

Surgico-pathological Evaluation of Non-melanoma Skin Cancers in Baghdad-Iraq

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ABSTRACT:

Background: Malignancy is still the biggest challenge in medicine and surgery, and skin as a largest organ in the body, its cancer representing the most common malignancy globally, but with different and variable rate according to demography in different geographical areas.

Aim of study: The aim is to study the prevalence of NMSCs (non- melanoma skin cancers) including BCC and SCC with histopathological description of the types of each in relation to age, sex, site and clinical presentation.

Patients and Methods: We did a retrospective study from June 2012 to June 2017 to all the cases which were diagnosed as NMSCs and were referred to Teaching Laboratories from Baghdad Medical City Teaching Hospital and other local hospitals which were surgically managed by excision and reconstruction and they were 145 cases in total.

Results: Among 145 cases of NMSCs, 68% were men, age group (61- 70) was forming 27.5% and age group (51- 60) was forming 26.8% which makes them the most common age groups. BCC was most common among NMSCs forming 56.5% while SCC 43.3%. The most frequent anatomical site of distribution for both was head and neck (66 patients with BCC and 45 patient with SCC). The commonest clinical presentation of BCC was ulcer (70 patients) and SCC was ulcer with or without scar (43 patients). Regarding the histopathological pattern of BCC, the nodular type was most frequent (68 cases) while SCC was the moderately differentiated type (found in 33 patients) and all cases had been managed by surgical excision and reconstruction by appropriate method according to many anatomical and patients factors.

INTRODUCTION

BCC and SCC in combination are referred to as NMSCs (non melanoma skin cancers) both occur predominantly in sun exposed areas in the body.^(1,2) About 90% of NMSCs are associated with exposure to ultraviolet (UV) radiation from the sun.⁽³⁾ BCC is the most frequent form of skin cancer, an estimated 4.3 million cases of BCC are diagnosed in the US each year.^(4,5) It may also develop in sunlight protected skin.⁽²⁾ The incidence of SCC is directly related to the amount of exposure to the sun and lack of pigmentation, this was thought to be due to the induction of P53 mutation by ultraviolet light.⁽⁶⁾ Regular daily use of SPF 15 or higher sunscreen reduces the risk of developing SCC by about 40%.⁽⁷⁾ SCC of skin can be seen also as a complication of xeroderma pigmentosum, cutaneous scars (burn- Marjolin's ulcer).⁽²⁾ BCC develops mostly after the fifth decades and mainly at the region of head and neck.⁽⁸⁾ Skin cancers is the 5th leading cause of deaths among all the cancers in the world.⁽⁹⁾ According to the WHO, between two to three million NMSCs are diagnosed annually worldwide.⁽¹⁰⁾ The options for primary tumour eradication of BCC can be divided into destructive or surgical excisional modalities. Destructive treatment options are generally reserved for low risk basal cell tumors and use a variety of methods to destroy neoplastic tissue including electrosurgery, cryosurgery, topical 5-fluorouracil, topical imiquimod, intralesional interferon, radiation, and photodynamic therapy. Notably, these modalities do not definitively ensure a margin clear of neoplasm. However, in selected low-risk cases, the overall success rate can be excellent.⁽¹¹⁾ Surgical or excisional treatment of BCC can be used in low-risk and high-risk cases. Simple excisional biopsy of low-risk lesions in anatomically simple areas (trunk and extremities) can result in success rates over 95%. To achieve histologically negative margins, guidelines exist to assist the surgeon: for tumors <1 cm a clinical margin of 4 to 5 mm, and for tumors >1 cm a clinical margin of 5 to 10 mm is recommended.⁽¹²⁾ In high-risk cases, especially on the face where obtaining adequate margins may result in significant deformity, direct excisional biopsy allows for histologic evaluation of the surgical margins to ensure that they are free of tumor to maximize the aesthetics of reconstruction, BCC generally carries a good prognosis as the tumors tend to grow slowly and metastasize very rarely, but can result in significant morbidity due to local invasion.⁽¹³⁾ The surgical treatment options for SCC are similar to those of BCC and are based on assessing the risk of local regional recurrence or distant metastasis. In selected low-risk cases, destructive treatment modalities can be used

with excellent results. Direct surgical excision can be used for both low risk and high-risk lesions. In order to increase the chance of achieving histologically negative margins, the recommended surgical margin for low-risk lesions is 4 mm, and for high-risk lesions it is 6 to 10 mm. Since SCC tends to metastasize to the lymph nodes preferentially, there is some interest and initial success in using sentinel lymph node biopsy to diagnose subclinical lymph node metastasis and stage high-risk tumors. However, more controlled prospective randomized trials are required to determine whether detection of subclinical nodal metastasis will result in better clinical outcomes.⁽¹⁴⁾

PATIENTS AND METHODS

In our present study, we conducted all the diagnosed cases with BCC and SCC from June 2012 to June 2017 (retrospective study) that were referred to the Teaching Laboratories (Pathology Department) from Baghdad Medical City Teaching Hospital and other hospitals (Plastic Surgery Department). All the referred skin biopsies (surgically excised) were fixed in 10% formalin, gross examination findings were noted and tissue sections were seen using Haematoxylin and Eosin routine stains.

