

## **Clinical and histopathologic characteristics of skin malignancies in Qassim Region, Saudi Arabia**

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### **Abstract:**

**Background and objective:** The present study was undertaken to assess the pattern of skin malignancies in Qassim region, Kingdom of Saudi Arabia.

**Methods:** Data of histopathological confirmed cases of skin malignancies were collected from all the referral hospitals of Qassim region during a period from January 2000 to July 2009.

**Results:** Out of 94 cases majority (90.4%) were Saudis, and males (74.5%). The most common malignant skin lesion was BCC (58.5%) followed by SCC (18.1%) and MM (11.7%), respectively. Other malignancies seen were DFSP (4.3%), sebaceous carcinoma (2.1%) and skin secondaries from lung, lymphoma and stomach (4.3%). The most common site was face for BCC, trunk for SCC, and limbs for MM. The DFSP did not show any particular pattern.

**Conclusion:** All major types of skin malignancies were seen with patterns similar to those reported from various other regions of Saudi Arabia and other countries except for Kaposi's sarcoma which was not encountered in our study.

**Keywords:** Saudi Arabia, Skin Malignancies, Qassim Region.

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## Introduction

The incidence of skin malignancies is continuing to increase worldwide. The rate of incidence is reportedly highest in lighter skinned persons and is much rarer in darker skinned individuals. Caucasians have been reported to be most commonly affected. <sup>(1)</sup> Considerable geographical and racial variations have been reported, with very high incidence in some countries. <sup>(2, 3)</sup> Australians and New Zealanders have recored the world's highest incidence of skin cancer, followed by white population of southern regions of the United States. <sup>(4, 5)</sup> Erdei and Torres have provided an exhaustive review of the impact of gender, ethnicity and geography on the progression of melanomatous skin cancers. <sup>(6)</sup>

Such information on Asian population is limited. Studies from Saudi Arabia; however, indicate skin cancer to be the fourth leading form of cancer among males. <sup>(7, 8)</sup> In Asir province of Saudi Arabia, skin cancer has been reported to be the most common malignancy in both the genders. <sup>(9)</sup>

Malignant skin tumours have been broadly divided into two groups-Malignant Melanoma Skin Cancers (MMSC) and Non-Melanoma Skin Cancers (NMSC). NMSC can further be of two types-Squamous cell carcinoma (SCC) and Basal cell carcinoma (BCC). <sup>(10, 11)</sup> BCC, also known as rodent ulcer, is the most common skin malignancy, mostly found on face. SCC is less common but is more aggressive than BCC. Majority of SCCs are found on parts of the body other than face. <sup>(12)</sup> MMSC is the least common of the three skin malignancies but most aggressive. Other infrequently found skin cancers are Dermatofibroma Protuberans (DFSP), Sebaceous carcinoma and Kaposi's sarcoma.

The aim of this work is to study the pattern of skin malignancies in Qassim, a centrally located region in the Kingdom of Saudi Arabia, and to compare these results with those from other parts of the world.

## Materials and Methods

This is a multicenter retrospective study of patients with skin malignancies admitted to all referral Hospitals in Qassim region. All histopathologically documented cases of skin malignancy during a period from January 2000 to July 2009 were included in the study. Relevant clinical and histopathological data

were gathered from the hospital records. The frequencies of various histological types of skin malignancies were calculated and the tumors from various body sites were ranked based on their percentage frequency. The results were compared with the data available on the subject.

Ethical approval was obtained from Qassim University Medical School Ethical Committee as well as the referring hospitals local committees.

## Statistical Analysis

Statistical analysis was done using the SPSS software package version 13. Statistical test used for analysis of data included descriptive items as frequency, mean, median and standard deviation. Comparison of cases with regard to gender and site of tumor origin was carried out using Chi Square test ( $\chi^2$ ) considering p value significant at a level <0.05.

