

# Profile of Eyelid Tumours at a Tertiary Eye Care Hospital in North India - A 3 Year Retrospective Study

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## ABSTRACT

### BACKGROUND

Eyelid tumours are commonly seen in daily ophthalmology practice. They constitute 5 - 10% of all skin tumours. The present retrospective study was undertaken to analyse the demographic profile, clinical presentation, and histopathological diagnosis of eyelid lesions over a 3-year period in a tertiary care centre, by retrieving the hospital-based data of the patients.

### METHODS

A retrospective data of patients, who had undergone surgical management for eyelid tumours at Regional Institute of Ophthalmology and a histopathological analysis from Jan 2017 to Dec 2019 at our tertiary care hospital in North India, was done. The data collected included patients' demography, location of tumour, laterality, whether benign or malignant, and the final histopathological diagnosis.

### RESULTS

A total of 109 biopsies were reviewed during the 3-year retrospective period. There were 90 benign lesions and 19 malignant tumours. Overall, the most common age group was 11 - 20 years followed by 41 - 50 years. Benign lesions were seen most commonly in the age group of 11 - 20 years (mean age= 34.1 years); whereas, malignant lesions were more commonly seen equally in the age groups of 51 - 60 and 61 - 70 years (mean age= 61.42 years). The study did not show any sex preponderance. Out of the total, 49 lesions were seen in upper lid and 50 lesions were present in lower lid. The most common benign lesions seen were epidermal cysts (17.4%), dermoid cysts (14.6 %), and naevi (10.1%). Other benign lesions included sebaceous cysts, molluscum contagiosum, xanthelasma, conjunctival inclusion cysts, capillary haemangioma, papilloma, lacrimal gland ductal cysts, angiofibroma, pyogenic granuloma, seborrheic keratosis, cysticercosis, sebaceous adenoma, melanocytoma, pilomatrixoma, chondroid syringoma, syringocystadenoma papilliferum, clear cell fibroadenoma and trichoepithelioma. Out of the total 19 malignant lesions, basal cell carcinoma was the most common (7.3%) followed by sebaceous gland carcinoma (6.4%) and squamous cell carcinoma (3.6%).

### CONCLUSIONS

Eyelid lesions, just like other skin tumours, vary in their morphological characteristics and clinical presentations. All surgically excised eyelid lesions must be subjected to histopathological examination to differentiate between benign and malignant tumours to provide a definitive diagnosis for better long-term management of patients. Awareness and understanding of various eyelid lesions, especially the uncommon ones, helps an ophthalmologist in treating such patients.

### KEYWORDS

Eyelid Lesions, Benign, Malignant, Tumours.

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**BACKGROUND**

Eyelid tumours are the most common neoplasms in daily ophthalmology practice. Eyelid tumours represent 15% of face tumours and about 5-10% of skin tumours.<sup>1</sup> As the eyelid contains many tissue types including epithelial, vascular, adnexal, histiocytic, neural and melanocytic origin, a wide variety of benign and malignant tumours can develop, sometimes mimicking common inflammatory conditions. Histopathology remains the main stay of diagnosis in lid growths.<sup>2,3</sup> In addition to determining the malignant potential of the lesion, histology reveals its exact nature and structure. Any lid mass, whether it is small or big, remains a matter of concern for the patient. Besides being cosmetically unacceptable and posing a negative psychosocial impact, it also affects quality of life of the patient. Large extensive tumours lead to anatomical and functional disruption of lid tissue. Lid reconstruction in such cases becomes a challenge for oculoplastic surgeon. Though malignant tumours are rarer than benign tumours, but they are important cause morbidity and mortality. General data on the relative frequency of benign and malignant eyelid tumours are available from only a limited number of biopsy series. The relative frequency of the various tumour subtypes not only depends on the geographic location and genetic background of the population surveyed but also on its socioeconomical status and access to medical care.<sup>4,5</sup> In spite of being common in India, there is not much literature available in Indian scenario. The present study was undertaken to analyse the histopathological diagnosis of eyelid lesions by retrieving the hospital-based data of the patients. The aim of this study was to provide ophthalmologists and pathologists with recent data on the relative frequency of the various eyelid skin tumours, to contribute to the literature information regarding different eyelid lesions and tumours received in our tertiary care setup.

**METHODS**

This study is an institute based retrospective observational study. Retrospective analysis of data of patients who had undergone surgical management for eyelid tumours/ mass lesions at Regional Institute of Ophthalmology, and histopathological analysis in Pathology department from Jan 2017 to Dec 2019 at our tertiary care hospital in North India, was done. Data regarding age, gender, location of tumour, laterality, whether benign or malignant and final histopathological diagnosis of eyelid lesions were collected from the oculoplasty files of the patients in our department. All of these patients had been examined thoroughly in our OPD and the clinical details had been entered in their respective oculoplasty files. Slit lamp and indirect ophthalmoscope were used for examination of the anterior and posterior segments of the eyes.

