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## Original Research Article

## A clinicopathological study of eyelid tumors at a tertiary care hospital in South India

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## ABSTRACT

**Introduction:** Eyelid tumors are common in people of all age groups representing more than 90% of ophthalmic tumors. Usually majority of these cases are either inflammatory or non-malignant tumors, however many malignancies can mimic a host of benign neoplasms and need differentiation before definitive therapy is started.

**Aim and Objective:** To analyze clinical presentation, types of eyelid tumors, its histopathological correlation and management.

**Materials and Methods:** A prospective study was conducted on patients presenting with eyelid tumors to our tertiary care hospital for duration of 2 years. Patients with eyelid tumors who fulfilled the inclusion criteria were diagnosed clinically and treated accordingly and all tumors were subjected to histopathological examination. The cases were analyzed for their age and sex distribution, incidence of malignant and benign tumors, tumor location and type.

**Result:** In our study involving 50 patients, 29 were females and 21 were males, 47 cases were benign and 3 were malignant. Mean age of presentation of benign tumors was 44.81 years and malignant tumors was 67.25 years. Upper lid involvement was seen in 38 cases and lower lid in 12 cases. Intradermal nevus and epidermal cyst were the most common benign lesions and Sebaceous gland carcinoma was the most common malignant lesion.

**Conclusion:** Histopathological examination of all excised eyelid tumors is essential, as they may be malignant and require definitive treatment for better long-term management of the patient.

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## 1. Introduction

An eyelid tumor leads to functional problems and cosmetic problems of the eyelid. The prevalence and distribution of eyelid tumors have considerable variation. Eyelid tumors are common in people of both sexes and all age groups representing more than 90% of ophthalmic tumors.<sup>1</sup> Most of the tumors are diagnosed clinically and treatment depends on the site, extent of spread and invasiveness of the tumor.

Usually majority of these cases are either inflammatory or non-malignant tumors, however many malignancies can mimic benign neoplasms and need differentiation before definitive therapy is started.<sup>2</sup> We should have a high suspicion when the lid tumor is slowly enlarging, associated with loss of eyelashes, prominent blood vessels, pigmentation and ulceration.<sup>3</sup> Histopathology remains the confirmatory and mainstay of diagnosis in cases of eyelid tumors.<sup>4,5</sup>

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## 2. Materials and Methods

The present study was a prospective study conducted on patients who presented with eyelid tumors to the Department of Ophthalmology, McGann District Teaching hospital, Shimoga from November 2022 to October 2024. 50 cases were included in the study, including both benign and malignant eyelid tumors.

### 2.1. Inclusion criteria

1. Patients who presented with primary tumors of eyelid.
2. Patients who were willing to undergo surgery.
3. Patients who were willing to come for follow up.

### 2.2. Exclusion criteria

1. Patients having lid swelling secondary to infectious lesion like sty, molluscum contagiosum, chalazion and pyogenic granuloma were excluded.
2. Patients with previously resected eyelid tumors.

After taking Informed consent from the patients, all the patients were subjected to detailed general and ocular history taking and examination. Tumours were diagnosed clinically and treatment was planned according to the nature of the lesion. Benign lid tumours were treated by surgical excision of the tumour. Eyelid tumors in lid margins were excised by shave excision and cystic eyelid lesions were excised in toto and sent for histopathological examination. Clinically suspected malignant lid tumours were treated with wide local excision and lid reconstruction after histopathological examination for margin clearance. Wide local excision of 4 mm clear margin from the clinically palpable extent of lid tumour was done in pentagonal shape. In cases with defects less than 30%, direct suturing of the lid with or without canthotomy/cantholysis was done. In cases with defects 30-60%, lid was reconstructed by Tenzels semicircular flap technique. In cases with defects more than 60% lid reconstruction was done with mucous membrane graft from nasal septum/periosteal reflected flap for posterior lamellae and sliding skin flap for anterior lamellar reconstruction (Chart 1). For confirmation of diagnosis, all excised specimens were sent for histopathological examination. Patients were on regular follow up to look for any recurrences.

The cases were analyzed for their age group distribution, sex distribution, incidence of malignant and benign tumors, tumor location, tumor type distribution and complications at the time of presentation.

