Original Article

Clinical and Epidemiological Aspects of Basal Cell Carcinoma in Karachi

Basal Cell Carcinoma

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ABSTRACT

Objective: To study the clinical and epidemiological aspects of Basal Cell Carcinoma in Karachi and to compare this with western and local literature.

Study Design: A descriptive study.

Place and Duration of Study: This study was conducted at the Department of Pathology, PNS Shifa (Naval Hospital), Karachi from January 2012 to June 2015.

Materials and Methods: All forty cases of Basal Cell Carcinoma diagnosed at PNS Shifa during the study period were included in the study. Skin biopsies were received at the Histopathology Laboratory. Age, gender, occupation, ethnic group, clinical presentation and history of any predisposing factors were recorded on a specially prepared proforma. Gross examination was performed; representative sections taken and tissues submitted for further processing. Microscopic examination was performed thereafter.

Results: Elderly males were most commonly affected. Punjabis were the commonest ethnic group affected (42.5%). The commonest site was the face (72.3%). Two thirds of the patients had professions involving prolonged sun exposure. Most of the patients had solitary lesions (92.5%) with only three patients (7.5%) having multiple lesions. One patient had a positive family history of basal cell carcinoma (mother) and two patients had predisposing skin conditions.

Conclusion: Basal Cell Carcinoma in Karachi is not uncommon. The findings of our study are in concurrence with local and western studies. However further studies need to be done to examine various clinical and epidemiological parameters in different parts of Pakistan.

Key Words: Basal cell carcinoma, clinical, epidemiological, Karachi

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INTRODUCTION

Basal cell carcinoma (BCC) is a malignant tumour of skin which arises from basal cells of the surface epidermis and its appendages[1]. The nomenclature of this lesion has been the subject of great controversy as evidenced by the fact that it is known by various names including basal cell epithelioma, basalioma, rodent ulcer, Jacobi's ulcer, rodent carcinoma, adnexal carcinoma and non-Malpighian epithelioma. Some authors are reluctant to label it as a carcinoma because of absence of cellular atypia and the fact that it almost never metastasises. However, by general consensus, the most preferred term is basal cell carcinoma in recognition of its origin, locally invasive nature and its ability to metastasise (although extremely rare). It is the commonest malignant skin tumour affecting white races.[2,3] Traditionally it has been uncommon in blacks and Asians, but the incidence is increasing. Since there is very little in local literature about the subject, a need was felt to study various aspects of this disease further. The purpose of this study was to study the clinical and epidemiological spectrum of BCC in Karachi and to compare this with western and local literature.

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MATERIALS AND METHODS

This was a retrospective as well as prospective study of cases of BCC at PNS Shifa (Naval Hospital), Karachi over a three and a half year period from January 2012 to June 2015.

The study covered epidemiological aspects like age, sex, occupation and ethnicity; as well as clinical aspects like nature, site and duration of lesion, and whether or not there were any predisposing factors or family history.

Forty cases of BCC were diagnosed at PNS Shifa, Karachi during the study period and all of these were included. Skin biopsies of known and suspected cases of BCC were taken by the dermatologist or surgeon, immediately placed in 10% formal saline and dispatched to the Department of Pathology, PNS Shifa.

At the laboratory the sample went through routine examination and processing. After microscopy, all data was recorded and then analysed using SPSS 20 software. Pubmed was used for literature search.

RESULTS

Out of 40 patients studied, 26 (65%) were male (Fig 1). The commonest age group affected was the 60-69 year age group with 40% of patients falling in this bracket (Fig 2). The youngest being 30 and the eldest 75 years old.

Ethnic origin of 8 of the patients was unknown. Out of the remaining 32 patients, the majority were Punjabi (17), followed by Pathans (8), Sindhi (4), Kashmiri (2) and Balochi(1).(Fig 3)

All 14 of the female patients were housewives. Eight patients' occupations were unknown. Four patients were farmers and 4 were labourers. Two patients were soldiers in the Pakistan Army. The remaining 8 patients had a variety of professions among them (Table I).

The duration of the disease was unknown in 8 of the cases. Of the remaining 32 cases, 16 patients gave a history of >5 years duration. Four patients had a relatively short duration of <1 year. Six patients gave a 1-2 year history and 6 patients gave a 2-5 year history.

