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Original Article

Basal Cell Carcinoma of the Head and Neck Region: Analysis of Completely Excised 165 Cases in BSMMU

Dr. Md. Iqbal Mahmud Choudhury[1], Dr. Nilufar Shabnam[2] , Dr. Md. Kamal Uddin[3] and Chowdhury MAH[4]

[1]Assistant Professor (Plastic Surgery), Plastic Surgery Unit, Department of Surgery, Bangabandhu Sheikh Mujib Medical University,(BSMMU) Shahbag, Dhaka. [2]Registrar,Department of Surgery, BIRDEM & Ibrahim Medical College.Shabag, Dhaka. [3]Senior Consultant, 250 beded General Hospital, Gopalgang. [4]Associate Professor, Dept of Dermatology & Venereology, BSMMU,Dhaka.

ABSTRACT: BCC is very common skin malignancy in Bangladesh, especially in lower class those who are worked in sunlight and arsenic pron area in our country. The aim of the study is to analyze all completely excised BCCs in the head and neck region with regard to age, sex, personal and familial history, tumor localization, histopathological subtype of tumor, reconstruction method, and recurrence rates. Incompletely excised BCCs were not included in this study since incomplete excision is the most important preventable risk factor for recurrence. In 160 patients, 331 lesions were retrospectively evaluated by dividing into the following 8 subunits: scalp, frontotemporal, orbital, nose, cheek ,auricula, perioral, and chin-neckarea. Most of the patients were in 60–70 age group (34.7%). The nose (32.3%) was the most common site of presentation. Clinically, all lesions and histopathologically, most of the lesions (42.2%) presented were of the nodulartype. All cases of recurrence after complete excision(,2.7%) were located in the median parts of the head and neck region and were mainly diagnosed histopathologically as sclerotic and micronodular. Even though completely excised, head and neck region BCCs, especially which are more prone to recurrence due to anatomical and histopathologica lproperties, should be more closely monitored in order to decrease morbidity and health care costs.

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Corresponding author
Dr. Md. Iqbal Mahmud Choudhury
Bangabandhu Sheikh Mujib Medical University.
Email: drimcrony@gmail.com
Mobile: 01713-011283

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INTRODUCTION

Basal cell carcinoma (BCC) is the most common type of skin cancer in the head and neck region. The incidence of BCC is on the rise ,and it represents approximately 65% of all skin carcinomas[1–3]. BCC is not usually life threatening, unlike malignant melanoma, but it is locally invasive and may lead to considerable morbidity and complications[4]. BCC is the most frequent tumor type among the Australian population and also has a strongly rising incidence in Europe. , but not uncommon in Asian population. Although, the incidence of BCC in Bangladesh is not accurately known, we think that there is a rise in the number of patients who are admitted to medical facilities[2]. With the increase in the incidence of BCC, even though mortality is relatively low, the morbidity and treatment-related costs represent a significant burden to health care systems. Treatment options include medical and surgical modalities. The first therapy of choice is generally surgical excision, with safe surgical margins. Positive surgical margins in primary BCC excisions in the head and neck region were reported to be 3–20% in the literature[5]. Recurrence rates in incompletely excised patients were also reported a t26–67%[6].

In our study, we present a case with a series of 160 patients with 165 BCCs, involving the head and neck region, and who were treated with complete surgical excision. The aim of this paper is to describe the clinical, histopathological, and epidemiological features of completely excised BCC and also to evaluate clinical features of the recurrent cases with previous histologically clear margins in the head and neck region.

MATERIAL AND METODS

We performed a retrospective study. All patients between January 2008 and January 2013 with head and neck BCCs were evaluated. Only completely excised primary cases with histopathologically confirmed BCCs were included in this study .Patients who were lost to follow up before one year were not include All 165 lesions of 160 patients were categorized with regard to age, sex, personal and family history, skin type, tumor location, size, clinical and histopathological subtypes, reconstruction method, and recurrence rates. In order to achieve asystematic analysis of the collected data, the head and neck region were divided into the following 8subunits: scalp, frontotemporal, orbital, nose, cheek, auricula, perioral, andchin-neck area. The diagnosis of BCC was clinically undertaken first, but, in some cases when the clinical diagnose was not clear, the dermatologist performed a pretreatment biopsy. Most of the operations were performed under local anesthesia..While the 3mm safe margin excision was used in small and for large tumors and unclear borders, 10 mm safe margins were chosen. Incomplete excision was defined as a residual tumor re excised, were excluded from the study. All excised lesions, underwent routine histopathological examination by the pathology department and were all confirmed as BCC. Methods of reconstruction were primary closure, skin grafts, and local and distant flaps. All patients were documented, and preoperative and postoperative photographs were taken. Routine outpatient controls were planned as postoperative one week, one month, three months, six months, and one year. Afterwards, the patients were called in for yearly controls. In some cases, extra control visits were added due to recurrence or a patient's need.

