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Incomplete excision of Basal Cell Carcinoma: Incidence and demographic evaluation among 30 Syrian case series

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Abstract

Background: The incidence of skin cancer and especially basal cell carcinoma (BCC) has increased over the past decades. Current management of basal cell carcinoma is surgical excision but in spite of its high cure rate, the frequency of incomplete excision of basal cell carcinoma varies widely (0.7-50%) among centers worldwide. The aim of this case series was to assess the incidence of incomplete excision of basal cell carcinoma as well as to evaluate the demographic characteristics among 30 Syrian patients.

Methods: In this case series study, A total of 35 lesions (30 Syrian patients who had skin lesions suspected for BCC) which were excised in the Aleppo University Hospital Clinic between March of 2008 to October of 2009 were studied. The following data: (Age, Sex, tumor site and size, method of repair, histopathologic types and involvement of surgical margins) were collected and analyzed by SPSS using chi-square test and P value <0.05 was considered significant.

Results: There were 18 males and 12 females (40%) among Syrian (BCC) patients. The mean age ± SD of the patients in the incomplete excision group was (62.4 ± 3.0) years. The rate of incomplete excision was 25.7% (9 lesions) and involvement of the deep margin was observed in (55.5%) of these lesions. The most common sites for incomplete excision were the ears, followed by the peri-ocular area, naso-labial folds and the nose. Morphea type differentiation was associated with incomplete excision (11.1%). Risk factors related to incomplete excision were morphea type differentiation, repair by skin graft and lesions larger than 20 mm in diameter. There

was no statistically significant differences in the distributions of the sex and age of the patients, and the primary clinical diagnosis.

Conclusions: Basal cell carcinoma (BCC) appears to be on the rise in our part of world. Careful clinical assessment, recognizing the risk factors related to incomplete excision of BCCs and complete excision with wide margins or Moh's micrographic surgery can avoid recurrence and repeated surgeries.

Introduction

BCC is a slow-growing, locally invasive malignant epidermal skin tumor predominantly affecting Caucasians [1]. It is the most common malignant tumor in humans, second in frequency only to actinic keratosis if squamous cell carcinoma in situ is also taken into consideration [2]. Metastasis is extremely rare and morbidity results from local tissue invasion and destruction particularly on the face, head and neck [3] [4]. Clinical appearances and morphology are diverse, and include nodular, cystic, superficial, morpheic (sclerosing), keratotic and pigmented variants [5]. Prevalence of this tumor has increased over the past decades [1]. Current management of basal cell carcinoma is surgical excision but in spite of its high cure rate, the frequency of incomplete excision of basal cell carcinoma varies widely (0.7-50%) among centers worldwide [6] [7]. Ten to forty % of incompletely excised BCCs recur if left untreated, they present a therapeutic dilemma [8]. The aim of this case series study was to assess the incidence of this problem as well as to evaluate the demographic characteristics among 30 Syrian patients. Knowing of these factors helps the surgeons consider a wider excision margin or Moh's micrographic surgery for high risk tumors for avoiding recurrence and repeated surgeries.

Methods

In this case series, a total of 35 lesions (30 Syrian patients who had skin lesions suspected for BCC) which were excised in the Aleppo University Hospital (AUH) Clinic between March of 2008 to October of 2009 were studied. Excluded from the study were patients who underwent incisional biopsies, shave biopsies or were previously treated by irradiation or other modalities. Variables were age, sex, tumor site and size and the method of repair. The operations were performed by residents and consultant plastic surgeons. Before the operation, the excision margins were defined through clinical judgment; after considering the size, site and type of tumor. Most tumors were excised with a margin of 4 mm and sent to the department of pathology at the same center. The pathologic reports were reviewed to assess the adequacy of the excisions, which was categorized into a dichotomous variable: complete or incomplete excision. Incomplete excision was defined as a pathologic report that indicated the presence of tumor cells at the surgical margins of the lesion. Specimens with tumor cells only approaching the surgical margins were not regarded as an incomplete excision. Data were analyzed by SPSS (Statistical Package for Social Sciences) using chi-square test and P value <0.05 was considered significant.

