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Original Research Article

Diagnostic dilemmas in diagnosing various eyelid tumors

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Abstract

Introduction: Eyelid tumors are common causes of morbidity and frequent causes of recurrent hospital visits in developing countries. Although through clinical evaluation clinches the diagnosis in most of the cases, Histopathological evaluation still plays an important role for confirmation and treatment.
Aim and Objective: To analyze the demographic profile and frequency of eyelid tumors; comparison between clinical its histopathological diagnosis at the tertiary care hospital in western part of West Bengal.
Materials and Methods: Retrospective analysis of eyelid tumors which were operated from Feb 2022 to Aug 2022 (6 months) were analysed. Data was collected on age, gender, type of tumour and histopathological diagnosis.
Results: A total of 95 patients were evaluated, of all 43 (42.2%) were male 52 (54.7%) were female. Most presented between the age group of 25 to 55 years of age. Patients with infective pathology constituted 28.4% of cases, non-infective inflammatory 38.9% cases, 18.9% had benign pathology, 5.2% had malignant pathology. HPE report of 35 (36.84%), patients were collected who were clinically suspicious or there was uncertainty about diagnosis, 85.7% samples correlated with provisional or pretreatment diagnosis.
Conclusion: High degree of suspicion, timely intervention and histopathological confirmation is crucial for management of eyelid tumors in a tertiary care centre which lacks separate oculoplasty set up. Explaining proper follow up is mandatory to detect recurrence. In our set up benign lesions like rhinosporidiosis, and all malignant lesions were explained the need of future follow up after intervention.

Keywords: Eyelid mass, Histopathological analysis, Management of eyelid mass

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1. Introduction

Eyelid and peri ocular skin diseases represent as a variety of lesions all around the globe involving all age group and races. Though lid masses are common in daily clinical practice, they are usually not vision threatening but warrants full treatment. Pathological entities of lid masses may range from infective, inflammatory, benign, malignancy and in rare condition can be metastatic too.[1] Apart from infection, genetic and topographical factors may play significant roles. Thorough history taking, meticulous clinical examination followed by excision- biopsy of appropriate cases can clinch proper diagnosis.[2-7]

2. Aim and Objective

2.1. Primary objective

To analyze the demographic profile and frequency of eyelid tumors.

2.2. Secondary objective

Comparison between clinical its histopathological evaluation (HPE) for proper diagnosis.

3. Materials and Methods

3.1. Study population

All patients with eyelid mass attending outpatient department of Ophthalmology in a tertiary care hospital over a period of

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6 months. We were able to included total of 95 patients in this study group over a period of 6 months. Patients included in the study were those who consented to undergo ocular examination with primary investigations and standard treatment care. It was a cross sectional observational, single centric study.

3.2. Study technique

After obtaining approval from the Institutional Review Board, a cross–sectional study was conducted in which retrospective data of patients from Feb, 2022 to August, 2022 who had undergone surgical management for eyelid tumour at the Department of Ophthalmology. Study was done in collaboration with department of Pathology for histopathological confirmation.

Parameters assessed included demographics of patients, history of trauma and history of tumours in other parts of the body. A thorough clinical examination of the lesion regarding its location, shape, size, border, margin, skin overlying lesion, eyelashes, ulceration, induration and mobility over the underlying surface was done. The anterior and posterior segment examination of both eyes was done by slit lamp and direct and indirect ophthalmoscope.

After obtaining routine investigations like complete blood cell counts, fasting blood sugar, bleeding time, clotting time and urine sugar and albumin, the patients were posted for surgery as per protocol. Radiological investigations for assessment of extent of lesion were obtained where ever indicated. Patients were briefed about surgery and written consent was taken for surgical procedure.

Clinically diagnosed malignant tumour was excised with 3 mm clear margins followed by reconstructive lid surgery. Histopathological examination of specimen was done to obtain a definitive diagnosis.

Ophthalmological parameters to be studied were routine eye examination, visual acuity with illuminated Snellen's chart, applanation tonometry, direct Ophthalmoscopy, fundus examination, clinical picture, histopathological evaluation

3.3. Inclusion criteria

Those patients with unilateral or bilateral lid mass, willing for informed consent procedure

3.4. Exclusion criteria

Past h/o lid surgery, trauma, chemical or thermal injury

After detailed history and examination a pre-treatment clinical diagnosis or provisional diagnosis was made. Patient was treated surgically following standard operating protocol, procedure was noted. Sample was sent for histopathological analysis. Reports were collected for in suspected cases rule out early malignancies and dilemma even in benign diseases. Patients were followed for minimum of 6 months. Faculties Pathology department also kept a register for correlation of provisional diagnosis and histopathological diagnosis, they informed in case of any disparity.

3.5. Plan for analysis of data

All data was recorded in SPSS software for various analysis.

3.6. Ethical considerations

The study proposal along with other relevant documents would be submitted to institutional ethics committee (IEC) for review and approval. The study is done in accordance with the ethical standards of the responsible committee on human experimentation (institutional) and with the Helsinki Declaration of 1975.