The lesions were examined in ambient room lighting. All the cases were photographed, and photographic record was maintained digitally. All benign tumours were managed by

surgical excision of the lesion. In cases that were suspected to be malignant or recurrent tumours, management included surgical excision of the lesion large enough to obtain tumour-free margins, confirmed by histologic examination. Furthermore, in these cases, systemic investigations and oncology consultation were requested in order to rule out regional or distant metastasis. In the pathology department, all the cases were processed by formalin fixation, paraffin embedding and Haematoxylin and Eosin staining. Special histochemical stains were done in necessary cases. Only cases with histopathological confirmed diagnosis were included. Slides of available cases were retrieved and reviewed. The lesions were classified into benign lesions and malignant tumours. The data were then subjected to descriptive statistical tabulation and analysis. Data were presented as frequencies and mean ± Standard Deviation (SD). Unpaired t test was used to test the significance of difference in the types of the tumour with age. Chi Square test was used to test the significance of difference in the types of tumour in context to gender, eye and eyelid involvement.

**RESULTS**

A total of 109 biopsies during the 3-year period were reviewed retrospectively. Among a total of 109 cases, 90 (82.5%) were benign growths and 19 (17.4%) cases were proved to be malignant on histopathological evaluation. Patients presenting with eyelid lesions ranged in age from 1 year to 91 years, the most common age group was 11-20 years followed by 41-50 years and 61-70 years (Figure-1). The mean age of the cohort was 38.9 years. Eyelid lesions were significantly rare after 80 years of age. Benign lesions were seen most commonly in the age group of 11-20 years (mean age = 34.1 years), whereas malignant lesions were more commonly seen equally in the age groups of 51-60 and 61-70 years (mean age = 61.42 years). The difference in mean age of presentation in the two groups (benign and malignant) was significant (p-value <0.05) (Table-1).

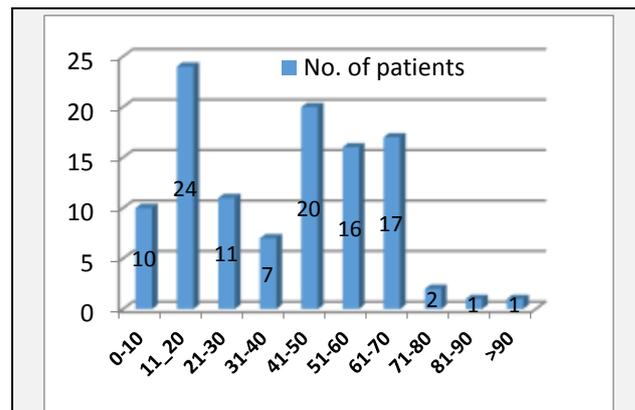


Figure 1. Age-Wise Distribution of Patients

Variables	Numbers	Mean Age (Years)	Standard deviation	P-Value
Malignant	19	61.42	12.141	p<0.05
Benign	90	34.11	15.387	
<b>Total</b>	<b>109</b>	<b>38.90</b>	<b>16.243</b>	

Table 1. Mean Age of Patients in the Two Groups

Gender	Malignant	Benign	Total No. of Patients	P-Value
Male	10	47	57	p> 0.05
Female	9	43	52	
<b>Total</b>	<b>19</b>	<b>90</b>	<b>109</b>	

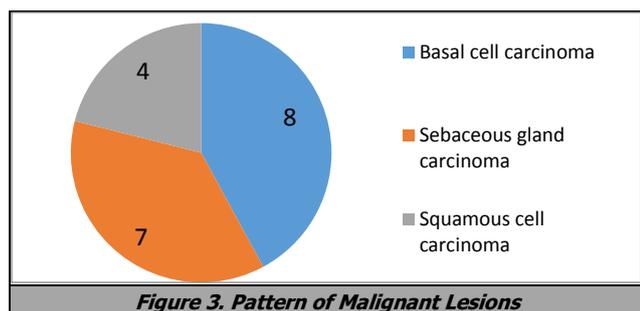
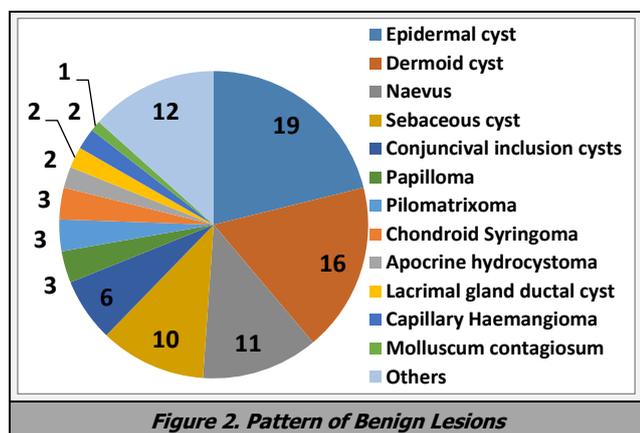
**Table 2. Gender Wise Distribution of Cases**

