

## Clinicopathological Analysis of Malignant Eyelid Tumours in north-west Pakistan

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### Abstract

**Objective:** To analyse the demography, mode of presentation, gross morphology, histopathological diagnosis and subsequent course of malignant eyelid tumours in north-west Pakistan.

**Methods:** The retrospective observational study was performed at the Department of Ophthalmology, Khyber Teaching Hospital, Peshawar, from January 2007 to July 2010, and comprised data related to 222 patients. Charts of patients with malignant eyelid tumours admitted to the department during study period were reviewed. Patients' demographic data, gross and microscopic features of the tumours and their subsequent course of treatments were recorded. SPSS 14 was used for statistical analysis.

**Results:** Of the total, 122 (54.1%) patients were male and 102 (45.9%) were female. Mean age of all patients was  $59.3 \pm 14.2$  years. Among the patients, 73 (32.9%) had the involvement of the lower lid; 57 (25.7%) the upper lid; 18 (8.11%) the medial canthus; 2 (0.9%) the lateral canthus; and 72 (32.4%) had more than one region involved. On histopathology, basal cell carcinoma was the most common ( $n=131$ ; 59%), followed by squamous cell carcinoma in 70 (31.5%), sebaceous gland carcinoma in 15 (6.8%), malignant melanoma in 3 (1.3%) and undifferentiated carcinoma in 3 (1.3%) cases. Of the total tumours, 164 (73.87%) did not spread, and 58 (26.13%) spread either locally or distantly.

**Conclusion:** Basal cell carcinoma was the most common malignant eyelid tumour in the study. Squamous cell carcinoma, which was second, was found to be more common in north-west Pakistan than in any other part of Asia, while the sebaceous gland carcinoma was relatively less common.

**Keywords:** Malignancy, Eyelid tumour, BCC, SGC, SCC. (JPMA 63: 25; 2013)

### Introduction

A large variety of benign and malignant tumours can arise from eyelids. Malignant eyelid tumours are common in northern areas of Pakistan.<sup>1</sup> Among all malignant tumours of the eye and ocular adnexa, eyelids are the most common localisation (about 42.6%).<sup>2</sup> Gross appearance of different types of malignant eyelid tumours may be similar, but their clinical course and outcome is totally different. For example, basal cell carcinoma (BCC) is capable of extensive tissue destruction, but rarely metastasise.<sup>3</sup> Squamous cell carcinoma (SCC) is more aggressive and invasive and if treatment is delayed, it can invade the orbital and intracranial structures. Hence, it has a considerable potential of mortality and morbidity.<sup>4</sup> The prognosis of sebaceous gland carcinoma (SGC) is considered poorer than most other malignant eyelid tumours with a mortality second only to malignant melanoma (MM).<sup>5,6</sup> Although incidence of eyelid malignancies is increasing,<sup>7-11</sup> their global distribution is varied.

The aim of our study was to analyse the demography, mode of presentation, gross and histopathological diagnosis and subsequent course of malignant eyelid tumours in north-west Pakistan. This data will not only help in proper management of eyelid malignancies, but

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also be useful in assessing the requirements of oculoplastic unit of the hospital and would aid in future healthcare provision.

### Patients and Methods

The retrospective observational study was performed at the Department of Ophthalmology, Khyber Teaching Hospital, Peshawar, which is a tertiary care referral centre. We reviewed the records of patients with eye lid tumours admitted to our unit from January 2007 to July 2010. Patients' demographic data, site, size, shape, histological type and spread of tumour in each case were recorded on a preset proforma. Only biopsy-proven primary malignant eyelid tumours were included in the study.

Data collected was analysed using SPSS 14. Independent samples T-Test was applied to compare mean ages of males and females. Cross-tabs were formed to find out the relationship between different variables.

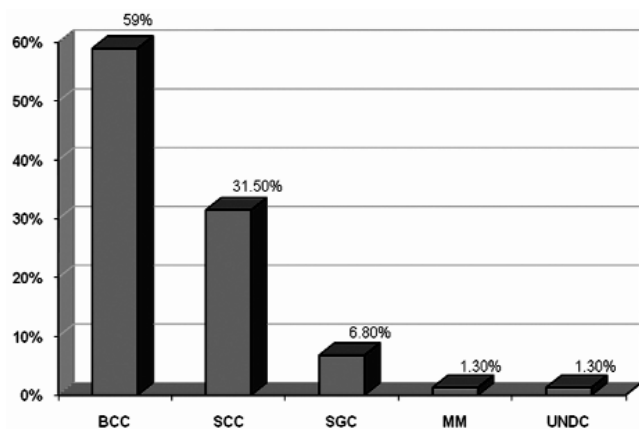
### Results

Of the 222 patients, 120 (54.1%) were male and 102 (45.9%) female. The mean age was  $59.3 \pm 14.2$  years ranging from 20 to 100 years. Median age of presentation for all tumours was 60 years, except MM for which it was 70. Mean ages of males and females were  $60.7 \pm 13.7$  and  $57.5 \pm 14.6$  years respectively. There was no statistically significant difference between the mean age of male and

Table-1: Local and distant spread of various eyelid malignancies.

Spread	BCC	SCC	SGC	MM	UNDC	Total
No spread	117	34	10	2	1	164
Spread to eye ball	7	15	0	0	2	24
Spread to preauricular LN	0	3	0	0	0	3
Spread to Submandibular LN	0	0	1	0	0	1
Spread of multiple areas	7	18	4	1	0	30
Total	131	70	15	3	3	222

BCC: Basal cell carcinoma. SCC: Squamous cell carcinoma. SGC: Sebaceous gland carcinoma. MM: Malignant melanoma. UNDC: Undifferentiated carcinoma. LN: Lymph node.



