

## Original paper

# Non – Melanoma Skin Cancers: A Clinical and Histopathological Study

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## Abstract

**Background:** Non – melanoma skin cancer like basal cell carcinoma (BCC) and squamous cell carcinoma (SCC) are the most common cutaneous cancer and are associated with multifactorial causes such as environmental and host factors, hence they are not uncommon skin diseases in Iraqi patients.

**Aims of the study:** This study was conducted to evaluate the topography of lesions and their correlations with gender, age, clinical and histological type and correlation between them.

**Patients and methods:** A total of 159 patients with in non –melanoma skin cancers were studied in Al-Hussain medical city in a retrospective study during the period from January 2012 to June 2016.

After diagnosing each patient and a careful histopathological examination, statistical analyses were done.

**Results:** The analysis included 159 patients with non – melanoma skin cancers (NMSCs) Eighty eight patients with basal cell carcinoma were seen (55.34%). The majority of patients were in the form of nodular and noduloulcerative &the second most type was basosquamous type.

Clinically, it was the same of nodular type as the majority of cases were diagnosed with this type

Fifty patients with SCCs (31.44% ) were seen. Clinically, the patients with SCC presented as a hard indurated plaques or nodules, some were ulcerated.

Nearly all the types may be in the form of well differentiated or moderately well differentiated.

## Discussion:

NMSCs comprise a significant proportion of all skin cancer patients in the world. BCC is the commonest NMSC worldwide and various studies have reported SCC as the second most prevalent.

Basal cell carcinoma commonly seen on the faces of the middle age or elderly with male to female ratio is about 3: 2 and the incidence increases markedly after age of 40 years.

Squamous cell carcinoma was the next common non – melanoma skin cancers of the face forming about 31.44 % of cases as a potentially lethal form of skin cancer, It can arise from actinic keratosis with a slight male predominance in the male to female ratio 1.17: 1.

The prevalence and distribution of lesions of SCC correlates well with the exposure to ultraviolet radiation.

**Keyword:** skin, basal cell carcinoma, squamous cell carcinoma, clinical, histopathology.

organ or tissue, representing 4% of total cancers<sup>(1,2)</sup>.

*Basal cell carcinomas (BCC) are the most common type of skin cancer and arise from the basal layer of the epidermis and its*

## Introduction

Skin cancers are now much more common than cancers in the location of another

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appendages. They are locally invasive and aggressive, although it is extremely rare for BCC to metastasize to lymph nodes or distant organs <sup>(3)</sup>.

*Squamous cell carcinoma* (SCC) is the second most common type of NMSC, accounting for approximately 20 % of all NMSC cases. SCCs arise de novo, but unlike BCCs, SCCs often arise from precursor lesions that show partial thickness epidermal dysplasia, such as actinic keratosis (AK) <sup>(4,5)</sup>. In Iraqi patients a reported study of NMSC, found that SCC affected male more than female, there are commonly outdoor workers mainly farmers. About (77.3%) men and (22.7%) women, ranging in age from 15 to 90 years (mean 60.7 years) with the peak incidence at 60-70 years <sup>(4)</sup>.

#### **Clinically**

Classification of BCC subtypes is made according to growth patterns. However, the clinical categories are commonly used (as suggested by the WHO): *noduloulcerative BCC, superficial BCC and morpheaform BCC*. A typical, superficial BCC is contrasted to a locally advanced infiltrative BCC <sup>(6)</sup>.

SCCs appear as ill-defined keratotic papules and nodules which may be ulcerated with pain and paresthesia when it's advanced. SCC in situ has many diverse clinical presentations as: *actinic keratosis, bowen's disease, bowenoid papulosis and erythroplasia of queyra*. SCCs can arise de novo, but unlike BCCs, SCCs often arise from precursor lesions that show partial thickness epidermal dysplasia, such as actinic keratosis (AK) <sup>(7)</sup>.