Results

During the of 8 months, thirty patients (35 lesions) were studied. There were 18 (60%) males and 12 (40%) females. The rate of incomplete excision was 25.7% (9 lesions). In 55.5% (5 lesions) of the tumors, deep margin and in (22.2%) of them, lateral margin was involved. Both margins were involved in the rest. The mean age ± SD of the patients in the incomplete excision group was (62.4 ± 3.0) years and in the complete excision group was (60.8 ± 4.2) that was not statistically significant. In men patients, the rate of incomplete excision was (27.8%) and in women was (33.4%) that was not statistically significant **(Table 1)**.

	Complete excisions (26 patients)	Incomplete excisions (9 patients)	All excisions (35 patients)
Gender n (%)	Men: 13 (72.2%) Women: 8 (66.6%)	Men: 5 (27.8%) Women: 4 (33.4%)	Men: 18 (60%) Women: 12 (40%)
mean age ± SD	60.8 ± 4.2	62.4 ± 3.0	61.1± 5.1

Table 1. Demographic characteristics of patients with complete vs incomplete excision of BCCs

Most tumors incompletely excised were located in the head and neck region (22.5%). The most common sites were the ears, followed by the peri-ocular area, naso-labial folds and the nose that was not statistically significant. Lesions were divided into three groups according to the parameter of size:

a) greater than 20 mm (44.4%),

b) lesions between 10 to 20 mm (33.3%) and

c) lesions smaller than 10 mm (22.3%) respectively that was statistically significant.

Incomplete excisions were divided into three groups according to the parameter of type of closure:

a) graft (27.2%),

b) flap (20%) and

c) direct closure (26.3%) respectively with a significant difference **(Fig 1)**.

Morphea type differentiation was associated with incomplete excision but there was no association between incomplete excision and other differentiation patterns **(Table 2)**.

Differentiation pattern	Complete excisions (n=26)	Incomplete excisions (n=9)
Ulcerative	7 (26.9%)	3 (33.3%)
Solid	2 (7.6%)	1 (11.1%)
Morphea type	1 (3.8%)	1 (11.1%) *
Baso- squamous	2 (7.6%)	1 (11.1%)
Unspecified	14 (53.8%)	3 (33.3%)