## Results

A total of 94 patients including 89 (94.7%) primary and 5 (5.3%) secondary malignant skin lesions were collected. Mean age of the patients was 59±20 years with a median of 62.5 years. Seventy (74.5%) patients were males. Majority (87), were Saudi nationals. Three patients were Egyptians and one each from Sudan, India, Pakistan and Bangladesh (Table 1).

Table (1). Demographic data including tumor characteristics

Clinical and Pathology data	Frequency	Percent
<b>Ages (years)</b>		
Mean ± SD	59+20	
Median	62.5	
Range	13-105	
<b>M/F</b>	70/24	74.5/25.5
<b>Saudi/ Non Saudi</b>	85/9	90.4/9.6
<b>Primary/Secondary</b>	89/5	94.7/5.3
<b>Head &amp; Neck</b>	58	61.7
<b>Extremities</b>	19	20.2
<b>Trunk</b>	17	18.1
<b>BCC</b>	55	58.5
<b>SCC</b>	17	18.1
<b>MM</b>	11	11.7
<b>DFSP</b>	4	4.3
<b>Secondary Lymphoma</b>	3	3.2
<b>Sebaceous Carcinoma</b>	2	2.1
<b>Secondary Cancer Lung (Small cell carcinoma)</b>	1	1.1
<b>Secondary Cancer Stomach (Adenocarcinoma)</b>	1	1.1
<b>Total</b>	<b>94</b>	<b>100.0</b>

BCC was the most common NMSC affecting 55 (58.5%) cases. SCC was reported among 17 (18.1%) cases and was the second commonest primary skin malignancy. MM was reported in 11 (11.7%) cases. DFSP and Sebaceous carcinoma were other primary skin malignancies reported in 4 (4.3%) and 2 (2.1%) cases, respectively. Secondaries in the skin were reported in 5 (5.3%) cases. These included 3 (3.2%) cases of Lymphoma, and 1 (1.1%) case each of secondaries from Carcinoma of stomach and lung. The most frequent site of primary skin cancer was in the head and neck region recorded in 58 (61.7%) cases, followed by extremities and trunk in 19 (20.2%) and 17 (18.1%) cases, respectively.

Comparison between cases with tumors arising from the head and neck regions versus other body areas are shown in **Table 2**. All the secondaries were limited to extremities and trunk, and no case of secondaries was seen in the head and neck region. The most common cancer encountered in head and neck region was BCC (86.2%), followed by SCC (10.3%). Also seen in head and neck region were MM and Sebaceous carcinoma, one (1.1%) case each. All types of skin malignancies were found in the extremities and trunk. SCC was the most common (30.6%), followed by MM (27.8%) and BCC (13.9%). DFSP was seen in 4 (11.1%) cases over extremities and trunk.

**Table 2. Comparison cases with tumors arising in the head and neck region vs. other body areas.**

	Head and neck n=58	Ext. and trunk n=36	Total
<b>Gender</b>			
Females	17 (29.3%)	7 (19.4%)	24 (25.5%)
Males	41 (70.7%)	29 (80.6%)	70 (74.5%)
<b>Primary vs. secondary</b>			
Primary	58 (100.0%)	31 (86.1%)	89 (94.7%)
Secondary	0 (.0%)	5 (13.9%)	5 (5.3%)
<b>Pathology**</b>			
BCC	50 (86.2%)	5 (13.9%)	55 (58.5%)
SCC	6 (10.3%)	11 (30.6%)	17 (18.1%)
MM	1 (1.7%)	10 (27.8%)	11 (11.7%)
DFSP	0 (.0%)	4 (11.1%)	4 (4.3%)
Secondary Lymphoma	0 (.0%)	3 (8.3%)	3 (3.2%)
Sebaceous Carcinoma	1 (1.7%)	1 (2.8%)	2 (2.1%)
Secondary Cancer Lung (small cell)	0 (.0%)	1 (2.8%)	1 (1.1%)
Secondary Cancer Stomach (Adenocarcinoma)	0 (.0%)	1 (2.8%)	1 (1.1%)

**Table 3** shows a comparison between the two genders, with regards to types and location of skin tumors. The head and neck was observed to be favoured site in both the genders but compared to males, female predominantly suffered from tumors in the head and neck region (70.8% vs 58.6%). Ranking of various histological types of malignancies was similar in both the genders, except for MM which was more commonly seen in males. Similarly, sebaceous carcinoma was limited to males only. Frequency of skin secondaries was 5.7% in males and 4.2% in females.

