



A Study of Common and Uncommon Eyelid Lesions - Telescoping Through Histopathology

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ABSTRACT

Eyelid histology comprises of various structures that gives rise to wide spectrum of pathologies. Eyelid lesions require surgical treatment mostly; hence a correct preoperative provisional diagnosis is required. Histopathological examination of the excised specimen with confirmation of clinical diagnosis given plays an enormous role in treating eyelid lesions so as to improve patients care. We studied 25 cases of eyelid lesions retrospectively over a period of a year. We came across epidermal cyst as a most common lesion occurring in eyelid followed by capillary hemangioma, dermal nevus and molluscum contagiosum. Uncommon lesions that were diagnosed were pilomatricoma, tumoral calcinosis, cysticercosis which completely differed from the clinical diagnosis offered. In conclusion, each and every excised specimen should not be considered as waste material and always be (without exception) sent for the histopathological examination for correct diagnosis and further management.

Keywords- eyelid lesions, common and uncommon, histopathology.

INTRODUCTION

Eyelid lesions are common concerns amongst patients who presents to the ophthalmologists, dermatologists and general practioners. Histologically eyelid is composed of skin and subcutaneous tissue including its adnexa, striated muscle, tarsus with the meibomian glands, and the palpebral conjunctiva. Because of different tissues at eyelid level, a variety of tumoral types and subtypes can arise.^[1] Therefore ophthalmic pathology is unique in many aspects as it encompasses wide range of tissues and shows wide range of diseases.^[2] Almost all of the eyelid lesions can be excised surgically because of its superficial

nature. 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.^[3]

AIM AND OBJECTIVES

1. To provide a precise diagnosis of the disease.
2. To help clinicians prioritizing their presumed clinical diagnoses according to the commonly presented lesions in the community.

3. Evaluating the relative frequency of benign eyelid lesions presented to a teaching hospital
4. To make ophthalmologist aware of possibility of unusual lid lesion
5. To classify eyelid lesions in common and uncommon lesions

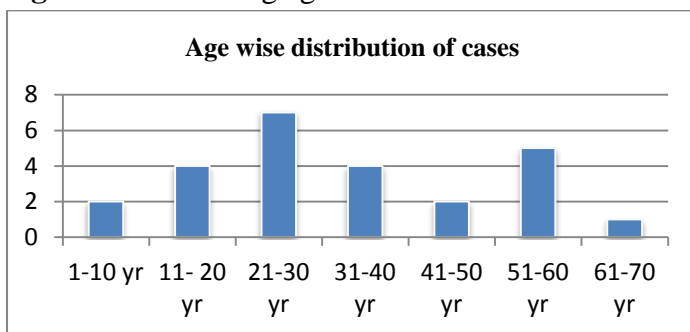
MATERIAL AND METHODS

A retrospective study was carried out at our hospital during a period of a year from June 2015 to June 2016. Study included total 25 cases who presented with eyelid lesions of varying duration to the ophthalmologist. The excised eyelid lesions with suspected clinical diagnoses were sent for histopathology for confirmation. The received specimen samples were fixed in 10% formalin for 24 hours. Sections were taken depending on size of sample, processed, stained with Hematoxyline and Eosine (HE) stain and examined for microscopic findings.

RESULTS AND DISCUSSION

A total of 25 cases were studied with equal male to female ratio. Maximum numbers of cases were found in the age group of 21-30 years. Only a single case was reported in the age group of 1-10 and 61-70 years (Fig 1)

Fig.1- Chart showing age wise distribution of cases.



Upper eyelid was commonly involved (88%) as compared to lower eyelid (12%). Most of the patients presented with gradually increasing, painless swelling over eyelids. Most common lesion diagnosed was epidermal cyst (13) (52%) followed by capillary hemangioma (5) (20%) and dermal nevus (3) (12%) respectively. A single case (4%)

was contributed by tumoral calcinosis, cysticercosis, molluscum contagiosum and pilomatrixoma each. Clinical diagnosis was offered in most of the cases with clinico-pathological correlation of 84%. Clinical diagnosis was not offered in a case. No malignant lesion was found in the present study. (Table 1)

Table 1 : Clinico-pathological correlation and site wise distribution of eyelid cases

