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RESEARCH ARTICLE

Basal cell carcinoma and its subtypes in Iraqi population

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Abstract

Background: Basal cell carcinoma (BCC) is the most common skin malignancy; accounting for up to 80% of all cancers arising from the epidermis. And it is the most common malignancy in the white population worldwide, Accounts for approximately 75% of all skin cancers ⁽¹⁾. BCC is a slow-growing and locally invasive skin tumor which rarely metastasizes, derived from cells of the basal layer of the epidermis ⁽²⁾.

Objective: to show the incidence of the basal cell carcinoma and which common type in Iraqi patients.

Patients and methods: Thirty nine patients with basal cell carcinoma were enrolled in Department of Dermatology&Venereology-Baghdad Teaching Hospital, Medical City, Baghdad, Iraq, from January 2010 to October 2011. A history was taken from each patient regarding the following: age, sex, occupation, smoking, alcoholic intake, and duration of the lesions and their number, recurrence of the lesion, history of previous therapy, family history, past medical history, past surgical history, past radiation history, drug history, and association conditions. Detailed history and Close physical examination was performed including location, size, number, type and color of the lesion, regional lymphadenopathy, and photodamaged skin. Shave, incision or punch biopsies were done for all patients at the first visit for Histological examination, and Serial-section skin biopsies were stained with hematoxylin& eosin.

Results: Thirty nine patients with basal cell carcinoma were enrolled in this study proved clinically and Histological; 32 (82%) males and 7 (18%) females with males to females ratio 4:1, their ages ranged from 30-87 with a mean and SD of 64.114 ± 12.68 years, and the duration of the disease ranged from 2 months to 30 years. The total number of the lesions was 62 lesions as follow: pigmentonodular BCC 33 (53.2%), pigmented BCC 17 (27.42%), superficial BCC 4 (6.45%), ulcerative BCC 3 (4.83%) asosquamous carcinoma 2 (3.22%), ulcerative BCC 2(3.22) and morpheaform BCC 1 (1.6%).

Eighty eight percent of the lesions of BCC were located on the head: face 45 (72.6%) ,scalp 10 (16.12%) of the total lesions and the rest of the lesions 7 (11.3%) distributed on the different sites of the body: (neck 2 lesions, back 2 lesions, chest 1lesion forearm 1 lesion, dorsum of the hand 1 lesion).

Conclusion: pigmentonodular (53.2%) and pigmented BCC (27.42%) are the most common subtypes of BCC in Iraqi patients.In general, there is an increase in incidence of skin cancers in Iraqi population in last few years. Nonetheless, the most reliable way to reduce the chronic effects of solar radiation is limit the exposure. The regular use sunscreen has been suggested to reduce the UVB-induced skin changes as well as the number of nonmelanoma skin cancers.

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INTRODUCTION

Basal cell carcinoma (BCC) is the most common skin malignancy; accounting for up to 80% of all cancers arising from the epidermis ⁽¹⁾. Basal Cell Carcinoma (BCC) is a slow-growing and locally invasive skin tumor which rarely

metastasizes, derived from cells of the basal layer of the epidermis ⁽²⁾. Basal Cell Carcinoma incidence is on the rise worldwide because of increased exposure to UV light and ozone depletion in various parts of the world due to environmental and industrial pollution ⁽³⁾. The most significant risk factors appear to be exposure to ultraviolet radiation and genetic predisposition ⁽⁴⁾. It usually occurs on sun-exposed areas of skin, and therefore about 74% of cases arise in the head and neck ⁽⁵⁾. The subtypes of basal cell carcinoma are nodular basal cell carcinoma, pigmented basal cell carcinoma, cystic basal cell carcinoma, superficial basal cell carcinoma, micro-nodular basal cell carcinoma, morpheaform and infiltrating basal cell carcinoma. Both micro-nodular and morpheaform subtypes are aggressive in nature. ⁽⁶⁾ A biopsy is the most reliable diagnostic modality for BCC. Excision is the treatment of choice for BCC. Mohs micrographic surgery is the therapeutic modality of choice for primary and high-risk facial BCCs ⁽⁷⁾. Currently, there are several treatment modalities for BCC, such as surgical excision, Electrodessication and curettage, topical 5% imiquimod cream, Topical 5-fluorouracil 5% ⁽⁸⁾, radiotherapy ⁽⁹⁾, cryotherapy and photodynamic therapy ⁽¹⁰⁾.

