

Clinicopathologic Study of Basal Cell Carcinoma

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Abstract: Although, Basal Cell Carcinoma (BCC) commonly occurs in elderly, a significant number of them are detected in the third and fourth decades. This study aimed to determine the prevalence of gender, age and the occupation of the patients with BCC and the location, the beginning time and the histopathological subtypes of the tumors. The researchers surveyed 185 patients with BCC. Data collected included gender, age, the location of the tumor, the beginning time and the histopathological subtype of the tumor and the occupation of the patients. The researchers analyzed 185 patients with Basal cell carcinoma in 8 year period (1997-2005). There were 117 men (63%) and 68 women (37%). The most common age group was 60-69 year (29.7%). Head and neck were the most common sites of the tumors (91.3%) and nose was the most common involved area (28.6%). The major histological pattern was nodular (80%). Most of the tumors were seen in the patients who were farmer. Basal cell carcinoma occurs in the elderly, especially on the head and neck which is preventable by using sunscreen and avoidance of long time exposure to the sunlight.

Key words: Basal cell carcinoma, malignancy, pathology, tumor, decades, exposure

INTRODUCTION

Basal cell carcinoma is the most common malignancy among white persons in the world (Wong *et al.*, 2003; Walling *et al.*, 2004; Babaei-Nazhad *et al.*, 2009; Feizy *et al.*, 2006).

It most often arises in areas of long time sun exposure with high predilection to the head and neck. It can be aggressive locally and in rare instances may metastasize (Wong *et al.*, 2003; Walling *et al.*, 2004; Babaei Nazhad *et al.*, 2009; Feizy *et al.*, 2006; Telfer *et al.*, 1999; Weedon, 1997; Miller, 1991). It originates from the basal area of the skin and usually forms on the healthy skin (Champion *et al.*, 1998; Odom *et al.*, 2000; Arndt *et al.*, 1996).

In the United States in 1995, 75% of the skin cancers were BCC and about 99% of these patients were fair skin and 95% of them were between 40-79 years old (Champion *et al.*, 1998; Odom *et al.*, 2000; Arndt *et al.*, 1996; Freedberg and Fitzpatrick, 1999).

It is more prevalent in the patients suffering from AIDS or those who use immunosuppressive drugs. In these patients, skin lesions are more invasive

(Champion *et al.*, 1998; Odom *et al.*, 2000). Although, this tumor occurs in elderly, those patients who get affected sooner have multiple lesions (Champion *et al.*, 1998; Odom *et al.*, 2000; Arndt *et al.*, 1996; Freedberg and Fitzpatrick, 1999).

The etiology of BCC is still unknown but sunlight has a significant role in it. Arsenic is a proven factor in occurrence of the tumor which can enter the body through drinking water or mineral compounds (Champion *et al.*, 1998; Odom *et al.*, 2000; Arndt *et al.*, 1996; Freedberg and Fitzpatrick, 1999).

There are 5 pathological subtypes of BCC, nodular, superficial, micro nodular, infiltrative and morphea or sclerosing type (Champion *et al.*, 1998; Odom *et al.*, 2000; Arndt *et al.*, 1996; Freedberg and Fitzpatrick, 1999). The lesions are often seen on the face, so that 85% of the tumors are located on the head and neck and 25% of them are on the nose.

Every part of the body could be involved. Metastasis has a ratio between 0.0028-0.55% (Champion *et al.*, 1998; Odom *et al.*, 2000; Arndt *et al.*, 1996; Freedberg and Fitzpatrick, 1999; Ratner *et al.*, 2001).

The present study was designed to determine the prevalence of gender, age, duration and the site of the tumor, occupation of the patients with BCC and the histopathological subtypes of this tumor.

MATERIALS AND METHODS

This study has been carried out on the 185 patients with BCC of the skin who were referred to the Department of Dermatology of Tabriz University of Medical Sciences in Sina hospital from 1997-2005. The selection criteria were all cases with histologically confirmed BCC. The main data recorded were the age, gender and the occupation of the patients, site and the beginning time of their tumors and the histopathological subtypes of the tumors. Statistical descriptive and cross sectional in this study.

RESULTS AND DISCUSSION

The results of this study which has been conducted at the Department of Dermatology of Tabriz University of Medical Sciences were shown in Table 1-3. The participants in this study included 185 patients with BCC. There were 117 male (63%) and 68 female (37%). The most prevalent age was 7th decade of life (Table 1). In the most of the patients (54/51%), the beginning time of the tumor was between 1-5 years (Table 2). The most of the tumors were located on the head and neck (80.76%) and the most common anatomic site of BCC was the nose (28%) (Table 3).

The most common pathological subtype of BCC was nodular (80%). The most common occupation of the patients was farming.

Basal Cell Carcinoma (BCC) is the most common skin tumor which predominantly occurs on the sun-exposed areas in the fair-skinned persons. Although, patients usually present basal cell carcinoma in 5th-8th decades of life, the age range may be much wider and there are reports of tumors occurring in the second decade of life (Weedon, 1997; Scrivener *et al.*, 2002; Bastiaens *et al.*, 1998; Tran *et al.*, 2003).