RESULTS

The five years collected cases which are 145 were proved to be NMSCs. The male predominates over the female forming 68% (table 1). Age of the patients were mostly between (50-70) years forming 54.3% of the total cases (table 2). Among the 145 patients, 82 were diagnosed as BCC (forming 56.2%) while the SCC were 63 (forming 43.4%) as shown in table 3. The site of distribution of both types of NMSCs were mostly at the head and neck (66 with BCC and 45 with SCC) table 4. The clinical presentation of BCC was mostly ulcer 85.36% among total BCC (table 5) and (figure 1a), and that of SCC were ulcer with or without scar forming 68.25% among the SCC (table 6) and (figure 1b). The histopathological pattern of BCC was mainly the nodular form in 68 cases (out of 82) as shown in table 7 and (figure 1c), and that of the SCC was mostly moderate differentiated 33 patients (out of 63) table 8 and (figure 1 d).

Table 1: The sex wise distribution

Sex	No. of patients	Percentage %
Male	99	68%
Female	46	32%
Total	145	100%

Table 2: NMSCs distribution according to age

Age	No. of the patients	Percentage%
0 – 9	0	0
10 – 20	3	2
21 – 30	13	9
31 – 40	17	12
41 – 50	26	18
51 - 60	39	26.8
61 – 70	40	27.5
71 – 80	4	2.7
81 – 90	3	2
91 – 100	0	0
Total	145	100

Table 3: NMSCs types

Type	No.	%
BCC	82	56.5
SCC	63	43.4
Total	145	99.9

Table 4: Site of distribution

Site	BCC	SCC
Head & Neck	66	45
Upper Limb	10	3
Lower Limb	3	8
Trunk	2	4
Anogenital	1	3
Total	82	63

Table 5: Clinical presentation of BCC

Clinical presentation	No. of the patients
Ulcer	70
Nodular lesion	8
Skin induration	3
Erythema	1
Total	82

Table 6: Clinical presentation of SCC

Clinical presentation	No. of the patients
Ulcer with scar	23
Ulcer without scar	20
Nodular lesion	15
Skin induration	3
Erythema	2
Total	63

Table 7: Histopathological pattern (HP) of BCC

HP pattern	No. of the patients
Nodular	68
Superficial	4
Infiltrative	8
Nodular-Superficial	1
Infiltrative-Nodular	1

Table 8: Histopathological pattern (HP) of SCC

HP pattern	No. of the patients
Well differentiated	20
Moderately differentiated	33
Poorly differentiated	10

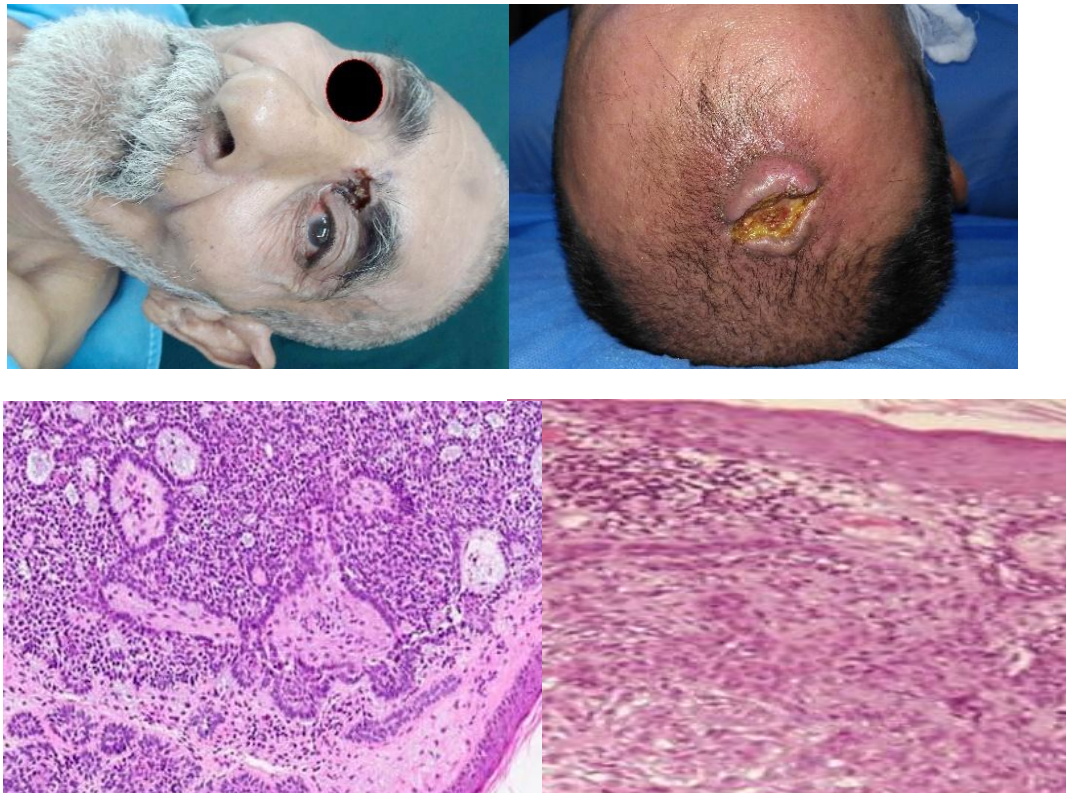


Figure 1: a- Clinical presentation of BCC(ulcer in the side wall of the nose).b- Clinical presentation of SCC (ulcerative lesion in the scalp)c- Histopathological pattern of BCC(nodular) d-Histopathological pattern of SCC(moderately differentiated)