**Table 3. Comparing femal vs male cases with skin tumors regarding site and character of the tumor.**

	Females n=24	Males n=70	Total
<b>Primary vs. Secondary</b>			
Primary	23 (95.8%)	66 (94.3%)	89 (94.7%)
Secondary	1 (4.2%)	4 (5.7%)	5 (5.3%)
<b>Site</b>			
Extremities	3 (12.5%)	16 (22.9%)	19 (20.2%)
Head & Neck	17 (70.8%)	41 (58.6%)	58 (61.7%)
Trunk	4 (16.7%)	13 (18.6%)	17 (18.1%)
<b>Pathology</b>			
BCC	16 (66.7%)	39 (55.7%)	55 (58.5%)
SCC	5 (20.8%)	12 (17.1%)	17 (18.1%)
MM	1 (4.2%)	10 (14.3%)	11 (11.7%)
DFSP	1 (4.2%)	3 (4.3%)	4 (4.3%)
Secondary Lymphoma	1 (4.2%)	2 (2.9%)	3 (3.2%)
Sebaceous Carcinoma	0 (.0%)	2 (2.9%)	2 (2.1%)
Secondary Cancer Lung (small cell)	0 (.0%)	1 (1.4%)	1 (1.1%)
Secondary Cancer Stomach (Adenocarcinoma)	0 (.0%)	1 (1.4%)	1 (1.1%)

## Discussion

In the present study, based on a fairly large number of cases over an extended period of time, the mean age of presentation of cases with skin malignancies in Qassim region was 59 years. In a previous study of 74 patients at two referral hospitals in Jeddah, Saudi Arabia the reported mean age was 53 years. <sup>(13)</sup>

The most common type of skin malignancy in our study was BCC. Similar patterns have been reported in studies carried out in other regions of Saudi Arabia and neighboring countries like Qatar and Jordan. Only one study on 137 patients from Asir region of Saudi Arabia has described SCC to be more common than the BCC. Many studies from the western countries have also ranked BCC to be the commonest skin tumour. <sup>(14-20)</sup> No case of Kaposi's sarcoma was seen during the study. This could be attributed to the low HIV infections in this region. Association of Kaposi's sarcoma and HIV is well documented. <sup>(21)</sup> One patient had Marjolin's ulcer with a history of corrosive burn ulcer on leg for twelve years.

The distribution of BCC over the body was mainly limited to the head and neck region, in 86.2% of the cases. SCC, the second most frequent skin malignancy in our study, was predominantly seen to affect extremities and trunk (30.6%). Head and neck was involved in only 10.3% of cases. These findings also seem comparable to previous studies.

Metastasis to the skin from internal carcinoma was of rare occurrence with a frequency of 0.7 to 9%. Malignancies known to metastasize to skin are carcinoma of breast, lung, kidneys, colon and some other solid tumours. <sup>(22)</sup> The frequency of secondaries to the skin in our study was 5.38%. Two patients had metastases from stomach and lung, respectively, while three patients had primary lymphoma with axillary and cervical lymph node involvement.

Cutaneous involvement in lymphoma is usually T cell type but B cell type is also seen. Concurrent lymphadenopathy and systematic symptoms may be seen in B cell type. Two of the three patients in our study were B cell type. One patient showed T cell Lymphoma with subcutaneous panniculitis like features <sup>(23)</sup> At the time of presentation, the location of primary tumour was not known in this patient. The other two patients presented with axillary and cervical lymphadenopathy.

To conclude, all major types of skin malignancies were seen with patterns similar to those reported from various regions of Saudi Arabia and other countries except for Kaposi's sarcoma which was not encountered in our study.

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