4. Results

We recruited 95 patients, 43 males and 52 females. There was no sex predilection. Most of the patients presented in 25 to 55 age group (50 or 52.6% patients) followed by 5 to 25 years (35 or 36.8% patients) then more than 55 years (10 or 10.5% patients) (**Table 1**).

Patients with infective pathology constituted 28.4% of cases, non-infective inflammatory 38.9% cases, 18.9% had benign pathology, 5.2% had malignant pathology. Different causes were enlisted in **Figure 2**. Histopathological correlation with different pathologies with pretreatment clinical diagnosis was depicted in **Table 2**.

We had 15 cases of ocular rhinosporidiosis, age group ranged from 9 to 15years, 1 adult patient (**Figure 3**). All patients underwent total excision of lesion with base electro-cautery. Lesion predominantly originated from tarsal conjunctiva with secondary involvement of eyelid. None of the patients had any recurrence. All samples were sent for histopathological evaluation (HPE).

We had 12 cases of Molluscum contagiosum. These were predominantly found in children, multiple small skin-colored nodules with central umbilication. Physical removal with curettage attempted in few cases, most cases referred to dermatology. Many patients also required treatment of conjunctivitis. Patients with multiple lesions, immunocompromised diseases were sent for histopathological evaluation (HPE) (3/12 samples or 25% of cases).

Non infective inflammatory lesions were most common in this study. We had 12 cases of pyogenic granuloma in children (**Figure 4**). It is a misnomer, acquired vascular pathology. All cases were treated with total excision. 50% of samples were sent for HPE as history was inconclusive in most or in many cases diagnosis was confirmed on HPE only.

Chalazion was most disease encountered in this study (25 cases or 26.3%). Recurrent chalazion ($\geq$ 3 episodes) patients were sent for histopathological evaluation (HPE) (5/25 or 20% cases). It presented in all age group, lipo-

granulomatous inflammation which was evident in 4 cases. In 1 case it was diagnosed as sebaceous cell carcinoma.

Freckles are small brownish skin spots over sun exposed areas like eyelid with hyperpigmentation of the basal cell layer on HPE. We had 5 such cases. Other benign lesions were sebaceous cyst with keratinization (**Figure 5**), seborrheic keratosis. We had 2 dermoid cyst and 5 naevus involving eyelid. These lesions were all sent for HPE except nevus. Only 40 % cases of nevus were sent for HPE where history of sudden pain or progression or change of color was there, in rest of cases diagnosis was based on clinical evaluation alone.

Table 1: Distribution of patients by age and sex

Sex	Number of cases	5-25 yrs.	26-55 Yrs.	>56 yrs.
Male	43	16	20	07
Female	52	19	30	03
Total	95	35 (36.8%)	50 (52.6%)	10 (10.5%)

Table 2: Causes of eyelid mass

Causes	No	Total
Infective		
1. Rhinosporidiosis	15	
2. Molluscum	12	27 (28.4)
Non infective inflammatory		
1. Pyogenic	12	37 (38.9)
2. Chalazion	25	
Benign		
1. Freckles	5	
2. Sebaceous cyst	5	
3. Seborrhoic keratosis	1	18 (18.9)
4. Dermoid cyst	2	
5. Nevus	5	
Malignant		
1. BCC	4	5 (5.2)
2. SCC	1	

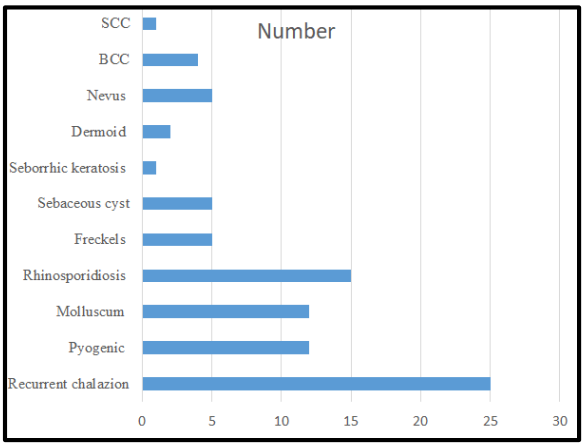

Figure 1: Number

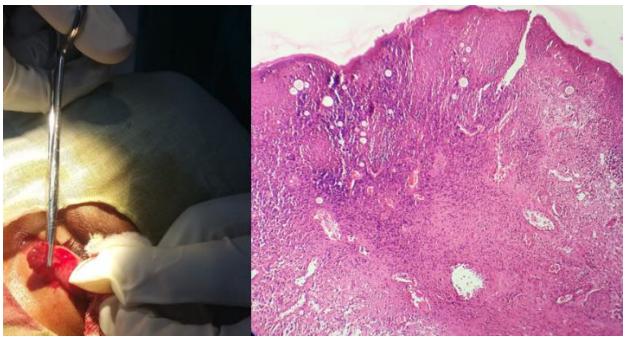

Figure 2: Clinical pic and histopathological evaluation (HPE) showing multiple sporangia

