



CLINICOPATHOLOGICAL SPECTRUM OF EYELID AND PERIORBITAL LESIONS WITH RARE ENTITIES

Pathology

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ABSTRACT

Introduction: Eyelid lesions are commonly encountered in histopathology practice and encompass a wide variety of neoplastic and non-neoplastic lesions. The present study was carried out to assess the value of routine histopathological examination of eyelid lesions. An attempt is made to review the histopathological spectrum of eyelid lesions over a period of 2years 6months. **Aims And Objectives:**To study the histomorphological spectrum of various eyelid lesions, determine their frequency, age and sex distribution in our study population and compare them with the other studies. **Material And Methods:** The study was carried out on excised eyelid and periorbital tissue received from Basawershwara teaching and general hospital and also from private hospital, in the department of pathology Mahadevappa Rampure Medical College during a period of 2years 6months from Jan 2021 to June 2023. Clinical data collected from records and histopathological examination of the excised specimens was conducted using standard processing technique. **Results:** A total of 35 eyelid and periorbital specimens were analysed among which 21 were males and were 14 females with M:F 1.5:1. The histopathological examination showed 22 cases of inflammatory lesions and 13 cases were benign lesion. Inflammatory lesions includes, Epidermal Inclusion cyst(20%), Chalazion(17.1%), Pyogenic Granuloma(11.4%), Fibroepithelial Polyp(11.4%), Dermoid cyst(2.8%). Benign lesions includes Intradermal Nevus(11.4%), Seborrheic keratosis(5.7%), Infantile Hemangioma(2.8%), Squamous papilloma(5.7%), Junctional Nevus(2.8%), Capillary Hemangioma(5.7%), and Lipoma(2.8%). **Conclusion:** Eyelid lesions are diverse and vary in clinical presentation and prognosis. The frequency of eyelid lesions depends upon age group, racial and geographic factors. All orbital lesions removed surgically should always be subjected to histopathological examination to establish accurate diagnosis for further management.

KEYWORDS

Eyelid, Periorbital, Epidermal cyst, Nevus, Histopathology

INTRODUCTION:

Eyelids are complex structures that protect the anterior surface of the globe and are the shields of human eye. When eyelids do not function properly, they can cause irritation to the eyes and lead to visual problems.¹ Eyelid lesions are common concerns amongst patients who presents to the ophthalmologists, dermatologists and general practitioners.² These lesions are numerous due to the presence of various tissue including skin, appendages, muscle, modified glands, and conjunctival mucous membrane in the eyelid. Varying lesions affecting the eyelids are encountered which can be divided into congenital, inflammatory, cystic, benign and malignant.¹

The incidence of eyelid lesions varies by genetic, age, gender, skin type and environmental factors such as sunlight and ultraviolet radiation.³ Each of the excised specimens should be examined histopathologically so as to give exact diagnosis and to enhance communication between ophthalmologist and pathologist to correlate it with patient's clinical history, improving patients care. Recognition and diagnosis of these problems are helpful for their proper management.

MATERIALS AND METHODS:

A study was carried out on all excised eyelid and periorbital specimen received in the department of Pathology at Mahadevappa Rampure Medical College and Basweshwar teaching and general hospital. A total of 35 excised specimens were received in the histopathology section during a period of 2 years 6 months from Jan 2021 to June 2023. Relevant clinical data was retrieved. Gross findings were noted. Specimens fixed in 10% formalin, routine tissue processing and paraffin embedding was done and 5 micrometre thickness sections obtained and stained with H & E were studied. The gross and microscopic findings were analysed and various histopathological diagnoses of the eyelid and periorbital lesions were done and for every case, clinical findings were correlated with histopathological diagnosis.

RESULTS:

Table 1: Age & sex distribution.

Age (years)	Males	Females	Total	Percentage(%)
1-9	02	01	03	8.6

10-19	03	03	06	17.4
20-29	03	03	06	17.4
30-39	03	02	05	14.3
40-49	05	02	07	20
50-59	03	02	05	14.3
60-69	02	02	04	11.4
Total	21	14	35	100.0

M:F ratio =1.5:1

A total 35 cases of the different eyelid and periorbital lesions were analysed. Age of patients ranged from 01yr to 69 years. The highest prevalence of these lesions were seen in the age group of 40-49 years in 7 cases(20%) followed by 10-19 years(17.4%) and 20-29 yrs (17.4%) respectively. Only a single case was reported in the age group of 1-9 yrs. Males were found more affected than females with M:F 1.5:1. Upper eyelid was commonly involved as compared to lower eyelid and periorbital lesion.

Most of the patients presented with gradually increasing, painless swelling over eyelids.

Table 2: : Spectrum of inflammatory lesions of Eyelid and periorbital region.

