

Incidence and Pattern of Skin Cancer: Experience of Two Referral Hospitals in Jeddah, Saudi Arabia

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ABSTRACT. This retrospective study describes the pattern of malignant skin tumors in 74 cases seen at King Abdulaziz University Hospital between 1984 and 1996, and at King Khalid National Guard Hospital between 1994 and 1996. Among the 53 cases of known nationalities, 28 were Saudis and 25 were non-Saudis. The male to female ratio of all cases was 1.7:1.0. The mean age was 53 years. Basal cell carcinoma was the most common cancer (35%), followed by Squamous cell carcinoma (20%), and Malignant Melanoma (10.6%). Basal cell carcinoma occurred on the head compared to Squamous cell carcinoma, which occurred on the head and extremities in equal frequency, while melanoma occurred mainly on the extremities. Cutaneous t-cell lymphoma occurred in 6.6% of the cases, while Kaposi sarcoma occurred in 5.4% of cases. Findings were compared with the available studies in Saudi Arabia and neighboring countries.

Keywords: Basal cell carcinoma, Squamous cell carcinoma, Melanoma, Saudi Arabia.

Introduction

Skin cancer is common in the West. The incidence of skin cancer is highest in those geographic regions where light-skinned people are exposed to large amounts of sunlight compared to dark-skinned people^[1]. It is uncommon to see skin cancers in the dermatology clinics in Saudi Arabia. A recent study from the Asir region described the

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pattern of malignant skin tumors in that region^[2]. Other studies from Saudi Arabia have described the patterns of malignant tumors in general, one from the Asir region, another one from the Eastern region, and a third from the Western region in mid 1970s, and the fourth from the Al Baha area^[3-6]. We wanted to study the pattern of malignant skin tumors in two of the tertiary referral hospitals in Jeddah which are referral hospitals serving different socioeconomic and ethnic groups.

Patients and Methods

From 1984 to 1996 all cases of histologically confirmed skin cancer at King Abdulaziz University Hospital (KAUH) were collected. While it was possible to retrieve cases from King Khalid National Guard Hospital (KKNHG) in Jeddah, they were collected from 1992 to 1996. The two hospitals have 550 beds and serve a large portion of the patients in Jeddah. The patient's characteristics and information were collected from their medical files.

Results

During the 13-year period, 40 cases of skin cancer were identified at KAUH, while 34 cases were identified at KKNHG (Table 1). Among the 53 cases of known nationalities, 28 were Saudis and 25 were non-Saudi, with the equal ratio of 1:1. The male to female ratio of all the cases was 1.7:1.0 (47 males, 27 females). The mean age was 53 years (2 months - 82 years).

TABLE 1. Distribution of different types of skin cancer and patients' characteristics and tumor sites.

Histopathology	No. of Cases	Sex		Mean Age	Nationality		Site		
		M	F		Saudi	Non-Saudi	Head	Trunk	Extremities
BCC	26(35)	17	9	55.6	7	13	22	1	-
SCC	15(20)	12	3	41.0	6	2	5	1	5
MM	8(10.6)	2	6	60.0	3	3	1	2	3
CTCL	5(6.6)	4	1	41.2	4	1	1	5	5
BASOSCC	3(4)	2	1	58.0	-	-	1	-	-
KS	4(5.4)	4	-	65.0	3	1	-	-	4
OTHERS	11(14.9)	6	5	47.8	3	4	1	6	1

BCC=Basal cell carcinoma; SCC=Squamous cell carcinoma; MM=Malignant melanoma; CTCL=Cutaneous T cell lymphoma; BASOSCC=Baso-squamous cell carcinoma; KS-Kaposi sarcoma.

Basal cell carcinoma (BCC) was the most common cancer (35%). Two young cases with BCC; a 16-year old non-Saudi patient with Xeroderma Pigmentosum, and a 31-year old Saudi albino male. Four patients had pigmented BCC, 2 Saudis and 2 non-Saudis. One patient had skin type 6 and another had skin type 5, while the rest of the patients had skin type 3 and 4. The most common site of BCC was the head in 84.6% of the cases.