## 3. Results

In our study involving 50 patients with eyelid tumors, mean age of presentation of benign eyelid tumors was 44.81 years and mean age of presentation of malignant eyelid

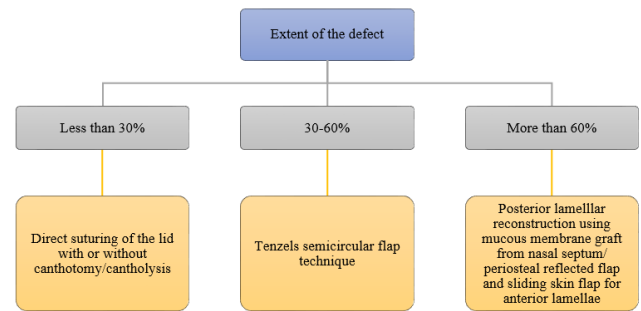


Chart 1: Algorithm for lid reconstruction

tumors was 67.25 years. (Table 1) shows age distribution of patients.

**Table 1:** Age distribution of patients with lid tumors

Age group	Type of tumor		Total No. of cases
	Benign	Malignant	
11-20	1	-	1
21-30	7	-	7
31-40	12	-	12
41-50	9	-	9
51-60	9	1	10
61-70	7	1	8
71-80	2	1	3
Total	47	3	50

Among all cases 29 were females and 21 were males. Both benign and malignant lid tumors were more commonly seen in females. (Table 2) shows sex distribution of patients.

**Table 2:** Sex distribution of patients with lid tumors

Sex	No. of patients	Percentage
Male	21	42%
Female	29	58%
Total	50	100%

Among 50 cases of eyelid tumors 47 cases were benign and 3 cases were malignant. (Table 3) shows distribution of cases according to type of lesion.

**Table 3:** Distribution of cases according to type of lesion

Type of lesion	No. of cases	Percentage
Benign	47	94%
Malignant	3	6%
Total	50	100%

Among all cases of eyelid tumors, upper lid involvement was seen in 38 cases and lower lid involvement was seen in 12 cases. Benign tumors were more commonly seen involving upper eyelid. (Table 4) shows distribution of eyelid tumors based on their location.

Intradermal nevus (Figure 1) was the most common benign tumor seen with 15 cases followed by epidermal

**Table 4:** Distribution of eyelid tumors based on their location

Tumor location	Benign	Malignant	Total cases	Percentage
Upper lid	37	1	38	76%
Lower lid	10	2	12	24%

cyst (Figure 2) seen in 13 cases. Eccrine hidrocystoma, seborrheic keratosis (Figure 3), papilloma, cyst of moll, fibroepithelial polyp, keratinous cyst, eccrine spiradenoma (Figure 4), hemangioma, pilomatrixoma and schwannoma were the other benign eyelid tumors seen. (Table 5) shows incidence of benign tumors.



**Figure 1:** Intradermal nevus at the lid margin of left upper lid



**Figure 2:** Epidermal cyst of left upper lid

All the 3 malignant tumors seen were sebaceous gland carcinoma. Among the three sebaceous gland carcinoma two were females involving lower eyelid and one was male involving the upper eyelid (Figures 5, 6 and 7).



**Figure 3:** Seborrheic keratosis of left upper lid (pigmented, giant pendulous appearance)



**Figure 4:** Eccrine spiradenoma of left upper lid with pigmentation, ulceration, loss of eyelashes and lobulated appearance. (Clinically was diagnosed as malignant lesion)

**Table 5:** Incidence of benign tumors

Type	Number	%
Cyst of moll	2	4.25
Eccrine hidrocystoma	3	6.38
Eccrine spiradenoma	1	2.12
Epidermal cyst	13	27.65
Fibroepithelial polyp	2	4.25
Hemangioma	1	2.12
Intradermal nevus	15	31.92
Keratinous cyst	2	4.25
Papilloma	3	6.38
Pilomatrixoma	1	2.12
Schwannoma	1	2.12
Seborrheic keratosis	3	6.38
Total	47	100





**Figure 5:** Case 1 Preop - Sebaceous gland carcinoma of right lower lid with loss of eyelashes and ulceration and postop following lid reconstruction with mucus membrane graft from nasal septum for posterior lamellae and sliding skin flap for anterior lamellar reconstruction.



**Figure 6:** Case 2 Preop - Sebaceous gland carcinoma of right lower lid with loss of eyelashes and ulceration and postop following lid reconstruction by Tenzel's semicircular flap technique.



**Figure 7:** Case 3 Preop Sebaceous gland carcinoma of left upper lid with hemorrhagic crust at the tip of swelling and loss of eyelashes and postop following lid reconstruction with Tenzel's semicircular flap technique.