SL.NO	Histopathological findings	Total	Percentage
	Inflammatory		
1	Fibroepithelial Polyp.	04	11.4%
2	Chalazion.	06	17.1%
3	Pyogenic Granuloma.	04	11.4%
4	Dermoid cyst	01	2.8%
5	Epidermal Inclusion cyst.	07	20%
	Total	22	63%

Majority of the inflammatory lesions were of Epidermal Inclusion cyst (06 cases) followed by chalazion(6 cases). Also noted were 4 cases of fibroepithelial polyp and pyogenic granuloma.

Table 3: Spectrum of Benign lesions of Eyelid and periorbital

region.

	Benign	Total	Percentage
1	Nevusi)Intradermal Nevus. ii)Junctional Nevus.	04 01	11.4% 2.8%
2	Infantile Hemangioma.	01	2.8%
3	Capillary Hemangioma.	02	5.7%
4	Seborrheic keratosis.	02	5.7%
5	Lipoma.	01	2.8%
6	Squamous papilloma	02	5.7%
	Total	13	37%

The spectrum of various benign tumors noted. Among which nevus was the most common benign lesion(05 cases) followed by infantile hemangioma (2cases),seborrheic keratosis (2cases), squamous papilloma (2cases) and each cases of capillary hemangioma and lipoma.

DISCUSSION:

Eyelid lesions encountered in histopathology practice are most commonly non-neoplastic but can be neoplastic as well. Among neoplastic lesions, benign tumors are much more common⁴. Prevalence rate of non neoplastic and benign eyelid lesions vary according to the geographic location due to the differences in skin types, sunlight exposure and disease awareness.¹

In present study ,maximum number of patients (20%) who underwent excision biopsy belonged to the age group of 40-49years (Table-1), which correlated with the study done by Bhavya P.et al.⁴ Number of excision biopsy performed were more in males(60%)as compared to females(40%) with male to female ratio 1.5:1,which were consistent with findings by Vivek Naikl et al.,⁵ who studied 100 cases of retrospectively, in which (53%) were males and (47%) were females.⁷

In the present study we have divided the eyelid and periorbital lesions into Inflammatory and Benign lesions. In present study, clinically suspected inflammatory lesions were histologically correlated in 63% cases (Table-2).This findings were concordant with those of Garima Murlidhar Anandani et.al⁶ 39% cases, vivek naik et al⁵ 50% cases and nikhil kumar et al⁷ 47%cases respectively.(Table-4).

Epidermal inclusion cysts present as elevated, smooth and progressively growing cysts that arise from entrapment of epidermal tissue in the dermis. Rupture with release of keratin can cause an inflammatory foreign-body reaction.⁸ Among inflammatory lesions, epidermal inclusion cyst was the most common histopathological lesion was seen in 20% (Table-2) of patients.Similar findings were observed in study done by Sushma TA et al⁹ accounting for 20%¹¹.(Fig 1)

Chalazion/ localized lipogranulomatous inflammatory lesion presents as chronic, localized swelling of the eyelid and typically affects the meibomian glands or glands of Zeis.It usually occurs spontaneously due to noninfectious obstruction of sebaceous gland ducts⁸.Chalazion constituted the second most common lesion, seen in 17% cases. Vivek Naik et al⁵. in their study reported 12% cases of chalazion.⁹ Other lesions includes fibroepithelial polyp(Fig 2),pyogenic granuloma 04 cases each and single case dermoid cyst.(Table 2)(Fig 3)

Table 4: Comparative analysis of histopathology spectrum

Histopathological findings	Garima Murlidhar Anandani ⁶ (2018) N=230	Vivek Naik et al ⁵ (2019) N=100	Nikhilkumar et al ⁷ (2020) N=205	Present study N=35
Inflammatory	91(39%)	50(50%)	97(47.32%)	22(63%)
Benign	69(30%)	41(41%)	33(16.09%)	13(37%)

Benign lesions were found in 37 % of cases in present study(Table-3). Garima Murlidhar Anandani et.al⁶ found such benign lesions in 30 % of cases.In study done by **vivek naik** et al⁵, benign lesions were found in 41 % and 16% in Nikhil kumar et al⁷(Table-4)

In present study,commonest Benign lesion encountered were Nevus. Nevi represented commonest benign lesion accounting for 14%, showed a female predominance , more commonly found in the 3rd to 4th decade and in the upper eyelid. Incidence of intradermal nevi increases as age advances. Among Nevi ,11.4% cases were of intradermal nevus and 2.8% case of junctional nevus noted.(Fig 4 & 5) A study conducted by Bhavya P et al⁴ found 13.7% cases of nevus.