Squamous cell carcinoma was the second most common skin cancer in 20% of the patients, then malignant melanoma was found in 10.6% of the patients. Three cases (4%) were baso-squamous cell carcinoma, 1 on the face while the 2 others' sites were not recorded.

Cutaneous t-cell lymphoma was found in 5 cases (6.8%); Kaposi sarcoma in 4 cases, 1 of them was a non-Saudi male with positive HIV, while the other 3 were elderly Saudi men with negative HIV. There was 1 case of leiomyosarcoma and 1 case of dermatofibrosarcoma protuberans. Other skin cancer cases (14.9%) were non-primary skin cancer victims (metastasis from breast carcinoma, thyroid carcinoma, and leukemia infiltrate and non-Hodgkin's lymphoma). Malignant appendageal skin tumors were rare and were not included in this study.

Discussion

The number of cases of skin cancer in this study was low (total 74 cases), although, the cases were collected over 13 years at KAUH and over 4 years at KKNGH. It is unlikely that this low number to be secondary to under reporting, as all the surgical pathology materials and their results are recorded. So it is presumed a true reflection of the cases we see in these hospitals.

This was similar to the finding in a 500 bed Al-Ain teaching hospital. In the neighboring country of the United Arab Emirates, 52 cases were found over a 15-year period between 1981 and 1995^[7].

One hundred and thirty-seven cases over a 5-year period, between 1987 and 1991, were reported from the Asir region where cases of malignant skin tumors received at the Asir Central Hospital laboratory were examined. This laboratory is the only central pathology laboratory to receive all pathology specimens from different peripheral hospitals of the Ministry of Health in this region^[2].

From the same hospital in an earlier study, 96 cases were found over a 3-year period between 1987 and 1989^[3].

In another study from the Eastern region of Saudi Arabia, 33 cases (18 Saudis and 15 non-Saudis) were found over 2 years between 1987 and 1988^[4]. This was a population-based study where cases were collected from all over the Eastern region including

the Central Pathology Laboratory of the region.

In 1979, Stirling *et al* reported 155 skin cancer cases collected over a 3-year period from the central laboratory, Bab Sharif General Hospital, Jeddah. This laboratory serves the Government hospitals and specialty clinics of the whole of the western region of Saudi Arabia including the urban population of Makkah, Madinah, Taif, and Jeddah^[5].

So it is clear that the numbers reported in these studies represent cases from the whole region hospitals and not from a single hospital. Table 2 compares the findings of our study to those reported from Asir and Al Baha regions.

TABLE 2. Comparison of our study with Asir and Al Baha study.

	This Study	Asir Study	Al Baha Study
BCC	35%	36.5%	52.3%
SCC	20%	41.6%	27.9%
MM	10.6%	11.7%	14.0%

BCC=Basal cell carcinoma; SCC=Squamous cell carcinoma; MM=Malignant melanoma.

In our study, BCC was the most common skin cancer; this is the same as found in Al Baha, while it was the second most common cancer in Asir^[2,6].

The mean age of our patients was 55.6 years; the female to male ratio was 2:1. The head was the most common site. It was more in non-Saudis with the ratio of 2:1.

BCC was the prevailing skin cancer in Qatar, 66 cases of BCC were diagnosed from 1990 to 1994. Expatriates formed the highest proportion and of these, Europeans were predominant^[8].

Squamous cell carcinoma was the second primary skin cancer, representing 20% of the cases. This was the same as in the Al Baha study representing 27.9% of cases, while it was the most common skin tumor in the Abha study in 41.6% of cases where 29.8% of these cases developed chronic non-neoplastic skin lesions, *i.e.*, osteomyelitis skin sinuses, keloids, traumatic and burn scars. In this study, SCC was more common in males than in females (4:1), with the mean age of 41 years, which is lower than in BCC cases, and lesions were mainly on the head and extremities.

