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Evaluation of basal cell carcinomas with positive surgical margins: A five year retrospective analysis

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ABSTRACT

The aim of this study was to evaluate morphologic and anatomic features of basal cell carcinoma (BCC) patients with positive surgical margins who developed recurrences in follow-ups. Patients with positive surgical margins were included in this study. Re-excision was performed in patients who were thought to have recurrence on clinical follow-ups. A retrospective analysis of patients with positive surgical margins who developed recurrences was performed. Histologically out of 148 patients, 23 (34%) were diagnosed as BCC with positive surgical margins. In the follow-up period, re-excision was performed in 7 patients with the suspicion of tumor recurrence. Among them 5 (21%) were diagnosed as recurrent BCC. Out of them 4 (80%) were diagnosed as sclerosing type and 1 (20%) was diagnosed as superficial spreading type BCC. Remaining 2 cases were diagnosed as chronic inflammation histologically. Considering the data obtained from our retrospective analysis, we suggest re-excision for BCCs with sclerosing and superficial spreading types which have positive surgical margins histologically. [Turk J Cancer 2008;38(1):16-19]

KEY WORDS:

Skin, malignancy, basal cell, carcinoma, recurrence

INTRODUCTION

Basal cell carcinoma (BCC) constitutes 80% of keratinocyte derived tumors and 60% of all skin malignancies (1,2). Ultraviolet radiation is the most important etiologic factor implied as a causative agent in BCC. A variety of treatment modalities such as curettage, surgical excision, radiotherapy, cryotherapy or laser excision has been described for treatment of BCCs. An overall cure rate of 90-95% was reported for surgical excision (2-4). Excision with 3-5 mm margins for the tumors smaller than 2 cm in diameter and with 10 mm margins for the ones bigger than 2 cm in diameter is recommended for surgical approach (5).

There is still debate about whether re-excision or close follow-up without surgery should be performed in patients revealing positive surgical margins upon pathologic examination. Most authors suggest that close follow-up is the most appropriate treatment for an inadequately excised BCC if it is histologically not aggressive type (6). According to this suggestion, all patients having positive surgical margins were taken into a clinical follow-up program in our clinic. The aim of this study is to evaluate our clinical protocol for the patients with positive surgical margins after primary excision and to define the morphologic characteristics and anatomical location of the recurrent tumor when it occurred.

MATERIALS AND METHODS

In this study BCC patients operated in our clinic between 2001-2006 and who had positive surgical margin histologically were retrospectively analysed. The patients having tumor cells close to surgical margin were excluded from the study.

According to our clinical protocol, tumors smaller than and larger than 2 cm in diameter were excised with a surgical margin of 3-5 mm and 10 mm, respectively. Patients with positive surgical margins were included into a clinical follow-up program with monthly controls for the first 3 months, then controls with 3 month intervals until the end of second year and with 6 month intervals afterwards. In the case of a clinical suspicion for a tumor recurrence, re-excision was performed in the follow-ups. A retrospective analysis of patients with positive surgical margins and recurrences were performed. The histological type of the primary and recurrent tumor, and anatomical localization and size of the primary and recurrent tumor were noted. The time intervals between the primary and the recurrent excisions were designated.

RESULTS

A total of 148 BCC patients were operated between 2001-2006. Out of them, 23 (34%) had the diagnosis of BCC with positive surgical margins histologically. Among them 13 were male, 10 were female. The mean age of the patients was 63 years. The localization of the tumor were as follows: 7 in nasal dorsum, 4 in medial canthal region, 3 in lower eyelid, 2 in alar region, 2 in frontal region, 2 in malar region and one in scalp, one on the hand dorsum and one in mental region (Table 1). Six of the lesions were bigger than 2 cm in diameter and 17 were smaller than 2 cm. Histologically 11 (47.9%) of primary tumors were nodular, 9 (39.1%) were sclerosing and 3 (13%) were superficial spreading BCC. Follow-up periods of patients ranged from 6 months to 63 months with a mean follow-up for 39.7 months.

Re-excision was performed in 7 patients with a suspicion of recurrence during follow-ups and 5 of them (21%) were diagnosed as tumor recurrence. For the remaining 2 cases the pathologic examination revealed chronic inflammation. Histological subtyping of 5 recurrent tumors was as follows: 4 (80%) were sclerosing type, 1 was superficial spreading BCC. Two of the recurrent tumors

Table 1
Patients with positive surgical margins

Patient no	Tumor diameter (cm)	Recurrence	Histologic type
1	0.5x0.3	No	Nodular
2	1.5x1.5	No	Sclerosing
3	3.5x1.5	No	Nodular
4	3.0x1.5	No	Nodular
5	2.0x1.0	No	Superficial spreading
6	1.5x0.4	No	Nodular
7	2.5x2.5	Yes	Sclerosing
8	1.0x0.8	No	Nodular
9	1.0x0.5	Yes	Sclerosing
10	0.8x0.8	No	Sclerosing
11	1.0x0.9	No	Nodular
12	0.6x0.6	No	Sclerosing
13	0.8x0.8	No	Nodular
14	0.4x0.3	Yes	Sclerosing
15	1.0x1.0	No	Nodular
16	1.8x1.1	No	Sclerosing
17	0.6x0.9	No	Nodular
18	5.0x3.0	Yes	Superficial spreading
19	2.7x2.5	No	Nodular
20	1.2x1.0	No	Sclerosing
21	1.5x1.0	No	Superficial spreading
22	1.0x1.0	No	Nodular
23	0.5x0.5	Yes	Sclerosing

Table 2
The histologic subtype-recurrence time relationship in patients operated for recurrent tumors

Patient no	Operation-recurrence time	Histologic subtype
7	2 months	Sclerosing
9	4 months	Sclerosing
14	10 months	Sclerosing
18	2 months	Superficial spreading
23	12 months	Sclerosing

were located in the alar region, 1 in medial canthal region, 1 in lower eyelid and 1 in frontal region. The time interval between the primary excision and recurrence ranged from 2 months to 12 months with a mean period of 6 months.