Seborrheic keratosis is an acquired benign condition affecting elderly

patients. Classically the lesions have a greasy and stuck-on appearance with varying degrees of pigmentation⁸.In present study, we found 5.7% cases of seborrheic keratosis which is correlated with the study conducted by vivek naik et al⁵,who found 3.9%.We also found 2 cases of squamous papilloma accounting for 5.7%. Study conducted by Rita poul et al¹⁰ also found 9.6% squamous papilloma.(Fig 6)

In present study,Infantile hemangioma, benign vascular tumor, presented as periorbital lesion near the lateral canthus of right eye, seen in 1 case and Capillary hemangioma in 2 cases accounting for 8.5%, in both cases lesion was seen on right upper eyelid on as purple raised lesion. Similar study done by Bhavya P et al⁴ showed 3.9% cases of capillary hemangioma. Lipoma was seen in 2.8 % cases which was consistent with study done by Rita Paul et al¹⁰ showed 1.9% cases.(Fig 7)

CONCLUSION:

Eyelid growth is a common clinical condition presented to ophthalmologists. The present study has showed the pattern of eyelid and periorbital lesions in our population. All excised eyelid and periorbital lesions must be submitted for histopathologic confirmation. Early diagnosis and surgical excision of lesions provide better management, save the patients from more complicated surgeries, and maintain more successful cosmetic results.

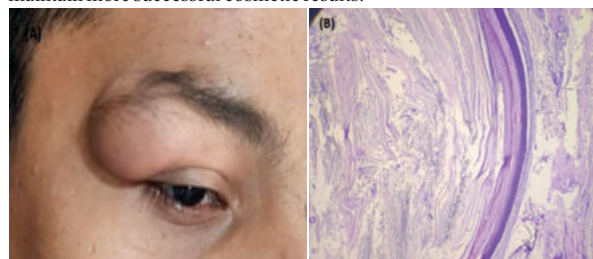


Fig 1: EPIDERMAL INCLUSION CYST:(A) Clinical Photograph: Periorbital swelling .(B)H & E (10X) Section studied shows fibrocollagenous wall lined by stratified squamous epithelium, lumen shows keratinous debris .

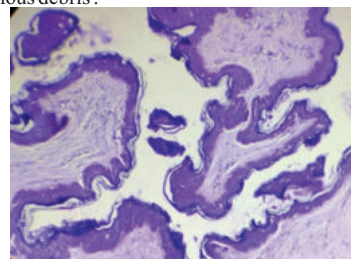


Fig 2:FIBROEPITHELIAL POLYP: H& E (10X) section studied shows stratified squamous epithelium underneath shows loose fibrocollagenous stroma.

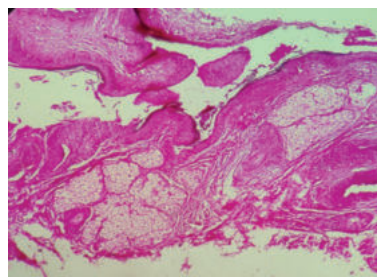


Fig 3:DERMOID CYST: H& E (10X) section studied shows stratified squamous epithelium underneath shows hair follicles and sebaceous glands.

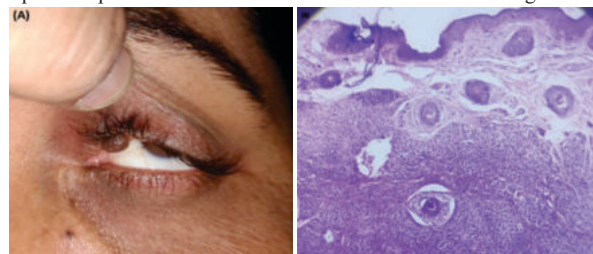


Fig-4: INTRADERMAL NEVUS:(A) Clinical Photograph:Mole

seen on left eyelid near the inner canthus. (B)H & E section studies shows melanocytes in the dermis mainly in nests and separated by epidermis by grenz zone.(10X)

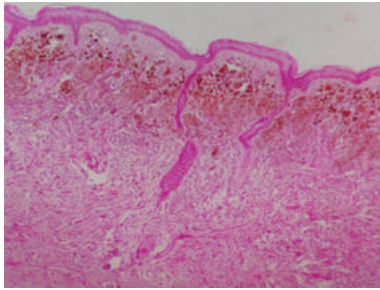


Fig-5: JUNCTIONAL NEVUS:H & E shows (10X) showing keratinised stratified squamous epithelium with underlying sheets of nevus cells confined to the dermis.

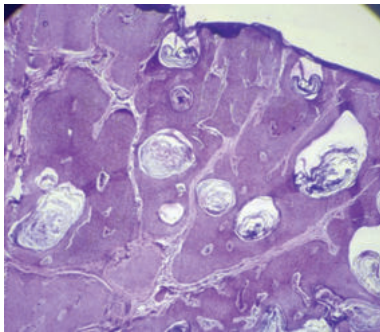


Fig-6: SEBORRHEIC KERATOSIS:H & E (10X)section shows acanthosis with pseudohorn cyst and intraepidermal keratin cysts(true horn cyst).

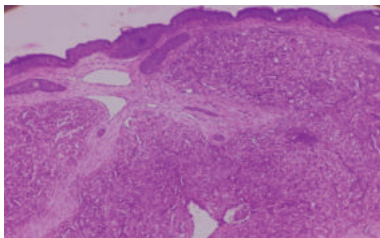


Fig-7: (A) INFANTILE HEMANGIOMA:H & E section shows epidermis, underneath dermis shows lobules separated by thin septa containing clusters of thin walled capillaries.

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