Statistical analyses is was performed using SPSS12.0 soft-ware. Non normally distributed continuous variables were expressed as median, and categorical variables were expressed as numbers and percentages. Mann- Whitney U test was used in comparison with the continuous variables, while the chi-square test was used in comparison with the categorical variables. The level of statistical significance was considered as<0..05.

RESULTS

A sample of 160 patients, presenting 165 histopathologically confirmed BCC of the head and neck. There were 88(55%) men and 72 (45%) women. In the whole head and neck region, there was no statistically significant difference between the male and female population. The mean age of the patients was 67.3 ± 12.76. Tumors were rare below the age of 35. Higher prevalence of patients (34.7%) was noted in the 50–60 age group which was found to be statistically significant ($P< 0.05$).

The personal history of chronic sun exposure which is defined by spending every working day in open areas due to occupational reasons was reported in 99 (62.2%) cases. Sixty five (40.6%) patients had a coexisting systemic illness.. Eleven (6.8%) patients had skin cancer in their family history. One hundred and twenty patients (37.5%)were came from arsenic prone area of Bangladesh (Table 1).

Table 1: Demographic analysis of patients.

	Total	Male	Female
Gender(%)Age	160	88(55)	72(45)
Mean	67.3	66.7	69.4
SD	12.76	12.11	13.3
Median	67	64	69
Range	18-95	28-90	18-95
Arsenic contamination history	130(40.6)	63(19.7)	67(20.9)

Sunexposurehistory(%)	99(62.2)	66(37.8)	39(24.4)
Systemic illness (%)	65(40.6	31(19.7)	34(20.9)
Family history	11(6.8)	4(2.5)	7(4.3)

Tumors most commonly occurred on the orbital, with 31(32.3%), followed by the fronto temporal at 30(19.1%), cheek 27 (18.1%), nose 21 (12.7%), perioral 11 (6.9%), scalp10 (6.4%), auricle 5 (2.7%), and the chin-neck 3 (1.8%) regions.

Reports of clinical evaluations how that all of the examined primary BCCs were of the nodular type and were either ulcerated or pigmented. With confirmation to histopathological analyses, 33 (13.8%) were of the mixed type (nodular+ micronodular); 28 (11.7%) were of the micro-nodulartype; 27 (11.2%) were of the superficial type; 23 (9.3%) were of the basosquamous type; 18(6.9%) were of the adenoid type; 7 (4.2%) were of the sclerotic type of BCC. Regarding the distribution of histopathologic patterns, no statistically significant difference was found in the entire head and neck region. In the scalp, fronto temporal, nose, and cheek regions, the mixed type tumor percentage was higher ($P< 0.05$).One hundred and forty one excisions (88.9%) were undertaken under local anesthesia; 24 (11.1%) were done under general anesthesia.

Table 2: Systematic analysis of patients' data with comparison to head and neck subunits

Regions	Age					Sex		Histopathological subtype						Anaethesia		Method of reconstruction			
(Patients/Tumors)	<40	40–60	50–60	60–70	70<	M	F	Mix	Mic	Sp	Bs	Ade	Sc	L	G	P	G	LF	DF
Scalp (10/10)	2	1	5	1	1	7	3	1	2	1	2	1	1	7	3	3	7	–	
Nose(18/21)	3	3	8	6	2	15	6	3	6	4	3	4	2	15	3	8	5	8	1
Orbital (30/31)	6	11	21	19	6	15	17	9	5	6	5	5	1	12	5	8	4	2	–
Cheek (26/27)	1	6	8	7	5	14	13	10	7	5	3	1	1	21	5	8	10	9	–
Frontotemporal (30/30)	4	3	10	7	6	17	13	4	8	5	9	4	–	26	4	10	12	8	–
perioral (11/11)	1	1	4	4	1	9	2	6		3	–	–	2	9	2	3	5	3	–
Auricula (5/5)	1	0	2	2	0	2	3	–		1	–	3	–	4	1	2	–	3	–
Chin-neck (3/3)	0	1	0	1	1	1	2	–		2	1	–	–	2	1	1	1	1	–

N;Mix: mixed;Mic: micronodular; Sp: superficial; Bs: basosquamous; Ade: adenoid; Sc: sclerotic; L: local; G: general; P: primary repair G: full thickness skin graft; LF: local flap; andDF: distant flap.

There construction method regarding the size oft he defect was comprised of primary closure (Fig 2a,2b) 43(37.4%), full thickness skin grafting 44(35.3%) (Fig: 1a,1b)), and local flaps (3a,3b) 34(27%).

Fig: 1a. BCC involving the cheek (preoperative view)

Fig 2b. Wide excision and Primary closer (Same Pt)

Fig: 1b. Post Operative after FTSG View (same pt)

Fig3a. BCC on Ala of Nose

Fig: 2a. BCC on rt nasolabial fold

Fig 3b. Reconstruction by Local Flap

The mean follow-up time was at 33 ± 6.7 months. In nine lesions of the nine patients (2.7%) recurrence was observed. Recurrent lesions were in the scalp (n = 2), orbital (n = 3), and nose (n = 4) regions. The histopathological subtypes of these tumors were sclerotic (n = 4), micronodular (n = 3), mixed (n = 1), and nodular (n = 1). The recurrence time was between 6 months and 21 months (Table 3).