#### 4. Discussion

Eyelid tumors, in addition to impacting the cosmetic appearance of the face and disturbing the normal structure and function of the eyelid, are significant contributors to both morbidity and mortality. Based on literature review, it is conclusive that malignant tumors are less common than benign lesions. In our study, 94% lesions were benign growths and 6% were malignant tumors, consistent with studies by Deswal et al.<sup>6</sup> and Karan S et al.<sup>2</sup> In another study conducted by Krishnamurthy et al. in Karnataka 91.9% of cases were benign and 8.1% cases were malignant eyelid tumors.<sup>7</sup>

The mean age of presentation of benign tumors was 44.81 years and malignant tumor was 67.25 years, similar to Mary Ho et al.<sup>8</sup> Rathod et al. reported 100 cases of eyelid tumors where mean age of presentation of benign tumors was  $37.02 \pm 16.84$  years and malignant eyelid tumors was  $58.59 \pm 11.27$  years.<sup>1</sup> Hence, this supports the fact that with increasing age, the risk of malignant tumor of eyelids increases.

In our study, both benign and malignant lesions were more common in females, with male to female ratio of 1:1.3 as same as study by Bhavya P Mohan and Letha V.<sup>9</sup> In present study the benign lesions were more commonly seen in upper eyelid and on the other hand, malignant tumors were seen more commonly on lower eyelid consistent with Deswal et al. study.<sup>6</sup>

Most common benign eyelid tumors seen in our study was intradermal nevus with 15 cases (31.9%) followed by epidermal cyst with 13 cases (27.6%). In a study by Rathod et al. intradermal nevus was the most common benign lesion with 27.8%.<sup>(1)</sup> In Nithithanaphat C et al. study intradermal nevus was the most common benign lid tumor.<sup>10</sup> In Krishnamurthy et al. study done in Karnataka epidermal cyst was the most common eyelid tumor followed by nevi.<sup>7</sup> Rare benign eyelid tumors seen in our study were eccrine spiradenoma and schwannoma.

Eccrine spiradenoma is a rare benign sweat gland tumor, usually presents as solitary, intradermal and painful nodule, occasionally it presents with lobulated appearance. Histologically tumor comprising lobules of various sizes in the corium with basophilia confined to dermis is seen.<sup>11,12</sup> Schwannoma is a rare benign tumor of peripheral nerve origin. It usually presents as slowly enlarging, solitary, painless mass. Histologically tumor comprising fusiform cells arranged in intertwined bundles where the nuclei is fusiform and form palisades is seen.<sup>13</sup> In both eccrine spiradenoma and schwannoma, incomplete removal is associated with eventual recurrence and aggressive behaviour.

Among malignant eyelid tumors in our study, all three of them were sebaceous gland carcinoma. Karan et al. Mohan BP et al. and Krishnamurthy H et al. studies also show sebaceous gland carcinoma as the most common malignant eyelid lesion similar to our study.<sup>2,7,9</sup> Though the most common malignant tumor of the eyelid worldwide is basal cell carcinoma, sebaceous gland carcinoma is more common in Asian countries with an increasing trend.<sup>14–16</sup>

Among all the cases, one case of benign eyelid tumor presented with complications like pigmentation, ulceration over the swelling with loss of eyelashes at time of presentation, hence it was clinically diagnosed and treated as malignant lid tumor but histopathology of excised specimen revealed it to be eccrine spiradenoma (Figure 4). Among all three malignant lid tumors, two of them presented with ulceration and loss of eyelashes at the time

of presentation and the third case presented with loss of eyelashes and hemorrhage from the lid tumor at the time of presentation, hence all of them were diagnosed as malignant lid tumor clinically.

During follow-up period, a case of sebaceous gland carcinoma (case 2) developed pyogenic granuloma at the site of excision, after duration of around 5 weeks, which subsided after treatment with topical medication. Rest of the cases of eyelid tumors did not have any postoperative complications. One case of epidermal cyst presented with recurrence of swelling at the same site after a duration of around one year.

## 5. Conclusion

Intradermal nevus and epidermal cyst are the most common benign eyelid tumors and Sebaceous gland carcinoma is the most common malignant eyelid tumor. Histopathological examination of all excised eyelid tumors is essential, as they may be malignant and require definitive treatment for better long-term management of the patient. Eyelid tumor that show secondary changes such as pigmentation, ulceration, loss of eyelashes, or bleeding should be treated as early as possible with wide local excision, as the likelihood of malignancy is significantly high in such cases. Having knowledge and insight of various eyelid lesions, particularly rare ones, enhances the ability to provide better patient care.

## 6. Limitations

Limitations of this study were small sample size and difficulty in follow up.

## 7. Ethical Committee Approval

Taken. SIMS/IEC/883.

## 8. Consent

Prior to the study, informed consent was obtained from all participants. They were fully briefed on the study details, with a clear assurance that their personal information would remain confidential and that any photos taken during the study would be used in a way that will not reveal their identity. Participants who voluntarily agreed to participate, understanding these terms were included in the study.

## 9. Conflict of interest

None.

## 10. Source of funding

None.

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