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Skin Cancer Varieties, A 10 Year Review of Cases In Al-Baha Area .

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Abstract
Introduction: *Skin cancer represents a major health problem worldwide. In the kingdom of Saudi Arabia, skin cancer is considered to be the 9th most common malignancy in both sexes.*
Objectives: *This study aims to determine the frequency, clinical presentation, and pattern of skin cancer among patient presented to King Fahad Hospital at Al-Baha, Saudi Arabia in a 10 year period, between the years 2006 – 2017.*
Methodology: *Data of histopathologically diagnosed cases of skin cancer were collected from Hospital records and analyzed using computer software SPSS version 16.1.*
Results: *The total number of skin malignancy cases reported between the years 2006 to 2017 was 69. The male to female ratio was 1.5:1. The mean age for all cases was 65.5 years. The commonest types of skin malignancy were basal cell carcinoma (37.7%), followed by squamous cell carcinoma (24.6%). Other skin cancers like Mycosis fungoides was (18.8%) and Kaposi sarcoma (8.7%). Malignant melanoma came in the fifth order of frequency (4.3%). Regarding the treatments, skin cancers managed surgically were 24.6%, and those managed with chemotherapy were 17.4% where 58% of the cases were referred to specialized centers outside Al-Baha for further management.*
Conclusions: *The pattern of skin cancers seen in Al-Baha area is similar to that seen elsewhere in Saudi Arabia. There was an observed delay in clinical presentation and the large number of cases referred to centers outside Al-Baha for management necessitated the establishment of a specialized center for cancer.*

Keywords: *skin cancer, Albaha area, Saudi Arabia,*
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I. Introduction

Al-Baha area is located in the south-west of the kingdom of Saudi Arabia between the Holy Makkah and Asir. It consists of six towns and the most important of which are Baljurashy, Almandaq, and Almekhwah (1). This study was conducted at the King Fahad Hospital in Albaha city which is the main tertiary hospital in the area and itconsists of 450 beds.

Skin cancer represents a major health problem worldwide. It is divided into two main groups; melanoma and non-melanoma(2). Non-melanoma skin cancer (NMSC) generally refers to cutaneous Squamous cell carcinomas (SCC) and basal cell carcinoma(BCC), together with malignant melanoma(MM) are sun-related tumours(3). The most common malignant skin lesions are basal cell and squamous cell carcinomas, with basal cell carcinomas being the most common. In the United States, Basal cell carcinoma accounts for more than 75% of skin cancers, affecting nearly 800,000 people yearly whereas squamous cell carcinomas account for 20% and affect approximately 200,000 people every year (4). The incidence of cutaneous melanoma in the United States has increased steadily over the last 50 years and is now 15 per 100,000. It represents approximately 4% of all cancers (4, 5). Kaposi sarcoma (KS) is considered to be one of the most common skin tumours following organ transplantation (6). Mycoid fungoid(MF) which is primary T-lymphocyte neoplasm is very difficult to diagnose(7). Dermatofibrosarcoma protuberans (DFSP) is a rare locally invasive type of skin malignancy with a low tendency to metastasis (8).

According to the WHO, the incidence of skin cancer has been increasing over the past decades between 2 to 3 million non-melanoma skin cancers and 132,000 melanoma skin cancers occur globally each year(9).

The incidence of skin cancer in Asians ranges between 2 and 4%, while it compromises 1–2% of neoplasm in black people and Asian Indian(9). In the kingdom of Saudi Arabia, skin cancer is considered to be the 9th most common malignancy in both sexes.(10) In 2010, the Saudi cancer registry reported that the number of newly diagnosed cancer cases was 13,706; of this, 319 cases was skin cancer, which represents about 2.3 %.(11) In the Al-Baha region and according to King Fahad Hospital records published in a study in 2004, skin cancer represents the most common neoplasm in this region.(12) This study aims to determine the frequency, clinical presentation, and pattern of skin cancer among patient presented to KFH at Al-Baha between the years 2006 – 2017 and to compare the result with the previous studies done here and other parts of the country. Since the last study was conducted in 2003, we need to see if there are any changes regarding presentation and pattern of skin cancer in this area so as to provide a scientific basis to improve the health service for these patients.

