

RESEARCH COMMUNICATION

Epidemiological and Excision Margin Status of Basal Cell Carcinoma - Three Years Armed Forces Institute of Pathology Experience in Pakistan

Muhammad Asif, Nadira Mamoon, Zafar Ali*, Farhan Akhtar

Abstract

Objective: The rationale of this study is to analyze the demographic distribution and clearance of excision margin in basal cell carcinoma among patients diagnosed at AFIP Rawalpindi. **Materials and methods:** Records of a total of 235 cases diagnosed from January 2005 to December 2007 were retrieved from our tumour registry. The following variables were recorded for each patient: age, gender, site of biopsy, type of biopsy (incisional vs excisional), and status of clearance of surgical margins. The data was analyzed using SPSS version 17.0. **Results:** Among the total of 235 cases, 125 (53.2%) were males and 110 (46.8%) were females (1.2:1). The ages ranged from 32 to 90 years with mean age of 60.0 + 11.7, with general age-dependent increase. The nose was the most frequent site (28.9%), followed by the eye including the orbit (24.7%), and the cheek (20.4%). Among the type of biopsies, 140 (59.6%) were excisional and 95 (40.4%) were incisional (Figure 3). With the former, the excision margins were reported as clear in 82 (34.9%) cases and involved in 55 (23.4%) cases. **Conclusion:** Basal cell carcinoma (BCC) appears to be on the rise in our part of world. Careful clinical assessment, and complete excision with the help of frozen sections can avoid recurrence.

Keywords: Basal cell carcinoma - incisional/excisional biopsy - margin clearance

Asian Pacific J Cancer Prev, 11, 1421-1423

Introduction

Basal cell carcinoma (BCC) is the most common form of skin cancer worldwide, affecting approximately one million Americans each year. Its incidence is increasing worldwide by up to 10% a year. Depletion of the ozone layer which filters out ultraviolet light rays is important in cutaneous carcinogenesis; increased outdoor recreational activities are probable causes responsible for the increased incidence of BCC. Phototherapy and tanning beds are other ways for ultraviolet light exposure and predispose to BCC. Immunosuppressant settings such as AIDS, organ transplantation, exposure to ionizing radiation and chemicals are additional risk factors for developing BCC. Patients with certain genetic syndromes such as Xeroderma Pigmentosa, nevoid basal cell carcinoma syndrome and Bazex syndrome are also at risk to develop BCC (Wong et al., (2003).

The majority of BCC appear on the head and neck region. The most common site of BCC is nose accounting for 25-30% cases. BCC is rarely found on the back of hands although it receives a significant amount of solar radiation (Rosai, 2004). The course of BCC is unpredictable, it can remain small for years with little or no tendency to grow, or may grow rapidly (Kumar et al., 2004; Weshah et al., 2007).

*Department of Histopathology, Armed Forces Institute of Pathology, Rawalpindi, Pakistan *For correspondence: zafarali82@gmail.com*

The various treatment modalities for BCC include; Local therapy with chemotherapeutic and immunomodulating agents, curettage, surgical excision (with 4 mm clear margins), Mohs micrographic surgery, radiotherapy and cryotherapy. In our setup, the surgical excision is the most common form of treatment which is usually performed by Dermatologist. Complete surgical excision with 4 mm clear margin prevents tumour recurrences (Silverman et al., 1992).

This rationale of this study to determine the demographics of BCC and status of margin clearance in our population.

Materials and Methods

This study was carried out in the Department of Histopathology, AFIP, Rawalpindi. Record of a total of 235 cases of BCC diagnosed during the years January 2005 to December 2007 was retrieved from tumour registry data. The following variables were recorded for each patient: Age, gender, site of biopsy, type of biopsy (Incisional vs Excisional) and status of clearance of excision margins. All the data was entered and analyzed in statistical package for social sciences (SPSS) version 11.0. Frequencies and percentages were calculated for qualitative variables like gender, site of biopsy, type of

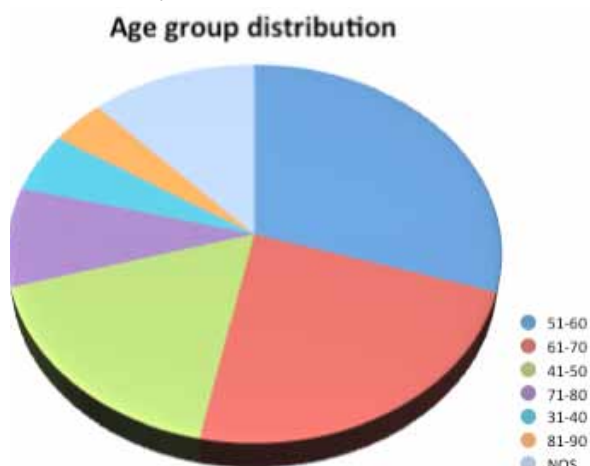


Figure 1. Age Distribution of the Basal Cell Cancers

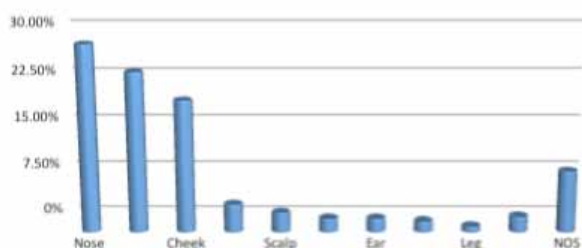


Figure 2. Site of Occurrence of Basal Cell Cancer

biopsy and clearance of excision margins. Mean, mode and standard deviation were recorded for quantitative variables like age and age groups.