BCC is most commonly seen on the head and neck, involving the central area of the face mainly (Scrivener *et al.*, 2002; Corona *et al.*, 2001; Celic *et al.*, 2009; Heckmann *et al.*, 2002). Histologically, BCC is composed of islands or nests of basaloid cells with peripheral palisade and frequent mitotic figures.

The nodular type is the most common subtype of BCC (Weedon, 1997; Leslie and Therera, 2005). The superficial subtype is less aggressive and accounts for

Table 1: The age groups and the gender of the patients with BCC

Age groups	Gender		Total	Percent
	Female	Male		
0-9	0	0	0	0.00
10-19	2	0	2	1.08
20-29	0	1	1	0.54
30-39	2	5	7	3.78
40-49	8	14	22	11.59
50-59	16	25	41	23.16
60-69	25	30	55	29.72
70-79	2	38	49	26.48
80-89	2	2	4	2.16
>90	1	1	2	1.08
Unknown	1	1	2	1.08
Total	68	117	185	100.00

Table 2: The beginning time of the tumor and the gender of the patients with BCC

Duration	Female	Male	Total	Percent
<6 month	10	20	30	16.21
6-12 month	8	9	17	9.19
1-5 years	36	63	99	53.51
5-10 years	2	6	8	4.32
>10 years	2	5	7	3.78
Unknown	10	14	24	12.97
Total	68	117	185	100.00

10-15% of cases (Bastiaens *et al.*, 1998). The least common but more aggressive subtypes are morpheic, infiltrative and basosquame, together they account for 15% of the cases (Walling *et al.*, 2004; Telfer *et al.*, 1999; Weedon, 1997).

The present study was designed to determine the clinicopathological characteristics of Basal cell carcinoma in the patients and the age, gender and the occupation of them. In the study, there were more male patients (63%) than female (37%). The ratio of man to woman in this study was 1.72/1 (Table 1). In a survey carried out on 78 patients with BCC in South Korea from 1984-1998, this ratio has been reported 0.902/1.

In the other study in Finland during 1991-1995 on the patients with BCC, the gender ratio of man to woman was 1.08/1 (Corona *et al.*, 2001; Lichter *et al.*, 2000; Shamsaddin and Dabiri, 2000).

In this study, the beginning time of the tumors in the most of the patients (54.51%) was in the period of 1-5 years (Table 2).

The most prevalent age of women was 7th decade of life (36.76%) and the 8th for men (32.47%). In a survey carried out in the United States in 1995, 95% of the patients with BCC were in the age group of 40-79 years (Lichter *et al.*, 2000).

Analysis of the anatomic distribution of the tumor in the study showed that >90% of the tumors were located on the head and neck, most commonly on the nose (38% female and 23% male). The involvement percentage of head and neck in the patients in women and men were 86.76 and 94.01%,

Table 3: The pathological type and site of the tumor and the gender of the patients with BCC

Site	Female					Male					Total
	Nodular	Superficial	Morphea type	Micro nodular	Total	Nodular	Superficial	Morphea type	Micro nodular	Total	
Scalp	5	4	0	0	9	14	5	0	0	19	28
Frontal	0	0	0	0	0	4	2	2	1	9	9
Temporal	0	1	0	0	1	3	1	0	2	6	7
Eye lids	3	0	0	0	3	8	0	0	0	8	11
Cheek	10	2	1	0	13	16	4	2	0	22	35
Nose	26	0	0	0	26	25	0	1	0	26	52
Upper lip	3	0	0	0	3	3	0	0	0	3	6
Lower lip	0	0	0	0	0	1	0	0	0	1	1
Ear	3	0	0	0	3	7	0	0	0	7	10
Neck	0	1	0	0	1	2	2	0	0	4	5
Upper extremity	1	0	0	0	1	0	1	0	0	1	2
Lower extremity	1	0	0	0	1	1	0	0	0	1	2
Trunk	0	1	0	0	1	2	2	0	0	4	5
Unknown	5	1	0	0	6	5	1	0	0	6	12
Total	57	10	1	0	68	91	18	5	3	117	185

respectively (Table 3). In this study, nose was the most common site of involvement in all of the patients (28.64%). According to the other reports, the head and neck involvement have been mentioned 85% and nose with 25.30% was the most common site of the tumor (Corona *et al.*, 2001; Lichter *et al.*, 2000; Shamsaddin and Dabiri, 2000; Kirkup and De Berker, 1999; Martino *et al.*, 1998; Humphreys *et al.*, 1998).

In the study, the most common histological subtype of BCC was nodular (80%) then were superficial, morpheic and micro nodular (15, 3 and 2%) respectively (Table 3). In other studies, the most common histological subtype of BCC was nodular. Three less common but more aggressive subtypes, the morpheic, infiltrative and basosquam have been reported 15% (Lichter *et al.*, 2000; Khshikawa *et al.*, 2005).

In this study, most of the women with Basal cell carcinoma were housekeeper (94.11%). Men were occupant in outdoor (52.13%) which 28.46% were farmers, 11.96% workers and 1.7% drivers. In other studies, the tumor was prevalent in those patients who worked in outdoor, like farmers, fishermen and sailors (Ratner *et al.*, 2001; Lichter *et al.*, 2000).

CONCLUSION

Basal cell carcinoma occurs in the elderly, more commonly on the head and neck which is preventable by using sunscreen and avoidance of long time exposure to the sunlight. This tumor could be managed very well if it be treated by total excision early.

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