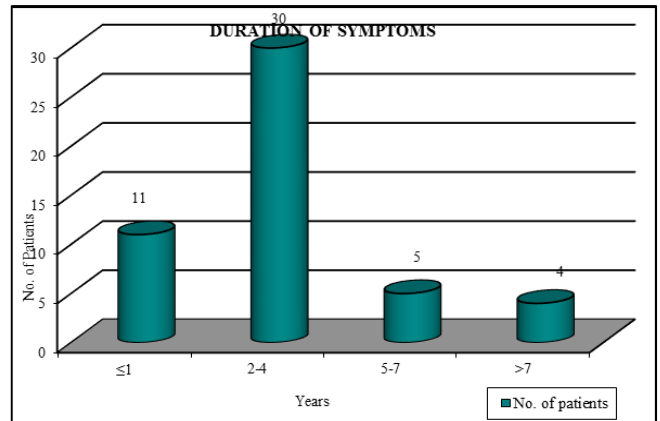
Staging	No. of patients	Percentage
T1	31	62
T2	16	32
T3	3	6



Majority of patients (60%) attended hospital within 2-4 years of onset of disease and 24% within 1yr.

Table 5: duration of symptoms

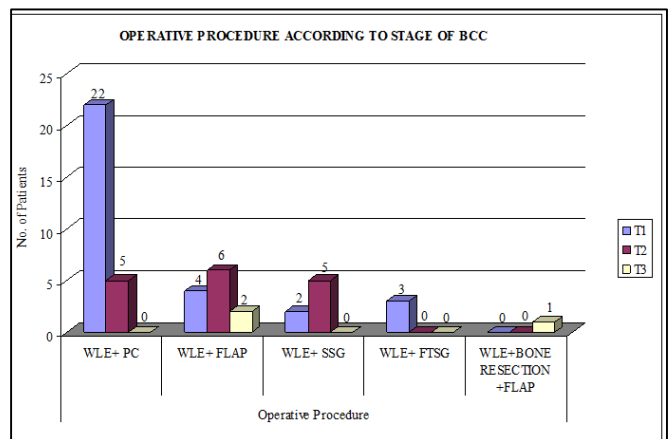
Duration of symptoms (in years)	No. of patients	Percentage
≤1	11	22
2-4	30	60
5-7	5	10
>7	4	8



Most of the patient at T1 stage (31 cases) were treated by WLE+PC (22 cases) where as at T2 stage (16 cases) were treated by WLE+Flap (6 cases/ 37.5%), 5 Cases (31.25%) were operated by WLE with skin grafting and at T3 stage (3 cases) was treated by WLE+Flap (2cases).

Table 6: operative procedure according to stage of BCC (N=50)

Staging	Operative Procedure					Total
	WLE+ PC	WLE+ FLAP	WLE+ SSG	WLE+ FTSG	Wle+Bobone Resection +Flap	
T1	22	4	2	3	0	31
T2	5	6	5	0	0	16
T3	0	2	0	0	1	3



On follow up, recurrence was present in 6% cases. Recurrence was frequently presented in T2 stage.

Table 7: Recurrence according to tmn staging on follow up (n=50).

Follow up No of cases	TNM Stage			Total 50
	T1 31	T2 16	T3 3	
Recurrence	0	2	1	3
Percentage %	0%	12.5%	33.3%	6%

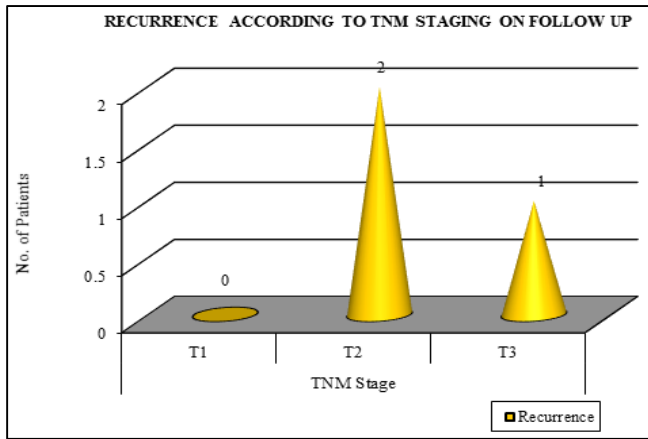


Plate 4: Immediate Postoperative picture

Colour plates



Plate 1: Preoperative picture of BCC of nose



Plate 5: Postoperative picture after 3 month



Plate 2: Intraoperative picture



Plate 6: Preoperative picture of BCC of nose T3



Plate 3: Paramedian forehead flap



Plate 7: Intraoperative picture



Plate 8: Postoperative picture (Paramedian forehead flap)

5. Discussion

In this study we analysed and reported clinicopathological characteristics of BCCs in 50 cases.