Variables	Malignant	Benign	Total No. of Patients	P-Value
Right	11	34	45	p>0.05
Left	8	53	61	
Bilateral	0	3	3	
<b>Total</b>	<b>19</b>	<b>90</b>	<b>109</b>	

**Table 3. Type of Tumour in Context of Eye Involvement**

Variables	Malignant	Benign	Total No. of Patients	P-Value
Upper eyelid	6	44	50	p>0.05
Lower eyelid	11	38	49	
Medial canthus	1	7	8	
Lateral canthus	1	1	2	
<b>Total</b>	<b>19</b>	<b>90</b>	<b>109</b>	

**Table 4. Type of Tumour in the Context of Part of Eye Involvement**



There was no significant sex preponderance in the distribution of eyelid lesions. 57 (52.3%) patients were males and 52 (47.7%) were females (male to female ratio = 1.09:1). In benign lesions group, out of 90 cases, 47 (52.2%) were males and 43(47.7%) were females. In malignant lesions group, out of 19 cases, 10 (52.6%) cases were males and 9 (47.3%) were females (Table-2).

The right eye was involved in 44 (40.3%) patients whereas left eye involvement was seen in 62 (56.8%) patients. Bilateral involvement was seen in 3 (2.7%) patients and all these 3 patients had benign lesions bilaterally. The difference between the two groups was not significant (p>0.05) (Table-3).

Out of 109 patients, 50 (45.8%) cases had lesion in upper eyelid, 49 (44.9%) cases had involvement of lower eyelid, 8(7.3%) patients had involvement of medial canthus and 2 (1.8%) patients had the lesion on lateral canthus. In benign lesion group, 44 (48.8%) patients had lesion in upper lid, 38 (42.2%) in lower lid, 7 (7.7%) in medial canthus and 1 (1.1%) in lateral canthus. In malignant lesion group, 6 (31.5%) patients had lesion in upper lid, 11 (57.8%) in lower lid, 1 (5.2%) in medial canthus and 1 (5.2%) in lateral canthus. The difference between the two groups was not significant (p>0.05) (Table-4).

The most common benign lesion was epidermal cyst (19 cases), followed by dermoid cyst (16 cases) and naevus (intradermal=5, compound=6). Other benign lesions included sebaceous cysts (10 cases), conjunctival inclusion cysts (6 cases), capillary haemangioma (2 cases), papilloma (3 cases), molluscum contagiosum (1 case), xanthelasma (1 case) and lacrimal gland ductal cysts (2 cases). One case each of angiofibroma, pyogenic granuloma, seborrheic keratosis, cysticercosis, sebaceous adenoma, melanocytoma and suppurative abscess was seen. Rare cases included pilomatrixoma (3 cases), chondroid syringoma (3 cases) and 1 case each of syringocystadenoma papilliferum, clear cell fibroadenoma and trichoepithelioma. 3 cases of skin adnexal tumour were seen (one case of eccrine poroma and 2 cases of apocrine hydrocystoma) (Figure-2).

Among the 19 malignant eyelid tumours, basal cell carcinoma (BCC) was seen in 8 patients, sebaceous gland carcinoma (SGC) in 7 patients and squamous cell carcinoma (SCC) in 4 patients (Figure-3).

**DISCUSSION**

Eye lid tumours, besides affecting cosmetic appearance of face and disrupting functional anatomy of eyelid, are important cause of morbidity and mortality. The risk factors for eyelid tumours include exposure to ultra-violet rays, fair skin colour, genetic make-up of a person, smoking, occupational environment, etc.<sup>1</sup> Thus, the incidence and type of lid tumours varies remarkably among different races and geographic regions. We compared our data with other studies done in India and across the world. On reviewing the literature, it is evident that malignant tumours are less common than benign lesions. In our study, 82.5% lesions were benign growths and 17.4% were malignant tumours. In a study by Chang et al in Southern Taiwan, 12.5% cases

were reported to be histologically malignant tumours.<sup>6</sup> Pornpanich et al reported 17.8% cases of inflammatory conditions, 71.4% cases of benign eyelid tumours and 10.8% cases of malignant eyelid tumours.<sup>7</sup> In an Indian study by Rathod et al, 100 cases of lid tumours were analysed retrospectively. Out of 100 cases, 61 cases were benign and 39 were malignant tumours.<sup>8</sup>