Results

Among the total of 235 cases, 125 (53.2%) were males and 110 (46.8%) were females (1.2:1). The ages ranged between 32 to 90 years with mean age of 60.0 + 11.7. The distribution of patients among different age groups is also shown in Figure 1.

Nose was the most frequent site in 68 (28.9%) cases, followed by eye including orbit having 58 (24.7%) cases, 48 (20.4%) in cheek, 10 (4.3%) in forehead, 7 (3%) in scalp, 5 (2.1%) in lip and ear each, 4 (1.7%) in forearm and 2 (0.9%) in leg. The least common sites were chin, shoulder, abdominal wall, axilla, chest and foot having 1 (0.4%) case at each site respectively. In 22 (9.5%) cases, the site of biopsy was not mentioned on laboratory request form. (Figure 2) Among the type of biopsies, 140 (59.6%) were excisional and 95 (40.4%) were incisional. Among the excisional biopsies, the excision margins were reported as clear in 82 (58.6%) cases and involved in 55 (39.3%) cases. In 3 (2.14%) cases, the excision margins were not commented upon due to fragmented nature of biopsy.

Discussion

Basal cell carcinoma (BCC) typically occurs in areas where people are more exposed to sunlight. It is a slow growing malignancy which rarely metastasizes, but it can cause significant local destruction and disfigurement if untreated and inadequately excised. In Pakistan, there is a gradual rise in cases of BCC. This may be due to fair

skinned people residing in northern areas including North West Frontier Province (NWFP). According to the AFIP publication titled “Monograph on the pattern of malignant tumours”, skin tumours were the second most common (8.47%) malignant tumours in both males and females (Jamal et al., 2006).

During the period of study (January 2005 to December 2007), a total of 9872 malignant tumour were diagnosed at AFIP Rawalpindi. Out of these cases, skin malignancies comprised 712 (7.2%) cases and BCC comprised 235 (33%) of skin cancers. In a study by Ayesha et al, skin malignancies comprised 1.04% (Ahmed et al., 2007). Out of total skin malignancies, BCC comprised 40% cases.

In our study, the mean age was 60.04 and two third of patients fell in sixth decade. The least frequent age group was fourth decade. Maximum number of patients (31.9%) fell in ages 61-80 years. In a study by Ra’ade et al., (Weshah et al., 2007), the occurrence ages ranged from 23-90 years. Most frequent age group in this study was 60-69 (40.8%) and the least frequent was 20-29 (1.3%). In a study by Ayesha et al, the mean age was 59.54 ± 15.66 with age range of 17-103 years (Ahmed et al., 2007).

Regarding the gender distribution of our patients, 1.2:1 male to female ratio is consistent with data in current literature (Mackie, 1998). Men have greater risk to develop BCC, since they are involved more in outdoor activities and jobs with chronic prolonged exposure to sunlight. In addition, female tend to wear clothes that cover the head, face and most parts of the body according to religious and traditional beliefs. In our study, the distribution of BCC among females is 110 (46.8%) cases constituting a significant number. Several international studies reported higher incidence of BCC in women. In a study from China, the male to female ratio was 1:1.1 (Zhang et al., 1993). In a Brazilian study, BCC comprised 59.3% cases in females. BCC is also reported to be common in females in North American black patients (Sonia et al., 2006). In studies from Australia, the basal cell carcinoma was distributed in a similar fashion among both the sexes (Abreo and Sansui, 1991; Betti et al., 1995).

Exposed parts of the body are the most common sites of BCC occurrence, between 93.5% of BCC found in the head and neck regions, particularly on the nose, forehead, periocular areas and cheek. The vast majority of lesions in our patients were located on the face and the most common locations were nose and cheek. The results from Asian countries are also similar to ours and are in accordance with the literature (Levi et al., 1988; Marks, 1995). We have not encountered any BCC on the dorsum of hands despite the fact that this area is constantly exposed to sunlight. Scalp involvement has been reported in 2.1% of patients, most men (especially the elderly) in northern part of country and NWFP used to wear a traditional head cover particularly when they are outdoors, which provide a good protection to their scalps against sunlight. Absence of risk factors for BCC development other than solar radiation in our patients; may also explain why most tumors had occurred on the face.

In our study among the excisional biopsies, the histopathological examination of excision margins were reported as incompletely excised in 23.4% patients. In a

study by Weshah et al. (2007), surgical margin of the tumor were reported as incompletely excised in 14.5% patients. This high percentage of excision margin involvement in our setup may be due to lack of specialized surgical skills, ignoring the importance of frozen section and Mohs micrographic surgery. In our study, the incisional biopsies comprised a significant number which reflects the inappropriate clinical assessment regarding presence of BCC and neglecting the importance of preoperative frozen section. The frozen section can be very helpful in diagnosing and commenting upon the clearance of excision margins. This procedure can further reduce the incomplete excision and its recurrence. Frank (1989) in his study documented the importance of frozen section by showing 3 possible recurrences when BCC were excised under frozen section control.

In conclusion, basal cell carcinoma is rising especially in women. It is more common in sixth decade of life. The exposed parts, nose, eye including orbit are more common sites for development of BCC. Appropriate clinical assessment, surgical skills, and use of preoperative frozen section can result in complete excision of BCC with minimal recurrence.

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