Table 3: Clinical features of recurrent BCC.

	Regions	Specificlocalization	Age	Sex	Size(mm)	Histopathologictumortype	Recurrencetime	Treatment
1	Scalp	Left parietal	64	M	10–30	Nodular	36 months	Total excision
2	Scalp	Leftparietal	66	F	<10	Sclerotic	25 months	Total excision
3	Orbital	Rightparietal	62	M	10–30	Micronodular	41 months	Total excision
4	Orbital	Leftmedialcantus	63	M	10–30	Sclerotic	8 months	Total excision
5	orbital	Rightmedialcantus	73	F	10–30	Sclerotic	6 months	Total excision
6	Nose	Dorsum	68	M	<10	Micronodular	18 months	Total excision
7	Nose	Right alar region	73	F	<10	Sclerotic	20 months	Total excision
8	Nose	Nose tip	71	F	<10	Mixed	20 months	Total excision
9	Nose	Leftalarregion	79	M	<10	Micronodular	9 months	Total excision

DISCUSSION

BCC is the most common type of skin cancer in Bangladesh, which predominantly occurs on the exposed parts of the body, with 75–85% of the lesions found in the head and neck regions[1, 2, 6–9]. According to our findings, more than half of the lesions are found in the nose (12.7%), orbital (32.3%), and cheek (18.1%) areas which are the most central and prominent parts of the entire head and neck region. These regions are also more prone to chronic sunlight exposure[2, 5, 10, 11].

Most of the BCC lesions are reported in the 40–79 age group, with the mean age of 62. In tropical regionsand in patients with family history, BCC may occur in younger patients[2,12].We have had a statistically significant increase in the 50–60 age group (34.7%), in all the head and neck regions. Regarding the patient's age and the location of the lesions, no significant difference was found.

Men generally have up to 2 times higher rate of BCC[9, 10, 16]. In our study, when the whole head and neck regionis encountered, therewas no statistically significant difference between men (55%) and women (45%) that was consistent with other studies[10, 13, 17]. Most of our patients are from rural aera , where the population is generally comprised of men and women who both work during the daytime as farmers.When the subunits were evaluated, scalp, frontotemporal, and auricular lesions are more common in men, which can be explained by androgenic alopecia or short hair on men, when compared to the long hair on women. Perioral lesions are found less inmen, especially on the upper lip, which can be contributed to moustache on men. These findings are consistent with the report by Bastiaens et al.[18].

There are also histopathologic patterns, such as mixed, micronodular, adenoid, superficial, and sclerotic, which are referred to as subtypes of clinical type of nodular BCC[9, 20]. All of our patients were clinically valuated as the nodular type BCC; histopathologically most of the lesions were mixed(42.2%). In the scalp, frontotemporal, nose, and cheek regions, a higher percentage of nodular type BCC was found.

The main goal of the BCC treatment is to eradicate the tumor with the safest and most cost-effective method available and to provide an aesthetically and functionally pleasant outcome. Even though different treatment modalities for BCC have been described, surgical excision is the most commonly preferred method for tumor removal[9].

In the literature, the 3mm peripheral surgical margin is adequate for the clearance of 85% of small and well-defined BCCs, and the 4-5mmmargin will raise this to 95%[5]. It has been shown that the recurrence rate for primary BCCs after surgical excision varies between 5%and 14%[1,5]. Lesions in the head and neck region are at more risk for recurrence, when compared to lesions in trunk and extremities[1,5,7,23]. Even though some factors, like anatomical localization, histopathological characteristics, and initial treatment strategy, have been proposed, there is lack of accepted understanding in the recurrence of the lesions[6]. Incomplete excision was reported as one of the risk factors for recurrence[6,10,20,24]. The main difference of our study when compared with the previous studies is the precise evaluation of the factors effective on recurrence in completely excised BCCs. In our series, the overall recurrence rate was 2.7%. Recurrent lesions were in the scalp (n = 2), orbital (n = 3), and nose (n = 4) regions. Interestingly, all recurrences were in the median parts of head and neck region; this may be attributed to high recurrence rates in embryonic fusion planes[9, 25–27]. Histopathological subtype of recurrent tumors was mainly micronodular and sclerotic, which is more difficult to eradicate and has high risk of recurrence[28].

Our study revealed that recurrence is related to the localization and histopathologic subtype, whereas they were not related to age, sex, and size of the lesion. The low recur-rence rates in our series might be due to the relatively low rates of histopathologically aggressive subtypes, excision with appropriate margin, and no positive surgical margins after surgery.

CONCLUSION

In conclusion, this study presents large number of series of surgically treated BCCs in the head and neck region. We would like to emphasize the importance of the preoperative evaluation of the patient keeping the epidemiology in mind, defining th surgical margins in order to get lower recurrence rates, and by motivating the patient for follow- up visits, in order to evaluate out comes and diagnose recurrences.

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