DISCUSSION

According to the present study, out of 145 patients, 99 were male (68%) and 46 were female (32%), this shows male predominance which is comparable to Jina A *et al*⁽⁹⁾ study, Manjula Adinaryan *et al*⁽⁸⁾, Sarah Abdullah *et al*⁽¹⁰⁾, Ochicha O *et al*⁽¹⁶⁾ and Alakloby OM *et al*⁽¹⁷⁾. This could be explained through the fact that men in our society are more exposed to sunlight as they work outdoors, radiation and wars, while women and because of their lifestyle are less exposed to these risk factors. In our study most of the patients are between the age of 50 to 70 years forming 54.3% together, then followed by patients in the fourth decade, this is comparable to the study of Jina A *et al*⁽⁹⁾ which established the highest incidence in fifth to seventh decades forming 53.4%, followed by the fourth decade. The study of Manjula Adinaryan *et al*⁽⁸⁾ reported that 74% were related to the fourth and later decades, also the study of Sarah Abdullah *et al*⁽¹⁰⁾ showed that mean age was 59 years. In the present study among 145 patients, 82 were diagnosed as BCC (56.2%) while SCC were diagnosed in 63 patients (43.4%), this is opposite to the study of Jina A *et al*⁽⁹⁾ which reported (67.33%) of SCC and (20.79%) of BCC and also opposite to the study done by Godbole VK *et al*⁽¹⁸⁾ and the data of NCRP (1990-1996)⁽¹⁹⁾. The study of Halder RM *et al*⁽²⁰⁾ and Kikuchi A *et al*⁽²¹⁾ both emphasized that SCC is the most common skin cancer in Asians, Indians and Africans. This could be due to different geographical, racial, socioeconomic and lifestyle states besides the hereditary factors which all needs further study. The result of the study of Sarah Abdullah *et al*⁽¹⁰⁾ showed that BCC (50.2%) and SCC (44.8%) also in a study of Alzolibani *et al*⁽²²⁾ BCC seemed to be three times more common than SCC, both studies were in Saudi Arabia this similarity between them and our study could be due to the close geographical areas and lifestyle of both countries.

In the present study the site of distribution was head and neck as the most frequent site for both BCC (66 patients) and SCC (45 patients) followed by upper limb then the lower limb and the least was anogenital area, this is comparable to the study of Jina *et al*⁽⁹⁾ regarding head and neck but not the second commonest site as it was the lower limb, and was followed by anogenital area which is opposite to ours as it was the least one. The study of Manjula *et al*⁽⁸⁾ also mentioned that head and neck as commonest site of NMSCs forming 54%, and the same for study by Franceschiet *et al*⁽²³⁾, also the study of Sarah Abdullah *et al*⁽¹⁰⁾ reported that head and neck predominates over other sites forming 79%.

In our study the clinical presentation of BCC was mostly ulcer (85.3%) among total BCC and that of SCC was also ulcer with or without scar (68.25%) among the SCC patients. The study of Manjula *et al*⁽⁸⁾ mentioned that the majority of NMSCs (61.2%) presented as ulcerative lesion, which corroborates our study results, and the same for the study of Jina A *et al*⁽⁹⁾ which showed 53.47% as ulcerative lesions also. In the present study the histopathological pattern of BCC was mostly of nodular type in 68 patients (out of 82), and for that of SCC was moderately differentiated in 33 patients (out of 63). In the study of Jina A *et al*⁽⁹⁾ the moderately differentiated SCC was forming the highest (43.56%) which is comparable to our study, and in the study of Manjula *et al*⁽⁸⁾ 46% of SCC categorized as well differentiated, 42.3% as moderately differentiated, while for BCC it showed that the nodular type was the commonest and this is comparable to the present study.

CONCLUSION AND RECOMMENDATIONS

The late presentation of BCC & SCC is manifested in our study in the form that ulcerative type is mostly managed which reflects the social misunderstanding of the nature of these diseases due to false thoughts of considering these lesions as simple and can be healed conservatively by simple local remedies adding to that the misbelief and wrong concept that surgical intervention will make these lesions to spread and lead to gross deformity after removal, the relatively high prevalence reflects the social traditions and customs (i.e. male should work to cover life cost) which means high exposure to UV light from very sunny and long days of summer season in Iraq in addition to other common etiological factors in oriental communities like high smoking percent, irradiations, different pollutions due to geopolitical and socioeconomic circumstances we recommend community targeted educational health programs and practical plans for early detection and follow up about this disease to facilitate early management with less morbidity and cost of surgical treatment since BCC considered curable and also SCC in the early stages

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