Thirty seven of the patients had solitary lesions with 3 patients having multiple lesions. Out of the 3 patients with multiple lesions, 2 patients had 2 lesions each, and 1 patient (an albino) had 6 lesions. This gave a total of 47 lesions studied. All the lesions were painless. Three lesions arose in nevi and scars (Table 2).

Thirty four (72,3%) of the lesions were situated on the face. Four lesions were on the back, 2 on the ear and 2 retroaural in location. The remaining 5 lesions occurred on the chest wall, scalp, axilla, vulva and dorsum of the hand (Table 3).

Three out of 40 patients studied had predisposing factors. One patient who had 2 lesions on his forehead had epidermodysplasia verruciformis and bowenoid dysplasia elsewhere on his face. Another patient who had 6 lesions on his nose, ear, retroaural keratosis lesions elsewhere on his face and arms. A 3rd patient, a 35 year old male, had a family history. His mother also had BCC and was included in this study.

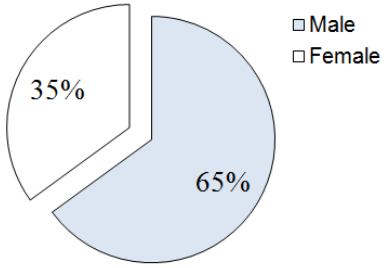

Figure No.1: Sex Distribution of BCC

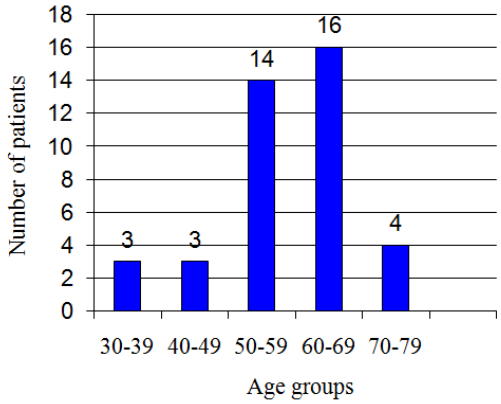

Figure No.2: Age Group Distribution of BCC (n=40)

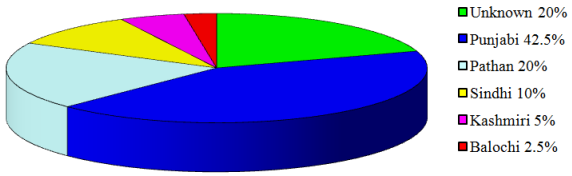

Figure No.3: Ethnic Group Distribution of BCC

Table No.I: Occupational Distribution of BCC n=40

Occupation	Number of Patients	Percentage
Housewife	14	35%
Unknown	8	20%
Farmer	4	10%
Labourer	4	10%
Sepoy	2	5%
Carpenter	1	2.5%
Pipefitter	1	2.5%
Driver	1	2.5%
Ex-pilot	1	2.5%
Dispenser	1	2.5%
Butcher	1	2.5%
Chowkidar	1	2.5%
Post master	1	2.5%
Total	40	100%

Table No.2: Clinical Presentation of BCC n=47

Nature of Lesion	Number of lesions	Percentage
Nodule	18	38.3%
Ulcer	18	38.3%
Flat Lesion	8	17%
Arising in a nevus	2	4.3%
Arising in a scar	1	2.1%
Total	47	100%

Table No.3: Distribution of Sites Affected by BCC n=47

Site	Number of Lesions	Percentage
Face – Nose	9	19.1%
Cheek	7	14.9%
Forehead	6	12.8%
Eyelid	3	6.4%
Face NOS*	9	19.1%
Back	4	8.6%
Ear	2	4.3%
Retroaural	2	4.3%
Chest wall	1	2.1%
Scalp	1	2.1%
Vulva	1	2.1%
Axilla	1	2.1%
Dorsum of Hand	1	2.1%
Total	47	100%

DISCUSSION

This was a retrospective as well as a prospective study. Therefore a major limitation was absence of clinical and epidemiological information in some of the retrospective cases.

Another limitation was that no long term follow up of patients could be done to assess the incidence of recurrence in our population.

