

Incidence Of Adnexal Tumors In A Tertiary Care Hospital: A Study Of 118 Asian Pakistani Patients

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Abstract:

Objective: To evaluate the frequencies of various ocular malignancies in a tertiary care hospital.

Methodology: This multi-centered retrospective study was conducted at Armed Forces Institute of Ophthalmology (AFIO) and Armed Forces Institute of Pathology (AFIP) over a period of 3 months. A total of n=118 subjects with ocular malignancies were included in this study. The data was collected and analyzed with the help of Armed Forces Institute of Pathology. Subjects who presented to AFIO from 2018 – 2022 were included. The record was collected from record room of AFIO and AFIP and was analyzed. Initially incisional biopsy was performed to confirm the diagnosis followed by excisional biopsy with frozen section. Reconstruction was done on same day after histopathological proven biopsy results.

Results: A total of n=118 subjects with eyelid lesions were included. 88 (74.5%) were males, while 30 (25.4%) were females. 66% were benign in origin while 34% were malignant. Out of 34% of malignant tumors, Basal Cell Carcinoma were 67%, Squamous Cell Carcinoma were 23% and Squamous Gland Carcinoma were 9% while 1% were miscellaneous (i.e. hemangiopericytoma).

Conclusion: In Pakistani Asians, BCC was almost 3 times more common than SCC and SGC. This incidence can further be reduced by adapting preventive measures like avoiding sunlight exposure and adapting good life style. *Al-Shifa Journal of Ophthalmology 2022; 18(3): 118-123*. © Al-Shifa Trust Eye Hospital, Rawalpindi, Pakistan.

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Introduction:

Worldwide the most common eyelid tumor is basal cell carcinoma, with incidence rate of 80-95% of eyelid malignancies.¹⁻⁵ Incidence of Squamous cell carcinoma occurs approximately <5 %, sebaceous gland carcinoma 1%, malignant melanoma 1% while rest of other tumors (miscellaneous) accounts for about 1%.⁶ In a literature one of the study conducted in Europe concluded that most of the eyelid tumors in European population was suffering from basal cell carcinoma (86%), SCC 7%, SCG 3% and miscellaneous were 4%. Similarly, USA study also confirmed almost same ratio of incidence of eyelid tumors i-e BCC 82-91%, SCC 2-9%, SGC 6% and miscellaneous 9% of cases.^{1,2,3}

The eyelid serves as the anterior protective part of the orbit. Upper eyelid consists of two lamella i-e Anterior and posterior while

lower eyelid consists of three lamella i.e anterior, middle and posterior. Histologically, seven structures have been noticed in eyelids, i.e., skin, loose connective tissue, orbicularis oculi (muscle), loose connective tissue, tarsal plate anteriorly and orbital septum posteriorly, retractors of eyelid (levator palabrae superioris and mullers muscle) and the palpaberal conjunctiva.^{4,5,6}

Malignancies can arise from any part of the eyelid but mostly they are of cutaneous origin. Specific considerations have been given to eyelid malignancies due to their functional and aesthetic outcomes after surgery.⁷

In planning the management of eyelid tumors, specific tumor, nodes and metastasis (TNM) classification is being done. A T-staging comprises of whether a tarsal plate or septum is being invaded or not by the tumor as these structures are clinically not visible and requires imaging techniques. An imaging techniques are routinely performed to rule out deep invasion and intraorbital extension.

Similarly, before reconstruction tumor free margins are to be confirmed by histopathologist either by frozen section or by Moh's procedure, to reduce or prevent the recurrence rate.⁸⁻¹⁰

To the best of our knowledge, no frozen section study is being conducted in our hospital. In our study, we will discuss the incidence of histopathological proven eyelid malignancies.

Patients and Methods:

This multi-centered retrospective study was carried out at Armed forces institute of Ophthalmology in collaboration with Armed forces institute of Pathology after approval from hospital ethical review committee (ERC # 304/ERC/AFIO).

Both male and female having adnexal malignancies after confirmation with histopathology report from AFIP were included in this study. All the benign and

malignant tumors of orbit were excluded from the study.