II. Methodology

This is a retrospective study of skin cancer cases presented to King Fahad Hospital at the Al-baha area from 2004 to 2016. King Fahad Hospital is considered to be the referral centre for all the six towns around the Al-Baha city. The Information of histopathologically diagnosed cases of skin cancer was collected from the hospital records. All the confirmed skin cancer cases in King Fahad Hospital at Al-Baha area from 2006 to 2017 were included, and no case of skin cancer was excluded. The data that were collected through structured forms were statistically analysed using SPSS software package version 16. Ethical approval was obtained from the joint committee of Al-Baha University Medical School and King Fahad Hospital ethical committees.

III. Results

A total number of 69 skin malignancy cases were reported during the period between 2004 -2016, 55 of them were Saudi and 14 were non Saudi nationality. About sixty one percent of the involved cases were male while 39 % of them were female, with the male to female ratio being 1.5:1. The tribes in descending order were Zahran (23), Ghamid (21), and other tribes (11). In 14 of the skin cancer cases their tribes were missing.
Most of the patients were from Al-Baha city (57), followed by Baljurashi (7), Alqara locality (2), AlMakhuah (2) and 1 patient from Almandaq. Most of the patients who presented with skin cancer were more than 60 years (41 cases), twenty cases were lying between age group 20 and 60 years, and only 3 cases less than twenty years. The mean age for all cases was 65.5 years. The commonest types of skin malignancy in this study were Basal cell carcinoma, which represents 37.7%, followed by squamous cell carcinoma (24.6%).Mycosis fungoides tumour was the third commonest type of skin cancer (18.8%). Kaposi sarcoma ranked the fourth common skin malignancy (8.7%). Malignant melanoma came in the fifth order of frequency (4.3%). There were only two cases of metastatic carcinoma representing 2.9% of skin cancer cases; one was breast and the other from colorectal cancer.Other rare skin tumours which were reported were two cases of dermatofibrosarcoma protuberans (DFSP) that represents 2.9 % of cases. The distribution of these tumours is illustrated in table 1.

Table 1 shows the types of skin cancer and their distributions

Tumour	Frequency	Percent
BCC	26	37.7
SCC	17	24.6
Malignant melanoma	3	4.3
DFSP	2	2.9
Mycosis fungoides	13	18.8
Metastatic carcinoma	2	2.9
Kaposi sarcoma	6	8.7
Total	69	100.0

The distribution of skin cancer, according to the affected site of the body was as follows in descending order, head and neck 39 cases, lower extremity 13cases,upper extremity 8 cases , trunk 3cases,and genital organs one case. In 5 of skin cancer cases the data about the site was not provided As shown in table 2, clinical presentation of different types of skin cancers in the studied cases were skin ulceration, fungating skin lesions and skin nodules. Six cases had positive past medical history of skin cancer, 2 cases had previous history of mole distributed in their body. Two cases had the tumour developed on top of a previous scar. The types of biopsies taken to confirm the diagnosis in descending order of frequency were punched biopsy (45%), incisional biopsy (34.8%), shaved biopsy (17.4%) and excional biopsy (2.9%). Types of management include surgery in 17 cases, chemotherapy in 12 of the cases, and the rest of the cases were referred to as specialized centers outside for further management (58. %)

Table 2 shows the type of the tumour and their clinical presentation.