Methodology:

Thirty nine patients with basal cell carcinoma were enrolled in Department of Dermatology&Venereology-Baghdad Teaching Hospital, Medical City, Baghdad, Iraq, from January 2010 to October 2011. A history was taken from each patient regarding the following: age, sex, occupation, smoking, alcoholic intake, and duration of the lesions and their number, recurrence of the lesion, history of previous therapy, family history, past medical history, past surgical history, past radiation history, drug history, and association conditions. Detailed history and Close physical examination was performed including location, size, number, type and color of the lesion, regional lymphadenopathy, and photodamaged skin. Shave, incision or punch biopsies were done for all patients at the first visit for Histological examination, and Serial-section skin biopsies were stained with hematoxylin& eosin.

Results:

Thirty nine patients with basal cell carcinoma were enrolled in this study proved clinically and Histological; 32 (82%) males and 7 (18%) females with males to females ratio 4:1, their ages ranged from 30-87 with a mean and SD of 64.114 ± 12.68 years, and the duration of the disease ranged from 2 months to 30 years. The total number of the lesions was 62 lesions as follow: pigmentonodular BCC 33 (53.2%), pigmented BCC 17 (27.42%), superficial BCC 4 (6.45%), and ulcerative BCC 3 (4.83%), Basosquamous carcinoma 2 (3.22%), nodular BCC 2(3.22) and morpheaform BCC 1 (1.6%).

Eighty eight percent of the lesions of BCC were located on the head: face 45 (72.6%), scalp 10 (16.12%) of the total lesions and the rest of the lesions 7 (11.3%) distributed on the different sites of the body: (neck 2 lesions, back 2 lesions, chest 1lesion forearm 1 lesion, dorsum of the hand 1 lesion).