#### **Histopathology**

BCC can be divided into several groups, and the three most common ones, based on histopathology, are nodular, superficial, and infiltrative/morpheaform <sup>(8)</sup>.

SCC histologically reveals proliferation of anastomosing nests, sheets, and strands of atypical keratinocytes originating in the epidermis and infiltrating into the dermis. Prominent intercellular bridges are characteristic <sup>(9)</sup>.

## **Material and methods**

The study samples included 159 formalin – fixed, paraffin – embedded tissue blocks, which have been diagnosed as basal cell carcinoma (BCC) dated from (January ,2012 till June, 2016). The study samples were obtained from the archives of the department of Histopathology in Al-Hussien Medical city/ Kerbala and private laboratories. Data were translated into a computerized database structure. An expert statistical advice was sought for. Statistical analyses were done using SPSS version 20 computer software (Statistical Package for Social Sciences) in association with Microsoft excel 2010.

## **Results**

A total of 159 patients with non–melanoma skin cancers (NMSCs) were seen. Fifty patients with squamous cell carcinomas were seen (31.44%) and 88 cases were BCC (55.34%), with a male to female ratio of 1.2: 1, as shown in table (1). Regarding the age of presentation, their ages ranged between 10 – 99 years with a mean  $\pm$  standard deviation (SD) of  $54.9 \pm 16.1$  years, the bulk of the patients were between 40 – 80 years of age. Most of the cases were in the 6th decade of life.

Regarding the relative frequency of different site wise distribution of BCC and SCC for each sample, (87.51%) of BCC cases were located on head and neck region and majority were seen in the nose which was the most frequent topographical region affected by BCC while the cheek was the most topographic site affected by SCC with a percentage about (80%) as shown in table (2). In the present study we study BCC cases with specific histopathological subtypes as: solid subtype (fig.1), adenoid subtype, basosquamous subtype, superficial subtype, and the noduloulcerative BCC was the most frequent clinical type of BCC (fig.2). Figure (3) shows well differentiated SCC

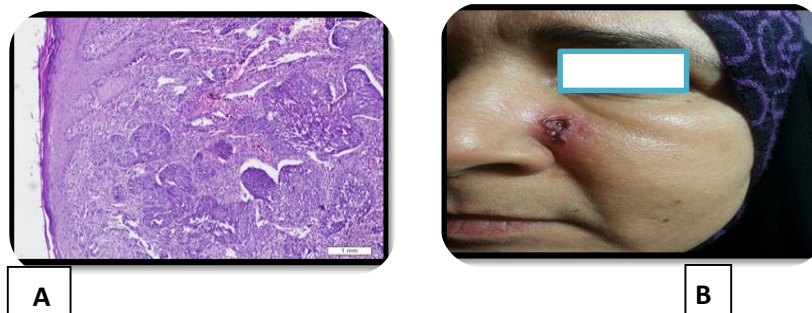
which is the most frequent pathological SCC type .

**Table 1.** The types and numbers of cases of non – melanoma skin cancers

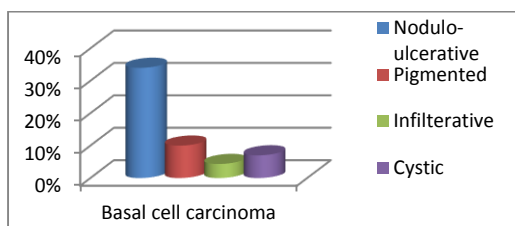
| Malignant tumors | male | female | no. of cases | %      |
|------------------|------|--------|--------------|--------|
| SCC              | 27   | 23     | 50           | 31.44% |
| BCC              | 47   | 41     | 88           | 55.34% |
| M.F.             | 10   | 7      | 17           | 10.71% |
| Kaposi sarcoma   | 4    | 0      | 4            | 2.51%  |
| total            | 88   | 71     | 159          | 100%   |