After consent from patient, the subject underwent complete history and examination along with imaging (i.e CT scan) to rule out intraorbital extension. Histopathologist is informed a day before surgery for the preparation of frozen section procedure. The excisional biopsy was performed followed by frozen section with the help of histopathology department (AFIP).The tissue was sent in a Jar/ bottle to AFIP, which was free of any preservative material (formalin or Alcohol/ Ethanol). The tissue was prepared with the help of frozen section and slides were made. Examination was done under microscope. After the confirmation of tumor free margin by histopathologist and diagnosis of tumor (benign or malignant), reconstruction of adnexa was performed. Approximately 02 hours are required in whole process. Later on, patients were referred to radiation oncologist for further necessary management. The data from 2018-2022 was analyzed from the record room of AFIO and AFIP. SPSS version 22.0 was used for statistical analysis.

Results:

A total of N=118 patients with adnexal lesions, over a period of six years were analyzed. Out of which eighty eight (74.5%) were males and thirty were females (25.4%). The mean age was 60.18 ± 6.7 years. Out of 118 patients, 78 were benign (66.1%), while 40 (34%) were malignant (Table). Out of 40 malignant tumors, 27 were BCC (67%)[Fig-2], 9 SCC (23%), 3 were SGC (9 %) and 1 had miscellaneous tumors (1%)[Fig-1].

Table 1: Results of Incidence of Eyelid Lesions

Variables	Frequency
Age (Mean) in years (N)	60.18 ± 6.7
Gender	
Male	88 (74.5%)
Female	30 (25.4%)
Tumors	
-Benign	78(66%)
-Malignant	40(34%)
-BCC	27(67%)
-SCC	9 (23%)
-SGC	3 (9%)
-Miscellaneous	1 (1%)



FIG 1: Right Upper Eyelid Growth Growth (BCC)



FIG 2: Right medial Canthal Growth

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-SGC	3 (9%)
-Miscellaneous	1 (1%)

Discussion:

It is already mentioned in literature about the incidence of adnexal lesions worldwide and its frequencies whether benign or malignant. In the present study we have also mentioned worldwide incidence of eyelid lesions and compared it with our results.

BCC is still the most commonly occurring adnexal tumors in the west. This is in lieu with our study. While in most of the Asian countries like Japan, Nepal and India, SGC is the most common eyelid tumor.^{11, 12} Whereas in our study BCC was 67% and SGC was 9%.

Ahmed et al, in their study followed the frozen section protocol for the diagnosis and management of ocular tumors.^{4,11} This is in lieu to our study as we also did frozen section biopsies for the diagnosis of eyelid lesions. Whereas, Mainstein et al, did not follow frozen section biopsy protocol for the diagnosis of clinically small lesions and they only did biopsies for recurrent tumors. This is in contrast to our study, as we used frozen section technique on all cases. In contrast to other Asian studies, which shows SGC as the most commonly occurring tumors in Asians, our study did not correlate with other studies.^{13, 14}

One of the US based study shows, occurrence of SGC was 2.03 per 1000,000 cases in whites as compared to Asians, which shows 1.07 cases per 1000,000 of population.^{14,15,16} This is in contrast to our study, which shows 9% of cases of SGC among the malignant tumors.

In literature review, studies conducted in China shows Lacrimal gland as a commonest tumor while another study in Netherland and Florida shows Lymphoma as most common site for tumors origin.^{17,18,19} These are in contrast to our study.

Our study statistics shows that 66% of eyelid lesions were benign and 34% were malignant in adults. Among malignant tumors of our study, BCC were 67%, SCC

were 23%, SGC were 9% while 1% were miscellaneous tumors.

The studies from literature also shows the significant rise of childhood tumors.²⁰ But we did not include any such condition in our study.

This incidence of eyelid lesions was noticed among adults only. However, pediatric age group should also be evaluated for reducing the risk and preventing them from these life threatening malignancies.

Limitations of Study:

We did not include eyes with orbital tumors and metastatic tumors of orbit. Moreover, pediatric tumors were also not included in this study. The incidence of conjunctiva, choroid and retina tumors were also not included in this study. Additional data from different hospitals of Pakistan could be helpful in calculating the incidence of various adnexal tumors.

Conclusion:

All the eyelid margin lesions need to be evaluated with biopsy, to reduce the incidence of malignancy and prevent the recurrence rate further as basal cell carcinoma still remains the most commonly occurring eyelid tumor in Pakistani population followed by squamous cell carcinoma and sebaceous gland carcinoma.

Conflict of interest:

Authors show no conflict of interest.

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