In the present study, the benign lesions were commonly seen in younger individuals whereas malignant tumours were common in the older age group. The mean age of presentation of benign tumours was 34.11 years and malignant tumour was 61.42 years. This finding is in consistence with other similar studies which support the fact that with age, the risk of malignant tumour of eyelids increases. Wang et al reported 127 cases of malignant eyelid tumours with the mean age of presentation of 62.6 years.<sup>9</sup> In another study by Ramya et al, the common age group of malignant tumours was 51-60 years.<sup>10</sup> Rathod et al found the mean age of presentation of benign tumours as 37.02 years and malignant tumour as 58.59 years respectively.<sup>10</sup>

In our study, the benign lesions were more commonly seen in upper eyelid followed by lower eyelid, medial canthus and lateral canthus. On the other hand, malignant tumours were seen more commonly on lower eyelid (57.8% of all malignant tumour cases) followed by upper eyelid, medial canthus and lateral canthus. Similar finding was seen in a study by Pornpanich et al, where benign tumours were seen mostly in upper lid (51.4%) and malignant tumours in lower lid (50%) followed by upper lid (40%), medial and lateral canthus. Kale et al studied 85 consecutive cases of eyelid malignancies who reported to their hospital and found that the most common location of the tumour was lower lid (58.2%) for all the malignancies.<sup>11</sup>

The most common benign lesion in our study was epidermal cyst (19 cases, 17.4%) and most common benign tumour was naevus (11 cases, 10.1%) (compound naevus= 6, intradermal naevus = 5). In a similar study from Western India by Jangir et al, the most common benign tumour included epidermal cyst (21.3%), dermoid cyst (13.89%), intradermal naevus (12.03%) and haemangioma (12.03%).<sup>12</sup> Similar finding was reported by Mohan et al.<sup>13</sup> In their study, the most common non-neoplastic lesion was epidermal cyst (14.3%) followed by parasitic granuloma (9.2%), chalazion and dermoid cyst (5.6% each) and nevus was the commonest benign eyelid tumour (13.7%) followed by squamous papilloma (9.2%), seborrhoeic keratosis and capillary haemangioma (3.9% each). Rathod et al<sup>8</sup> studied only eyelid tumours and did not include non-neoplastic lesions. They found naevus (25%) (intradermal more common than compound naevus) as most common benign lid tumour. In a study from Taiwan, Chang et al<sup>6</sup> reported 38% cases of naevus being the most common amongst benign lid tumours. The benign tumours also included 15 squamous papillomas, 13 cysts, 11 verrucae, 10 seborrhoeic keratoses, four haemangiomas, and others.<sup>6</sup> Al Faky et al<sup>14</sup> (Saudi Arabia) and Kersten et al<sup>15</sup> (USA) reported epidermal cyst as most common benign lesion with incidence of 9% and 22.2%, respectively. We report three types of malignant tumours in our study. Basal cell carcinoma (BCC) (7.3%) was found to be slightly more common than sebaceous gland

carcinoma (SGC) (6.4%). Squamous cell carcinoma (SCC) (3.6%) being the least common. Rathod et al<sup>8</sup> reported equal incidence of BCC and SGC, 16% each. Ramya et al,<sup>10</sup> found SGC (41.4%) as most common malignant tumour of lid in their study population. On reviewing the worldwide literature, it is seen that the frequency of SGC is more in Asian countries, approximately 25–30% in China and India.<sup>6,9,11,12</sup> In countries like USA and worldwide also where population of whites is more, BCC is encountered more commonly.<sup>4,15,16</sup> Cook et al reported 90.8% cases of all malignant lid tumours as BCC.<sup>4</sup> These findings suggest that occurrence of BCC is related to chronic and cumulative solar damage to skin and therefore it is more common in fairly pigmented people and less common in blacks. This study highlights the clinical, demographic and histopathological profile of lid lesions in patients reporting to our tertiary eye care centre in North India over a period of three years. Histopathology plays an important role in sensitising the ophthalmologists in diagnosing, especially, the rare eyelid lesions, accurately and thus helps in timely management of patients and better long-term prognosis.

## CONCLUSIONS

Eyelid lesions, just like other skin tumours, vary in their morphological characteristics, and clinical presentations. Awareness and understanding of various eyelid lesions, especially the uncommon ones, helps an ophthalmologist in treating such patients.

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