	Nodule	Ulcer	Fungating lesion	total
BCC	2 3.1%	21 32.3%	1 1.5%	24 36.9%
SCC	1 1.5%	16 24.6	0 0%	17 26.2%
MM	1 1.5%	2 3-1%	0 0%	3 4.6%
DFSP	0 0%	1 1.5%	1 1.5%	2 3.1%
Mycosisfungoides	1 1.5%	9 13.8%	2 3.1%	12 18.5%
Met. Carcinoma	0 0%	2 3.1%	0 0%	2 3.1%
Kaposi sarcoma	0 0%	3 4.6	2 3.1%	5 7.7%
Total	5 7.5%	54 83.1%	6 9.2%	65 100%

IV. Discussion

The number of newly diagnosed skin cancer cases increase yearly worldwide. In the United States of America, more than 3.5 million and of BCC and SCC were diagnosed in the year 2006.(13).Despite this fact which reflects increase in incidence of skin cancer elsewhere, we found that in this study, the total number of all cases collected from the hospital records were only 69 cases in ten years. This number is considered to be less than the cases reported in the study done in Al-Baha in 2003 where 193 cases were reported in the period from 1990 to 2003(12). This could be due to many patients seeking medical advice elsewhere in other specialized centres for treating skin cancer in big cities which are not so far like Jeddah and Taif as ~~an~~ examples (14). Also it could be due to the increased awareness and early presentation of patient with premalignant skin lesions. However in a study done in Dammam (14) in a 6 year period between the years 2008 to 2014, it showed only 27 cases and these results are consistent with the number of cases in our study and the same justifications may be applied. The decrease in total number and individual types of skin cancer cases is shown in table 3 as compared with the previous study done in Al-Baha.

Table 3: Comparing types of skin cancers between this study and previous study in Al-Baha.

Types of Tumours	Current study		Previus study (12)	
	No	%	No	%
Bcc	26	37.7	79	41
Scc	17	24.6	56	29
Malignant melanoma	3	4.3	8	4.1
DSFP	2	2.9	2	1
Mycosis fungoides	13	18.8	2	1
Metastetic carcinoma	2	2.9	8	4.1
Kaposi sarcoma	6	8.7	34	18
Adnexal carcinoma	0	0	8	4.1

The number of Saudi patients presented with skin cancer in our study is 55 which is far greater than the non-Saudi patients that was 14.This result is in agreement with many reports (11, 12, 14). The explanation of the domination of Saudi patients may be due to the fact that the most of the non-Saudi patients sought medical advice from the private sector due to issues related to health insurance of their employers. It is a well-known fact that in most types of skin cancer, males are affected more than females. This study as well reflects the male domination, a fact which is seen as well in many studies done in Saudi Arabia(13, 15). The distribution of the skin tumour among the tribes in this study was Zahran (23), Ghamid (21) and others (11) and this could be merely due to the fact that the main two tribes that reside in the Al-Baha area are Zahran and Ghamid. This tribal dominance does not necessary reflect any genetic predisposition for the tumour itself among these tribes hence these are the dominant tribes in these areas, but does not mean that this point should be ignored and we recommend further genetic investigation to take place in studies carried out in the future. All the six localities of Al-Baha province were represented in this study asshown in the distribution of the residency of the skin cancer cases presented to the King Fahad Hospital. This reflects that this is the main hospital in the region providing advance medical service for cancer cases. The age group mostly affected by the skin cancer was between 71-80 and this is comparable to literature in western countries(16) as well as other studies done here in Saudi Arabia(12, 17). However other studies done locally showed a younger age group between 40-49 were affected more (15).

Table 4: Distribution of different types of skin cancer, patient characteristic and the tumour sites:

Tumour type	No of cases	Sex		Mean age	Nationality		Site		
		Male	Female		Saudi	Non-Saudi	Head and neck	Trunk	Extremities
Bcc	26	17	9	74.5	22	4	25	0	0
Scc	17	9	8	37.	11	6	13	1	3
Malignant melanoma	3	0	3	43.3	1	2	0		3
DFSP	2	1	1	42.5	1	1	0		2
Mycosis Fungoides	13	9	4	43.5	13	0	0	2	9
Metastetic tumour	2	1	1	71	1	1	0	2	0
Kaposi sarcoma	6	5	1	63.6	5	1	0	1	5