Histological examination of recurrent tumors revealed that tumors were composed of atypical basaloid cells with a uniform palisadic arrangement. Additionally 5 of them were designated to have lymphocytic infiltration and one had squamous differentiation upon pathologic examination. None of the patients with lymphocytic infiltration has recurrence in clinical follow-ups.

DISCUSSION

BCC is a slowly growing and infrequently metastasing skin cancer with a high cure rate (1-7). In the literature there is still no consensus about treatment modalities for patients who have positive surgical margins after primary excision (6). Some authors prefer reexcision, however the others follow up the patients. Considering inadequately excised BCCs there are different recurrence rates varying from 0.5% to 67% (4, 6-14). In our study the recurrence rate was calculated as 21%.

In a recent study, 28% of re-excision material due to positive surgical margins revealed scar tissue in histopathological examination. According to "disappearance theory", tumor cells may be destroyed during the inflammatory and repairing processes (9). In our study 2 patients with positive surgical margins who were thought to have recurrence, pathologic examination after re-excision displayed "chronic inflammatory event".

Factors such as the localization (nasal, malar, periorbital or perioral), size (tumors bigger than 2 cm) of the tumor, invasiveness on histological examination (superficial or sclerosing) or a history of radiotherapy were found to increase the risk of inadequate excision. However no relation was found between inadequate excision and age or gender of the patient (6-12). Nagore et al. (7) asserted that tumor location and histological type specifically related to risk of inadequate excision. Bogdanov-Berezovsky (9) has implied that only squamous differentiation was related to inadequate excision. Dellon et al. (13) showed that age and the gender of the patient, tumor localization and the presence of squamous differentiation had no effect on rate and time of recurrence. In our study, we had one patient whose tumor was excised inadequately and had squamous differentiation upon histological examination. No signs of recurrence have been encountered in this patient on the clinical follow-ups during the 10 month postoperative period.

De Silva and Dellon (8) suggested that host-tumor relationship should be taken into consideration in order to show tumor recurrence risk individually for a patient. They also suggested that metatype, irregularity in palisadic arrangement, spiky appearance of the tumor cords and absence of small lymphocytes were among the factors increasing recurrence risk. Robinson and Fisher (12) also stated that recurrence risk in inadequately excised tumors may be related with lymphocyte infiltration and unfavorable host response. Dellon et al. (13) recommended re-excision in the case of no or low lymphocytic infiltration. Terzioglu et al. (15) reported that the most reliable histopathological prognostic parameter is the irregularity of more than 75% in the periphery of a palisadic array. However, according to the same study, lymphocytic infiltration and ulceration should be considered as secondary prognostic parameters. Terzioğlu et al. (15) thus recommended that histopathological criteria including irregularity in the palisading array, lymphocytic infiltration and ulceration should be taken into account while determining the treatment protocol for inadequately excised BCCs.

The study by Netscher and Spira (5) classified BCC in two groups as limited or diffuse. According to this classification, nodular type BCC was included in the limited subgroup whereas sclerosing and superficial spreading types were in the diffuse subgroup. Netscher and Spira (5) also reported superficial spreading BCC as having the highest risk of recurrence as the tumor extends beyond clinically visible limits. They also implied that the sclerosing type may extend as much as 7 cm beyond the visible margin. In our study, when we classified patients with positive surgical margins according to the classification by Netscher and Spira, 11 out of 23 positive margin lesions were found to be of the limited type and the remaining 12 of the diffuse type. All the recurrent cases were in the diffuse type BCC group. Our follow-up period ranged from 6 months to 63 months in the limited group with no cases of recurrent tumors. In cases classified as diffuse BCC, the recurrent tumors were of the sclerosing type in 4 cases and observed between 2 to 12 months, whereas one case of the superficial spreading type was seen in the second month.

Friedman et al. (4) suggested re-excision if the tumor with positive surgical margins was multicenter in origin or had a sclerosing component. Karaca et al. (16) recom-

mended close follow-up if the tumor was not infiltrative and not histologically aggressive, the host response was strong and tumor formation time was long. They found re-excision more advisable otherwise.

CONCLUSIONS

The data collected from this study was revised in accordance with the present literature and all conclusions and results were subject to our clinical protocol. In our clinic, re-excision is performed without waiting for the recurrent tumor to form if the pathologic examination of the positive margin BCC reveals sclerosing or superficial spreading type of BCC. The nodular type of BCCs where the surgical margins are positive is placed into a clinical follow-up program. Although there seems to be no correlation between tumor localization and recurrence, we suggest excision with wide surgical margins neglecting cosmetic results in sclerosing or superficial spreading type of BCC even when they are located in areas near the aesthetic units. Considering the limited number of participants, it is not possible to arrive at an absolute conclusion regarding the data obtained from this study. Instead we suggest that this study be considered as a preliminary one. We conclude that, especially for sclerosing and superficial spreading BCC, more extensive and long-term studies about the relations of positive surgical margins and recurrence are necessary.

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