Histopathological Diagnosis	Cases	%	Clinical diagnosis given	Site
Epidermal cyst	13	52%	12	2 lower eyelid
Hemangioma	5	20%	5	Upper eyelid
Nevus	3	12%	3	Upper eyelid
Pilomatrixoma	1	4%	0	1 lower eyelid
Calcinosis cutis	1	4%	0	Upper eyelid
Molluscum contagiosum	1	4%	1	Upper eyelid
Cysticercosis	1	4%	0	Upper eyelid
Total	25	100%	21	

Epidermal cyst- As per table 1, more than half of the cases diagnosed were of epidermal cyst (52%). Age of presentation of epidermal cyst ranged from 3rd decade to 6th decade. The only case detected in 61-70 year age group was epidermal cyst. Out of 13 cases of epidermal cyst, 12 cases correlated with the given clinical diagnosis. Two cases were present over lower eyelid while rest was on upper eyelid. One case had no offered clinical diagnosis. Clinically it presents as smooth, dome shaped swellings with punctum over face, neck and upper trunk. (Fig 2a) Grossly epidermal cyst shows varying sizes of cysts, soft to firm in consistency filled with pultaceous material. Microscopically, it shows cyst lined by stratified squamous epithelium sometimes with adnexa (called as dermoid cyst) with abundant laminated keratin material.^[4] (Fig2b) No other study found such large number of cases of epidermal cyst. In studies conducted by Pudasaini S et al^[5] and Bastola P et al^[6] epidermal cyst accounted for 27.2% and 35% each, while the present study it accounted for 52%.

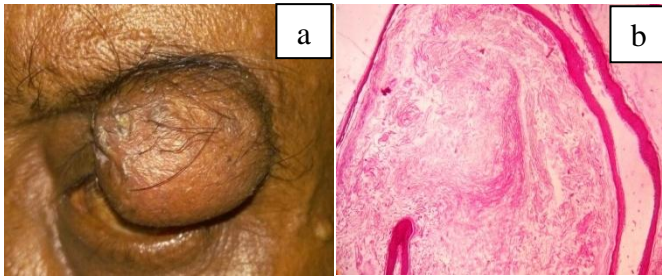


Fig.2 a,b- Clinical & microphotograph of epidermal cyst (HE,100x)

Capillary hemangioma- Second common lesion was capillary hemangioma, a benign vascular tumor, contributing five cases (20%). Most of the patients were from 3rd decade of age. Clinical diagnosis was offered in all the cases and all correlated with histopathological diagnosis. All capillary hemangiomas were on upper eyelid. Clinically hemangioma presents as red or purple, flat or raised lesions, generally less than 5 cm. (Fig3a) Microscopically, it shows lobules of numerous small (capillary sized) vascular spaces lined by plump endothelial cells with scanty intervening stroma.^[7](Fig 3b)

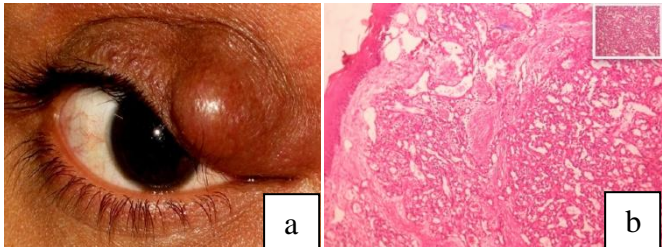


Fig.3 a,b- Clinical & microphotograph of capillary hemangioma(HE,100x), Inset(HE 200x)

As per study carried out by Bastola et al^[6] capillary hemangioma was 7% and cavernous hemangioma was 3.5%. While according to Ramya BS et al^[8] capillary hemangioma was most common tumor of eyelid accounting for 31.1% which is greater as compared to the present study. In the present study, no cavernous hemangioma was diagnosed.

Intradermal nevus- Three cases (12 %) were contributed by intradermal nevus, a common benign melanocytic tumor. Incidence of intradermal nevi increases as age advances. These rarely can transform into melanoma as compared to junctional and compound nevi.^[9] All three cases were present

over upper eyelid and patients were from the 4th decade. Clinically, it involves any part of eyelid skin and presents as flat or elevated, usually pigmented lesion.(Fig4a) Microscopically, it shows nests, cords or singly dispersed population of small or round cells with round, oval or spindle shaped nuclei with or without melanin.^[10] (Fig 4b)