BCC is considered to be the most common type of skin tumour in certain races like Caucasians, Hispanic and Japanese Whereas SCC is the second most reported cases following BCC.(13) In our collected data, BCC was the most common type of skin malignancy accounting for 26 cases which represents about 37.7% of all patients and the head and neck are considered to be the only affected site in the body seen in our study, with the male to female ratio of 2:1. These results were similar to other studies done here in Saudi Arabia (12, 14, 15). However, another study done in the Asir area showed BCC to be the second tumour in order of frequency(13). The SCC in our study presented as the second most common tumour affecting 17 patients (24.6%), with the male to female ratio 1:1. The distribution of SCC in body parts as seen in our study is 13 cases in the head and neck, 3 cases in extremities and one case affecting the trunk .These finding were comparable and is agreement to the local literature(14).

In order of frequency the third most common skin cancer was mycosis fungoides (MF) which accounted for 18.8% (13) of our patients, this is similar to studies done in Dhaharan and Jeddda(13, 15) Nevertheless other data showed the MF to be the fourth tumour in frequency (14). Extermities were the main sites for MF (9 cases) and the rest of the cases occur in the trunk. Male to female ratio were 2:1. These findings were considered to be same to what written in literature(18). Kaposi sarcoma (KS) represents the fourth most common tumour in order of frequency in our study and it represents 8.7% (6 cases). Five of these cases affect extremities and in one case the affected part is the trunk. KS was more common in the males with male to female ratio at 5:1.

The KS is a skin tumour that appears secondary to immunodefiency, the cause of immunodeficiency in four of our cases was post renal transplantation on immunomodulation medications (6). In the other two cases of KS, the cause of immunodeficiency was not clear for us. This relation between KS and renal transplanted cases was not seen in the previous study done in the Al-Baha area ten years ago.(12). Malignant melanoma came in the fifth order in frequency representing only 4.3% (3) of all cases, and was distributed in the lower extremities only. This is considered to be few number and is nearly similar to a previous study done in Al-Baha 10 years ago(12). Also, when we looked at the other studies from nearby areas, we found the frequency of the Malignant Melanoma to be far more common(15, 19). This low incidence of the Malignant Melanoma could be due to genetic predisposition of people living in this area, especially when we have the same result as a previous study done here which needs further evidence and genetic investigations.

Dermatofibrosarcoma protuberans is a rare skin tumour which can seen in any part of the body, in our study we saw only two cases which affect only the extremities (8). As well we found only two cases of metastatic carcinoma that affect the skin is seen in our study. This lower ranks of Dermatofibrosarcoma protuberans and metastatic carcinoma is comparable to other local reports(12).

In our study, the presenting symptoms are as follows. Eighty three percent (n=54) of skin cancer cases presented clinically as ulcer, this was followed by fungating tumour in 9.2% (n=6) of cases and only 7.5% (n=5) of patient came with skin nodule as a sole presenting symptom .This pattern of clinical feature could indicate the late presentation of patients with skin cancer. In most of the published data about skin cancer in Saudi Arabia, no similar pattern of clinical presentation has been described.

In addition to the clinical picture of the skin tumours, the diagnosis was mainly confirmed by skin biopsy. In the cases that are included in our study, 4 types of skin biopsies were used. The types of biopsy used include punctured biopsy in 31 cases, incisional biopsy in 24 patients, shaved biopsy in 12 patients, and excisional biopsy in 2 cases. The methods of skin biopsy are the same as described elsewhere(20)Despite that 24.6% of the cases of skin cancer seen in our study were managed with surgery, and 17.4% of the cases with chemotherapy, however, most of the cases (58%) were referred to other specialized centres out of Al-Baha. This indicates the need for an advanced centre for management of skin cancer in the area.

V. Conclusion

In conclusion, skin cancer in Al-Baha area is still a common problem. The most common skin cancer is Basal cell carcinoma followed by SCC and then others. Malignant melanoma revealed to be a rare tumour, being the 5th in order like other places, but still is similar to the skin cancer pattern in Saudi Arabia. The other striking results are a decrease of reported cases of skin cancer observed together with delayed hospital presentation. These results will put pressure on the health authorities to establish a well-equipped centre for skin cancers.

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