Thirdly, in the absence of any radiological investigations, the presence or absence of metastases could not be commented upon.

In our study, we found a male predominance (65%), which concurs with Western and local studies [4,5,6,7]. Another point of concurrence with other studies was the commonest age group affected. In our study, 75% of the patients with BCC were over 50 years old. Afridi et al's study in Northern Pakistan found the mean age of BCC patients to be 58.6 while a Yemeni study found the mean age of Non melanoma skin cancers to be 62.9 years [5,8]. Other South Asian and Western figures also show that more than ¾ of the patients are above 40 years old [4,6,9,10]. A recent European study found that the incidence of BCC among patients aged 80 years and older is high and increasing.[11]

The majority of the lesions studied occurred on the face (72.3%), a finding which was similar to other studies[8]. On the face, the nose was the commonest site, a finding corroborated by other researchers [1,12]. However, almost 15% (14.8%) occurred in areas which were not sun exposed (back, chest, axilla, vulva), supporting the contention that sun exposure is but one factor in tumourigenesis. BCC occurring in the axilla is rare but has been described in the literature[13].

Vulvar BCC on the other hand, has been well documented [14,15,16]. It has been found to occur most commonly as a nodulo-ulcerative lesion in post menopausal women, which was the case with our patient as well.

All 14 of the women in the study were housewives. Of these, half were village women who worked outdoors (history of chronic sun exposure). Of the remaining 26 male patients, there were 8 whose occupations were unknown due to lack of information. Of the remaining 18 patients, 13 (75%) had occupations involving prolonged sun exposure.

None of the patients studied gave any direct history of arsenic exposure. Arsenic is a known human carcinogen associated with development of BCC[17]. However, 4 (10%) of the patients were farmers and therefore more likely to have been exposed to arsenic containing insecticides. Also 7 (17.5%) of the patients were rural women who worked in fields and who would, therefore, have the same level of exposure to arsenic based insecticides as their male counterparts.

The commonest ethnic group affected by BCC was Punjabis (42.5%), followed by Pathans (20%). Again, the dearth of local studies on this subject gave no baseline for comparison.

A disconcertingly large proportion of patients presented with lesions of >5 years duration (40%). Only 10% of patients presented with <1 year history. The fact that most of our patients presented late could be attributed to the lower level of education, (only one out of 40 patients studied was a professional); the inaccessibilty of health care services, and the reliance in our society on alternative treatments such as traditional healers. Other social factors such as poverty (no money for bus fare; not being able to afford to take the day off from work to go to the clinic), may have also contributed. The painless nature of the lesion could also have led to it being ignored. It is likely that only when the lesion persisted or grew larger, that medical advice was sought.

Three out of 40 patients studied had definite predisposing factors for the development of BCC. One patient was an albino with 6 lesions on various parts of his body. Albinos suffer from a lack of the photoprotective pigment melanin due to an inherited genetic defect resulting in markedly reduced (or absent) tyrosinase. This lack of melanin predisposes them to UV light induced damage and cancer[18]. Another patient had 2 BCC's on his forehead and histologically proven epidermodysplasia verruciformis and Bowenoid dysplasia elsewhere on his face. Epidermodysplasia verruciformis is associated with an increased risk of developing Non Melanoma Skin Cancers[19]. A third patient developed BCC 9 years after his mother also developed BCC. Studies of risk factors for cutaneous BCC found a significant association with family history of skin tumours[20].

CONCLUSION

We can conclude from the findings of our study that BCC in Karachi is not uncommon. It can be further noted that our study confirms the findings of other studies, which show that BCC commonly involves the sun exposed skin of elderly males usually as a nodulo-ulcerative lesion. Further studies may be done to

determine the effect of other factors, such as arsenic levels in soil and water in those places, which are found to yield high number of BCC cases.

Author's Contribution:

Concept & Design of Study:	Shaima S. Memon
Drafting:	Pushpa Vali Ram
Data Analysis:	Nasimah Iqbal
Revisiting Critically:	Shaima S. Memon, Pushpa Vali Ram
Final Approval of version:	Shaima S. Memon

Conflict of Interest: The study has no conflict of interest to declare by any author.

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