SCC (73 cases) was also more common than BCC (58 cases) in the western region of Saudi Arabia. They reasoned this to the "Partial Immunity" of the Arabs to BCC that was remarked previously^[5]. In this study, they found often in the case of SCC there was a long history of an ulcerated lesion, but whether this was a pre-existing benign ulcer was uncertain. So it seems that the increased number of SCC over BCC may be due to the large number of cases of secondary SCC, rather than primary SCC.

Cutaneous t-cell lymphoma was found in only 5 cases, which we believe is underestimated as we expect to find more cases. Probably it is under-diagnosed histologically, as the early cases are difficult to diagnose and patients usually need serial skin biopsies to detect the changes in the histology. Stirling *et al* found malignant lymphoma, particularly abdominal lymph node disease that was the most common of the life-threatening malignancies in 1,000 cases. Only 2/128 lymphoma cases were mycosis fungoides^[5].

Kaposi sarcoma was found in 3 elderly Saudi patients, none of them had HIV infection or was a renal transplant recipient, so it was of the sporadic type. Malignant melanoma was found in 8 cases (10.6%), with the male to female ratio of 1:3, with the mean age of 60 years, mainly on extremities. This was similar to the findings of the Asir and Al Baha studies^[2,6]. In the western region study, 19 cases were diagnosed, but their site and patient characteristics were not mentioned. Generally melanoma is not a common cancer in Saudi Arabia^[5].

As Saudi Arabia has the highest sun intensity in the world^[9], we therefore expect to see a much higher frequency of skin cancer than in other parts of the world, *e.g.*, Western countries. The reason for this low incidence in Saudi Arabia may be due to the reduced risk factors, *i.e.*, dark skin colour, the way Saudi men and women dress and the avoidance of outdoor activities when sun intensity is high.

In the 1994 National Cancer Registry Report (the only one report to date), 210 cases of skin cancer among Saudis was reported for the whole kingdom. These cases accounted for 4.2% of all newly diagnosed cases. Skin cancer ranked 10th for males and 8th for females. The five regions with the highest incidence rates were Riyadh 1.85; Asir 1.85; Eastern region 1.87; Hail 1.67; and Western region 1.47^[10].

We are in great need of better documentation of cancer cases in the Kingdom, especially since the national tumor registry has already started.

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نمط أورام الجلد و نسبة حدوثها: خبرة اثنين من مشافي مدينة جدة بالمملكة العربية السعودية

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المستخلص. تصف هذه الدراسة نمط أورام الجلد الجنسية في ٧٤ حالة شوهدت في مستشفى جامعة الملك عبدالعزيز من عام ١٩٨٤م إلى عام ١٩٩٦م، وفي مستشفى الملك خالد للحرس الوطني من عام ١٩٩٤م إلى ١٩٩٦م، وكان ضمن الثلاثة وخمسون حالة المعروفة جنسياتها، ٢٨ سعودياً و٢٥ غير سعوديين، وكانت نسبة الذكور للإناث ٧:١. كان متوسط العمر ٥٣ سنة، وكان الورم الظهاري القاعدي الخلايا أكثرها شيوعاً بنسبة ٣٥٪ ثم الورم الميلاني بنسبة ٢٠٪. وجد أن الرأس هو أكثر المواقع إصابة بورم الخلايا القاعدية مقارنة بسرطان الخلايا الحشوية التي وجدت في الرأس والأطراف بنسب متساوية بينما حدث الورم الميلاني في الأطراف في أغلب الحالات. كما حدث ورم الخلايا البيضاء الليمفاوي على سطح الجلد في ٦، ٦٪ من الحالات، وورم كابوزي الحبيث في ٤، ٥٪ من الحالات. وقد قورنت نتائج هذه الدراسة بنتائج الدراسات المماثلة في المملكة والدول المجاورة.