**BCC: Basal Cell Carcinoma. SCC: Squamous Cell Carcinoma. SGC: Sebaceous Gland Carcinoma. MM: Malignant Melanoma. UNDC: Undifferentiated Carcinoma.**

Figure: Prevalence of different types malignant eyelid tumours.

female patients ( $p < 0.90$ ). Maximum patients ( $n=95$ ; 42.8%) were farmers (almost all males); 28 (12.6%) were labourers, 92 (41.4%) were house wives; and 7 (3.2%) had other occupations. The mean duration between lesion appearance and consultation was  $37.8 \pm 39$  months. It was  $44.98 \pm 45.48$  months,  $26.00 \pm 24.05$  months,  $20.4 \pm 12.37$  months and  $80 \pm 34.64$  months for BCC, SCC, SGC and MM respectively.

Regarding the site of tumours, 73 (32.9%) involved the lower lid, 57 (25.7%) the upper lid, 18 (8.11%) the medial canthus, 2 (0.9%) the lateral canthus, and 72 (32.4%)

Table-2: Comparative figures of different studies in Asia.

Tumor	Present Study	Southern Pakistan <sup>15</sup>	Nepal Study <sup>1</sup>	Singapore Study <sup>17</sup>	Indian Study <sup>18</sup>	Japan Study <sup>19</sup>	Taiwan Study <sup>20</sup>
BCC	59%	56.32%	59.4%	84%	38.8%	39.5%	65.1%
SCC	31.5%	20.69%	15.6%	3.4%	22.4%	10.5%	12.6%
SGC	6.8%	14.94%	0.0%	10.2%	27.1%	28.9%	7.9%
MM	1.3%	-	15.6%	1.2%	3.5%	7.9%	-
Others	-	18%	10%	-	-	13.2%	-

BCC: Basal Cell Carcinoma. SCC: Squamous Cell Carcinoma. SGC: Sebaceous Gland Carcinoma. MM: Malignant Melanoma.

involved more than one region.

In gross morphology, 146 (65.8%) tumours were nodulo-ulcerative, 24 (10.8%) nodular, 23 (10.4%) ulcerative, one (0.5%) morphea form, and 28 (12.6%) were irregular. The mean horizontal size of tumours was  $1.82 \pm 1.35$  cm and mean vertical size was  $1.89 \pm 1.5$  cm.

Considering final histopathological diagnosis, BCC was the most common ( $n=131$ ; 59%). This was followed by SCC in 70 (31.5%), SGC in 15 (6.8%), malignant melanoma (MM) in 3 (1.3%) and undifferentiated carcinoma in 3 (1.3%) cases (Figure).

Of the total 222 tumours, 164 (73.87%) did not spread, while 58 (26.13%) spread either locally or distantly (Table-1).

## Discussion

Among malignant eyelid tumours BCC, SCC and SGC were the most common. The median age of presentation for the three types was 60 years, while that for MM was 70 years. A study in India observed that the age of subjects was statistically significantly different across the types of malignancy, with BCC ( $63.5 \pm 3.82$  years), SGC ( $55.1 \pm 3.15$  years) and SCC representing the youngest age group ( $41.5 \pm 9.13$  years).<sup>12</sup>

The mean duration of time since appearance of the lesion and presentation was 37.8 months. This is quite a long duration in which tumour grows to a significant size and the chances of spread increase. In a Turkish study, the corresponding value was 13.5 months,<sup>13</sup> while in an Indian study it was 7.2 months for SGC.<sup>12</sup> In our culture this delay in presentation may be due to self-neglect in old age, socio-economic problems and lack of proper referral system.

Regarding the site of involvement, our case series was identical with other studies<sup>13,14</sup> that showed the involvement of lower lid, medial canthus, upper lid and lateral canthus in order of frequency, except that 32.4% lesions were found to have involved more than one of the above sites at the time of diagnosis. Again it is due to delayed presentation when lesion becomes so large as to spread to the surrounding areas.

Most tumours (65.8%) in our series presented as nodulo-ulcerative lesions. We did not find any relationship between gross morphology and histological type of eyelid malignancies.

In our study BCC was the most common tumour (59%), followed by SCC (31.5%) and SGC (6.8%). In a study from southern Pakistan, the frequency of BCC, SCC and SGC was 56.32%, 20.69% and 14.94% respectively.<sup>15</sup> This shows that SGC is less and SCC is more common in north-west Pakistan.

In a study from Nepal, BCC was the commonest, accounting for 59.4%. This was followed by SCC in 15.6% and melanoma in 15.6%.<sup>16</sup> A study from Singapore reported the frequency of different eyelid cancers over a 27-year period as follows: BCC 84%, SGC 10.2%, SCC 3.4% and MM 1.2%.<sup>17</sup> In a study from India over a 34-year period, BCC was found to be present in 38.8%, SGC in 27.1%, SCC in 22.4% and MM in 3.5%.<sup>7</sup> Cumulative results of 26 studies from Japan (1976-2004) mentioned BCC to be 39.5%, SCC 21.8%, SGC 27.0%.<sup>18</sup> A comparison of studies from different countries of Asia is interesting in this regard (Table-2).

Looking into comparative figures of different studies in Asia, it is observed that frequency of BCC is almost equal in north-west Pakistan, southern Pakistan, Taiwan<sup>19</sup> and Nepal; more than in India and Japan; and less than in Singapore. One interesting finding that our study reveals is that after BCC, SCC is more common in north-west Pakistan than in any other part of Asia. Moreover, the frequency of SGC is relatively less here than other regions of Asia except Nepal.

## Conclusion

Basal cell carcinoma was the most common malignant eyelid tumour in north-west Pakistan, followed by squamous cell carcinoma. In contrast, the sebaceous gland carcinoma was the least common in the study population.

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