* p= 0.03

Table 2. Differentiation patterns of complete Vs incomplete excisions of BCCs

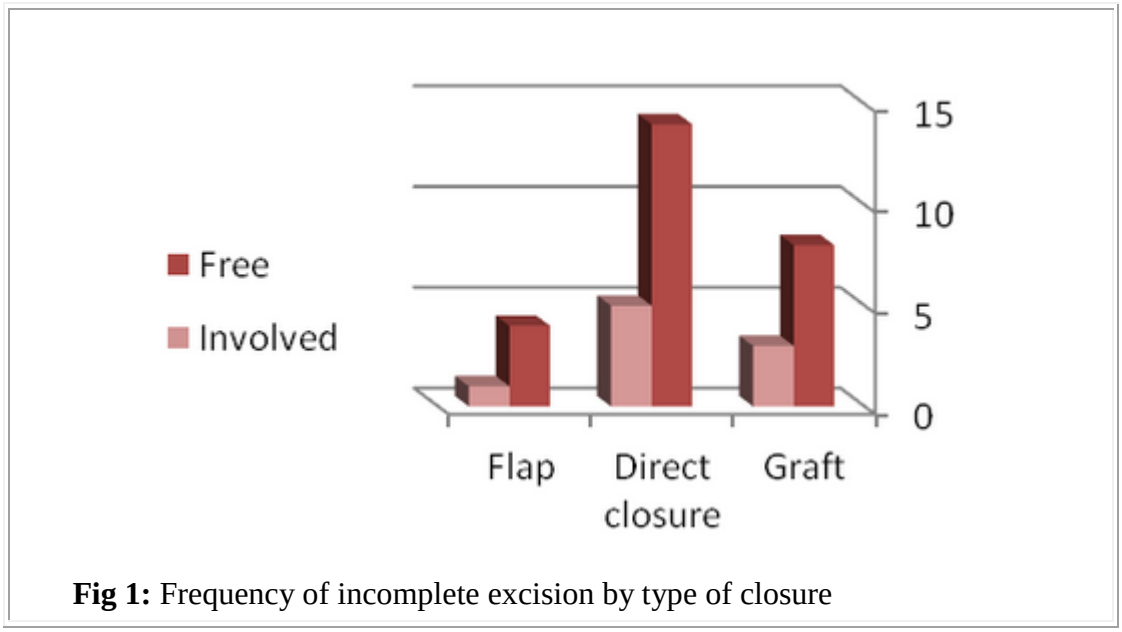

Fig 1: Frequency of incomplete excision by type of closure

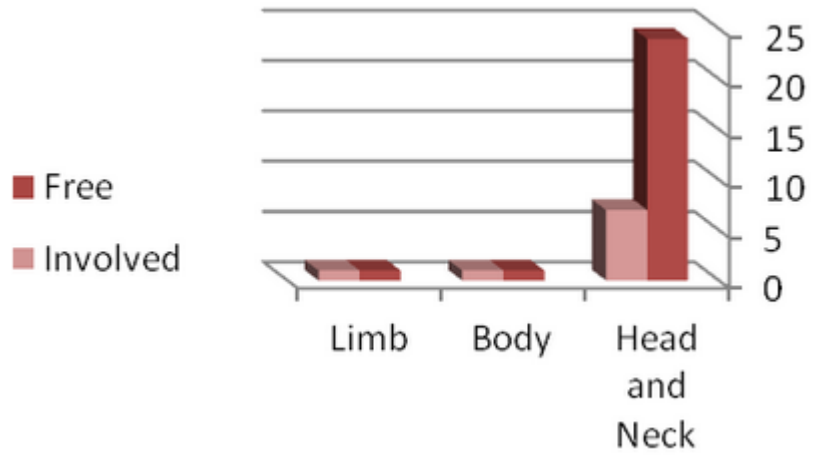

Fig 2: Frequency of incomplete excision by site

Discussion

In this study, we described the risk factors associated with incomplete excision of BCCs performed by residents and consultant plastic surgeons in the AUH clinic. The overall conventional surgical excision of basal cell carcinoma has a high cure rate of (95-99%) [9]. Achieving this aim is possible when the excision is complete. The frequency of incomplete excision of basal cell carcinoma varies widely (0.7-50%) among centers worldwide [6] [7]. The incidence of incomplete excision was 25.7% in our study. The mean age ± SD of the patients in the incomplete excision group was 62.4 ± 3.0 years similar to study data in Iran [10]. There was no statistically significant differences in the distributions of the sex and age of the patients, consistent with most other series [10] [11] [12] [13] [14] although they were significant in Kumar's study [15]. We have found that excision was incomplete at the deep margin in the majority of the evaluated resections in contrast to studies with high rates of incomplete excision at the lateral margin [7] [15] [16] [17]. We noted that 88.5% of all lesions were located in the head and neck region that is similar to series with reported incidence rates of 80-90% [13] [17] [18]. The rate of incomplete excision was 22.5% for the head and neck region which may be due to the inability of the surgeons to perform a wider excision. This finding was similar to the study data in Iran [10]. The most common sites were the ears, followed by the peri-ocular area, naso-labial folds and the nose that was not statistically significant similar to Kumar's study [13]. Head and neck region, especially mid-face is the site of highest incidence [15] [16] [17] [19]. This is the reflection of the lack of enough skin and also cosmetic problems of resections. We have found that incomplete excisions were significantly associated with the presence of morphea type differentiation. This observation was previously reported by many studies [13] [14] [17] [20]. It is possible that the more aggressive BCCs, such as BCCs with baso-squamous, adenocystic or morphea types of differentiation, are associated with

increased incomplete excision proportions because of the borders of this tumors are not sharply demarcated. Lesions were greater than 20 mm in 31.4% of cases and incomplete excision rate was 44.4% in this group which is consistent with study data in Iran [10]. This might be due to the greater subclinical extension in larger lesions [21] [22]. We have found that incomplete excision rate was higher in lesions repaired by grafting (20%). This might be attributed to the fact that larger, deeper and more complex lesions are repaired by grafting. Some studies reported the highest rate of incomplete excision for grafting [10] [14] [15]. In our study, the rate of incomplete excision was high for direct closure repaired lesions which might show an inappropriate excision margin. We tried to demonstrate the incidence of the incompletely excised BCC lesions and to recognize the related variables to consider a wider excision margin for high risk tumors because the recurrence rate is 1% in completely excised lesions in contrast to 30% incomplete excisions [23]. Some authors suggest treating incompletely excised lesions in the immediate post operative period to prevent extensive surgery [7] [8] [20] [23] [24]. Some other factors related to incomplete excision such as the level of the expertise of the surgeons could not be assessed in this study and need to be addressed in larger series.

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