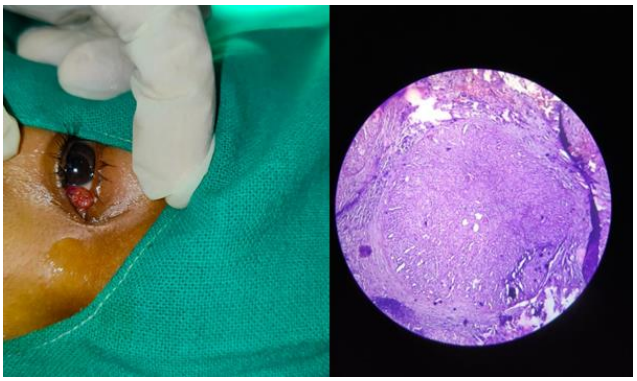

Figure 3: Clinical picture of pyogenic granuloma, HPE shows lobulated, well vascularized granulation tissue

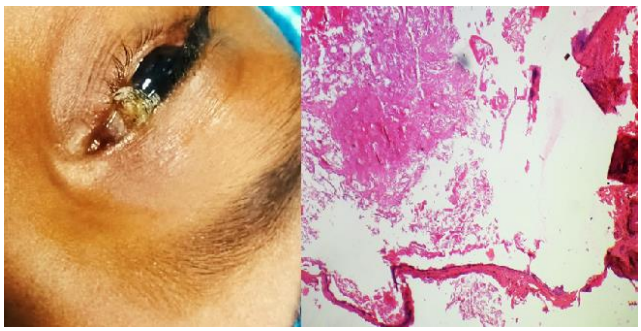

Figure 4: Clinical pic of sebaceous cyst with keratinization, HPE shows Cystic mass with keratin flakes

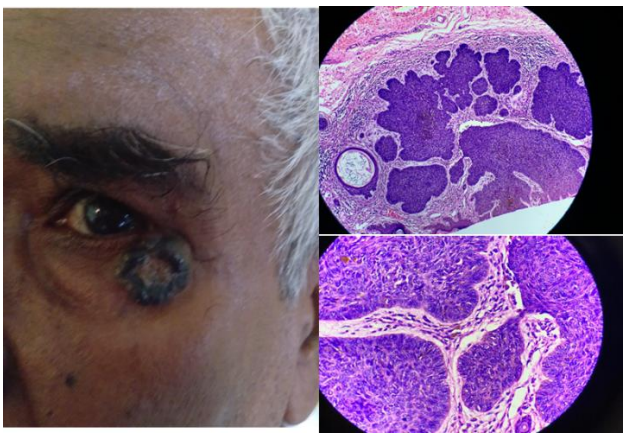

Figure 5: Clinical pic of basal cell carcinoma with Islands of basaloid cells, retraction artifact, peripheral palisading

Figure 6: Follow up image after treatment

5. Discussion

Various factors like ethnicity, geographic factors, exposure to sunlight, cumulative effect can influence the prevalence of various eyelid tumors. In our study, 95 cases were there, who were enrolled within 6 months. Patients with infective pathology constituted 28.4% of cases, non-infective inflammatory 38.9% cases, 18.9% had benign pathology, 5.2% had malignant pathology.

Similar study from Karnataka by Krishnamurthy et al found 91.9% cases were benign.[8] Xu et al did a study in Beijing and found 86.2% cases to be benign.[9] Various other studies also found benign lesions to be between 70 to 92%.[10-16] In most studies, they divided lesions between benign and malignant pathology. We have sub divided non-malignant lesions into three different categories, all combined constitutes 94.8% of cases. This finding is comparable to all previous studies. Our study resembled most studies which showed benign lesions outnumbered malignant lesions.

BCC is most common malignancy of eyelid worldwide and constitutes 85-90% of malignant epithelial eyelid tumor. It affects lower lid more commonly.[17] Squamous cell carcinoma is 40 times less common than BCC. It affects upper eyelid and lateral canthus more commonly than BCC. In a study done in Nepal, squamous cell carcinoma is found more commonly than in BCC.[18,19] Sebaceous gland carcinoma is third common type of carcinoma, arising from meibomian glands, in some cases glands of Zeiss, and the sebaceous glands of caruncle and eyebrow. It constitutes 15.5% of all eyelid tumors.[20] In a study based on Indian subcontinent, Sebaceous gland carcinoma (~37%) was found to be almost as common as BCC (~44%).[21]

In our study, we have found 1 case of squamous cell carcinoma and 4 cases of basal cell carcinoma. 3 cases were treated in our centre and 2 cases were referred. 1 case of BCC was treated with total excision with cutler beard surgery; another case had small defect, apposed by direct approximation. Pathological confirmation was as lesions in both showed island of basaloid cells with peripheral palisading.

1 case of squamous cell carcinoma was detected in upper eyelid, it was also small tumor, residual defect was corrected by direct approximation. Histopathological staining showed sheets of malignant squamous cells.

6. Conclusion

We have found predominantly benign lesions in our study (almost 95% cases), malignant cases were overtly outnumbered by benign lesions. Most of patients correlated with pre-treatment clinical diagnosis 85.7%. Histopathologic evaluation plays an important role to reach a confirmatory diagnosis and treatment. Early diagnosis is crucial for functional lid reconstruction.

7. Source of Funding

None.

8. Conflict of Interest

None.

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