In the present study (Table No.1) age of the patient ranged from 14 to 90 years and the highest incidence (68%) was in 51- 75 years age group. Mean age was 63.80 years. The minimum and maximum age of patient in this series was 14-90 years which is corroborated by Januja *et al* (2012) who reported the minimum and maximum age of the patient as 22 and 90 years (4). Scrivener *et.al* and Chow *et al* (2011) found that age ranged from 6 to 107 years and 22 to 100 years respectively [9].

In our study the highest frequency of BCCs was observed in 51-75 years age group (68%), which supported by Hakimi (200), Ali Ahiaee (2002), Meamar *et al* (2005) an Omari *et al* 2006. These have also reported the high incidence in age group of 60 to 70 years [8, 1, 11, 12].

In present study (Table No.2) 56% patients were male and 44% were female, with the male ratio of 1.3:1. Similar results are reported by other authors Bastiaens *et.al* (1998), found in the patients, 54% were males, Yaldiz *et al* (1999), found in 62.8% and Raasch *et al* (2006) found in 58.6% were males [2, 14, 16].

Male to Female Ratio Indifferent Studies.

Author	Year	Male to Female ratio
Bastiaens <i>et al.</i> (135).	1998	1.2:1
Yaldiz <i>et al.</i> (136).	1999	1.7:1
Raasch <i>et al.</i> (137).	2006	1.5:1
Asif <i>et al.</i> (130).	2010	1.2:1
Malhotra <i>et al.</i> (132).	2011	1.6:1
Januja and Qureshi <i>et al.</i> (121).	2012	1.4:1
Present study	2017	1.3:1

In present study (Table No.3), 37 patients (74%) were from rural area and 13 patients (26%) were from urban area.

In our study, higher frequency among rural inhabitants was seen when compared to urban residents. This can be explained on the basis of more outdoor activities (agriculture is the main occupation), changes in clothing preferences (In India Most of the women keep their faces covered with veil), illiteracy and infrequent use of sunscreens. The rural patient regards initial lesions of BCC as a minor cosmetic problem with significant impact on health and seeks medical advice only when lesions become symptomatic or disfiguring. So, late presentation to health facilities is equally contributory.

In present study (Table No.5) 60% of cases attended hospital within 2-4 years of onset of disease and 22% presented within 1 year while 10% presented after 5-7 years and 8% presented after 7 years of onset of disease.

In the above study duration of attending hospital after onset of disease depend upon multiple factors, the urban population have more easy access to health care centres and they are more aware and concerned about the disease as compare to rural population, while female and literate patients are more cosmetically concerned then male and illiterate.

In this we observed 62% were presented at T1 stage followed by 32% at T2 and 6% at T3 stage (Table No.4)

Here we observed (Table No.6) 70.97% patients at T1 stage were treated by wide local excision followed by primary closure, 37.50% patients at T2 stage were treated by local excision followed by Flap, 31.25% patients at T2 were treated by wide local excision with split skin grafting/ flap and at T3 stage 2 cases (66.67%) was treated by wide local excision with reconstruction by flap.

The recurrence rate in this study (Table No.7) during follow up according to TNM staging. In T3 Stage (3cases) recurrence was present in 1 case (33.33%) whereas in T2 stage (16 cases) only 2 cases (12.50%) had recurrence.

6. Summary and conclusion

This study was undertaken to evaluate the clinical profile of cases with the reference to age, sex, site, presentation of lesion, morphological diagnosis, staging and histopathological subtypes of these tumors. In this study we also evaluated the different causative factors, treatment modalities followed in these cases and to evaluate the results of various reconstruction techniques.

The conclusions of study are as follows:-

1. Basal cell carcinoma in head and neck region was common in age group 51 to 75 years (68%). Mean age was 63.50 years.
2. Basal cell carcinoma is more common in males with M:F=1.3:1.
3. Basal carcinoma is commoner in patients who belong from rural area. 74% of the patients in the study were of rural back ground.
4. BCC is slow growing tumor most of the cases (60%) attended the hospital after 2-4 years of onset of disease.
5. Majority of patients (62%) presented at T1 stage. Despite the fact that majority (60%) of patients presented with in 2-4 years of onset of disease.
6. At T1 stage most commonly used surgical method is primary closure (70.96%) after wide local excision of lesion. At T2 stage surgical method depends on high risk features. At T2 stage 37.5% patients were treated by wide local excision followed by Flap reconstruction, remaining patients were treated by wide local excision followed by Primary Closure and split skin grafting. At T3 stage most of patients (66.67%) were treated by wide local excision followed by flap reconstruction.
7. On follow up, recurrence was present in 6% cases. Rate of recurrence was highest 66.67% in T3 stage (total 3 Cases)

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