(Fig-): Nodular BCC H&E basophilic nodular tumor island with prominent clefting

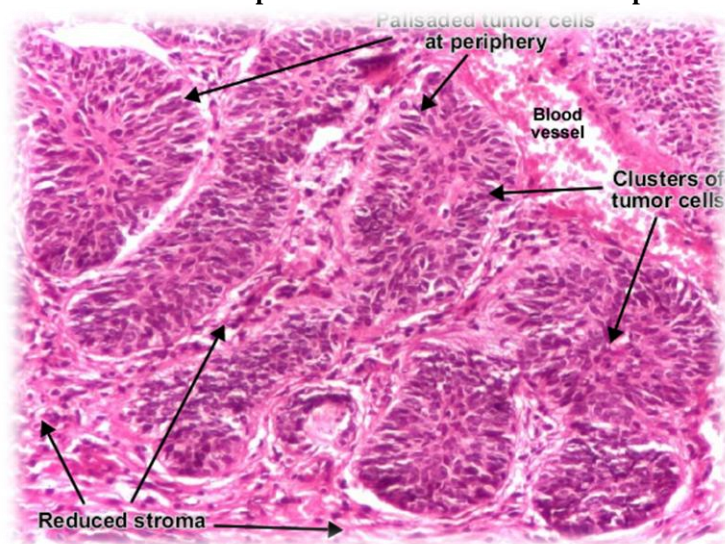


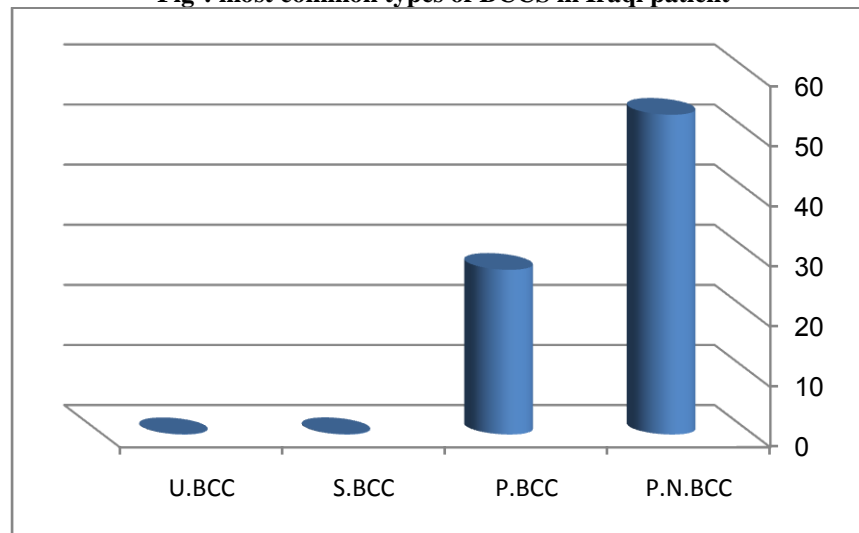
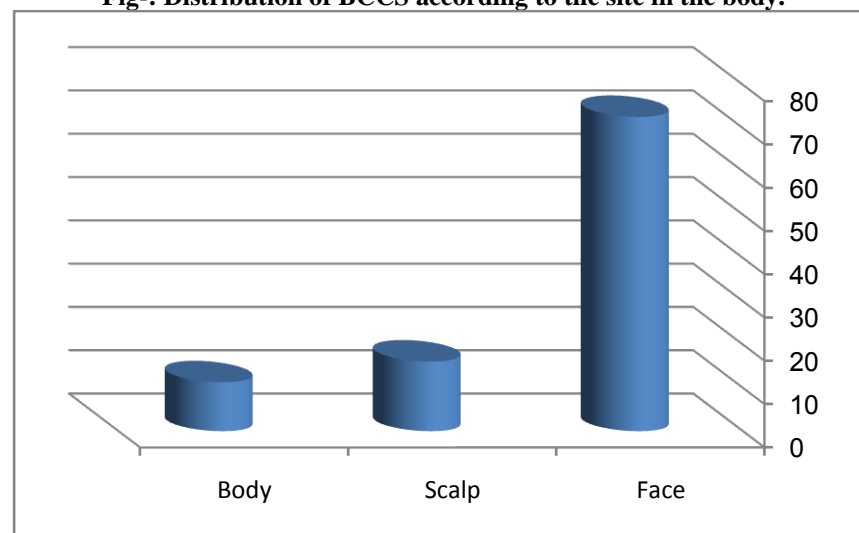
Fig-: most common types of BCCS in Iraqi patient**Fig-: Distribution of BCCS according to the site in the body.**

Fig-: pigmented BCC in alar nasi of Iraqi patient.



Fig-: Pigmented BCC in the neck of Iraqi patient



Fig-: pigmentonodular and nodular BCC in the cheek of Iraqi patient.



Fig-: morpheaform BCC in the temporal area in Iraqi patient.



Fig-: ulcerative BCC in tip of nose and pigmentonodular BCC in nasolabial area.



Fig-: Basosquamous carcinoma in mid of the nose in Iraqi patient.



Fig-: Ulcerative BCC Infraorbital area in Iraqi patient.