**Table 2.** The relative frequency of different site wise distribution of BCC and SCC cases.

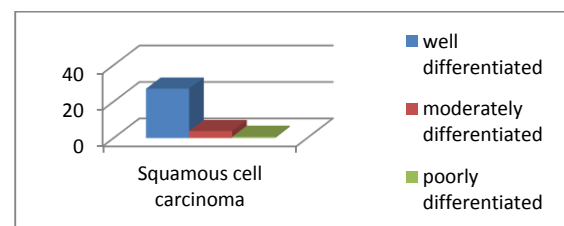
| Site      | BCC |        | SCC |        |
|-----------|-----|--------|-----|--------|
|           | no. | %      | no. | %      |
| eye       | 10  | 6.28%  | 1   | 0.6%   |
| nose      | 28  | 17.62% | 2   | 1.3%   |
| forehead  | 12  | 7.54%  | 8   | 5.05%  |
| cheek     | 3   | 1.88%  | 14  | 8.85%  |
| upper lip | 4   | 2.52%  | 2   | 1.3%   |
| Post. ear | 4   | 2.52%  | 3   | 1.8%   |
| scalp     | 14  | 8.80%  | 1   | 0.6%   |
| lower lip | 2   | 1.26%  | 9   | 5.67%  |
| trunk     | 7   | 4.40%  | 4   | 2.5%   |
| limb      | 4   | 2.52%  | 6   | 3.77%  |
| total     | 88  | 55.34% | 50  | 31.44% |



**Figure 1.** Basal Cell Carcinoma. (A)Basosquamous type. The peripheral cell layer of the tumor masses often shows a palisade arrangement, 100x, H&E.(B) female 35 years has ulcerated bcc with beaded borders involving left cheek and the side of the nose.



**Figure 2.** The clinical types of BCCs



**Figure 3.** The pathological types of SCCs.

## Discussion

The non-melanoma skin cancers (NMSC) are the most frequently diagnosed malignancies worldwide <sup>(10)</sup>.

The two major types of NMSC, basal cell (BCC) and squamous cell carcinoma (SCC) have a relatively small impact on mortality but their public health impact is considerable. In our study, BCC was the commonest type of non – melanoma skin cancers of the face forming about 55.34 % of the cases while SCC were the second most common type forming about (31.44 %) of cases. This finding was comparable to those reported in the literature <sup>(11-13)</sup>. Squamous cell carcinoma was the next common non – melanoma skin cancers with a slight male predominance in the male to female ratio 1.17:1. This contradicts to what has been reported in the literature which shows that men are twice affected as women with a sex ratio of 2: 1 <sup>(14)</sup> while agrees with Al-Hattab et al who reported an equal sex ratio (1: 1) in Iraqi patients <sup>(15)</sup>.

This difference probably because of a relatively small number of cases was taken during the study period.

Also we were unable to assess the impact of race because the study population based in Iraqi patients lacks racial diversity which considered as a limitation.

Noduloulcerative was the commonest type of BCC. The clinical types of BCC and sites of involvement, in the present study were comparable to what has been published <sup>(13,16)</sup>.

Regarding the site, nose, scalp and forehead were the commonest sites of involvement which demonstrates the major influence of sun exposure in the development of skin cancers. This corroborates the result of a previous study by Franceschi et al. <sup>(17)</sup>. The prevalence and distribution of lesions of SCC correlates well with the exposure to ultraviolet radiation. The clinical, histopathological and site of involvement of SCC in our study were incorporated the

clinicohistological confirmation of few other published studies <sup>(13, 18 &19)</sup>.

## Conclusion and Recommendations

NMSCs comprise a significant proportion of all skin cancer patients in the world.

BCC is the commonest variety and SCC is the second most common type.

The importance of understanding the risk factors as well as studying the frequency of histopathological and clinical patterns can help in the overall proper prognostic outlook for patients and also in planning an effective management.

Therefore, greater awareness and further studies are recommended to reduce its morbidity and mortality.

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