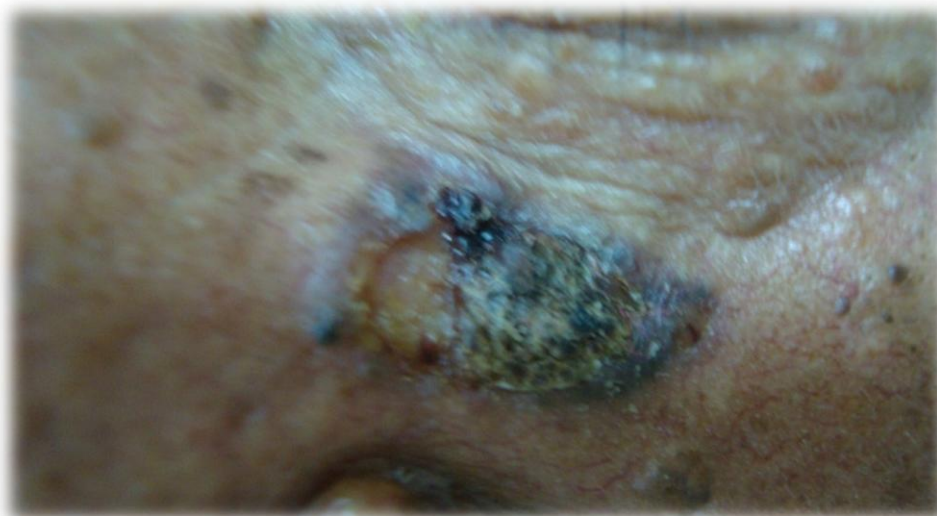


Fig-: Giant Pigmentonodular BCC in front ear in Iraqi patient.



Discussion:

In Iraq although most of the population have dark skin; mostly Fitzpatrick skin type III and IV, in (68%) of cases ⁽¹¹⁾ still the frequency of the skin cancer in an increased all over the country, were as e.g BCC account for about (74.67%) ⁽¹²⁾. And the most common subtypes of BCC is pigmentonodular one for account (93.7%) which could be easily confused with malignant melanoma ⁽¹³⁾.

I believe that the cause of increased skin cancers in Iraq population as follows:

✚ **Iraq is from sunny climate countries** and your population exposes to UVR most of the year, so the risk of skin cancers increases with life-long accumulated UVB dose. However, BCC incidence has only a modest association with cumulative exposure and is more likely to occur on areas of body moderately exposed to the sun.

✚ **Ionizing Radiation;** carcinogenesis almost certainly involves multiple genetic alterations. The energy released by ionizing radiation has the potential to produce DNA strand breaks, major gene deletion or rearrangements, and other base damage ⁽¹⁴⁾. The basal layer of the epidermis appears to be quite sensitive to radiation carcinogenesis while the suprabasal layer seems to be more resistance ⁽¹⁵⁾. This is shown that radiation induced BCC at lower or moderate radiation doses. After the **first Gulf war 1991**, there is an increase in skin cancer mainly from the region south of Baghdad; these increases in the frequency of the cases could be attributed to exposure to the depleted uranium, which exposed people to radiation as results of American bombing of Iraqi soil ^(16, 17). (The report, written in April 1991 and leaked to **The Independent newspaper** of London in November of that year, estimates that at least forty tons of depleted uranium were dispersed during the war) ⁽¹⁸⁾.

✚ The capacity of DNA damage repair mechanisms decreases, while oncogene activation and the frequency of defects in tumor suppressor genes increase with aging ⁽¹⁹⁾.

✚ **Immunosuppressive agents**, many of which are used after organtransplantation, such as cyclosporine, azothioprine and corticosteroids associated with a greater incidence of skin cancers.

✚ **PUVA** (Psoralin Ultraviolet A; uses in some skin disease such as psoriasis) therapy is strongly association with skin cancer progression, especially in those patients who have immunosuppressive therapies such as radiation, methtrexate, or corticosteroids.

✚ **Ingestion of arsenic** in water from wells has been associated in development of BCCS and SCC.

Conclusion:

pigmentonodular (53.2%) and pigmented BCC (27.42%) are the most common subtypes of BCCs in Iraqi patients. In general, there is an increase in incidence of skin cancers in Iraqi population in last few years. Nonetheless, the most reliable way to reduce the chronic effects of solar radiation is limit the exposure. The regular use sunscreen has been suggested to reduce the UVB-induced skin changes as well as the number of nonmelanoma skin cancers.

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