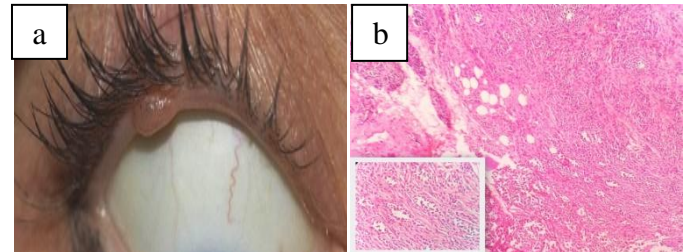


Fig.4 a,b- Clinical and microphotograph of nevus (HE100x), Inset (200x)

The findings of the present study correlated with study by Bastola et al^[6] where they found intradermal nevus accounting for 12.2%. While study by Ramya BS et al^[8] showed that nevi ere contributing 20% of cases. But authors have not specified them into intradermal, junctional or compound nevi. In the present study no junctional or compound nevi were noted.

Rest four cases were contributed by pilomatricoma, calcinosis cutis, molluscum contagiosum and cysticercosis each.

Pilomatricoma- Pilomatricoma (pilomatrixoma, califying epithelioma of Malherbe) is a benign adnexal tumor originating from hair root matrix, first described by Malherbe and Chenantais in 1880.^[11] Pilomatricoma arises in adolescent and young people, sometimes in adults having propensity to occur in the head and neck region, often involving the eyelid or eyebrow.^[12] The clinical picture of pilomatricoma is often misleading, prompting for histopathological analysis. In the present study, pilomatricoma was present over lower eyelid and clinical diagnosis given was infected dermoid cyst. (Fig5a) Clinically, it presents as slow growing, firm nodule of 0.5-3 cm. Microscopically, it shows lobulated tumor usually in dermis, sometimes extending to subcutaneous fat surrounded by pseudocapsule of compressed adjacent connective

tissue with overlying normal epidermis. Tumor lobule shows variable mixture of two types of cells, basaloid cells and ghost cells. Basaloid cells are small and uniform with round, vesicular nuclei and prominent nucleoli. With maturation, these basaloid cells transform into ghost cells. Ghost cells have abundant eosinophilic cytoplasm and small hyperchromatic nuclei. With advancement, nuclei are lost and only eosinophilic keratinous material with barely visible ghost outlines of tumor cells seen.^[13] (Fig5b) Only a single case was reported in a study by Pudasaini et al which correlated our finding.^[5]

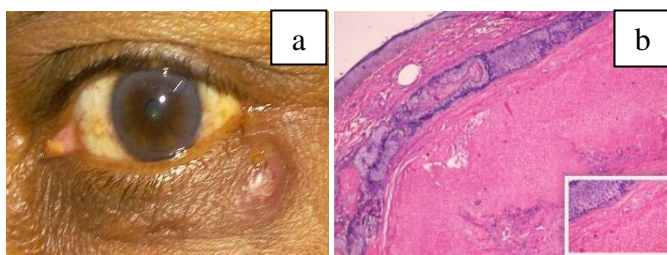


Fig.5 a,b- Clinical and microphotograph of pilomatricoma (HE100x), Inset (200x)

Calcinosis cutis- Calcinosis cutis is characterized by the deposition of amorphous calcium and phosphate salts under the epidermal layer.^[14] There are four types of calcinosis cutis i.e dystrophic, metastatic, iatrogenic and idiopathic. In our case, 15 year old male was presented with upper eyelid mass since a month. Clinically, epidermal cyst was the diagnosis given. Histopathologically, it showed large deposits of calcium below epidermis suggesting calcinosis cutis. Patient retrogressively investigated for calcium and phosphate levels which were within normal limits. Thus, diagnosis offered was idiopathic calcinosis cutis (Tumoral calcinosis). (Fig6)

Molluscum contagiosum- Molluscum contagiosum is a self limiting epidermal papular lesion caused by pox virus, usually presenting in the 1-10 years of age group. In the present study, a seven year old female child was presented with recurrent eyelid lesion to the ophthalmologist. With suspicion of molluscum contagiosum, for faster resolution lesion was excised and sent to histopathology which confirmed the diagnosis. Histopathologically, it

showed characteristic endophytic hyperplasia producing intradermal pseudotumor. Keratinocytes showed large intracytoplasmic eosinophilic to basophilic inclusions displacing the nucleus to aside.^{[15] [16]} (Fig7) Pudasaini S et al^[5] and Al-faky Y H^[17] documented 9.1 % and 3.2 % of cases of molluscum contagiosum in their studies respectively, while in the present study it was found to be 4%.

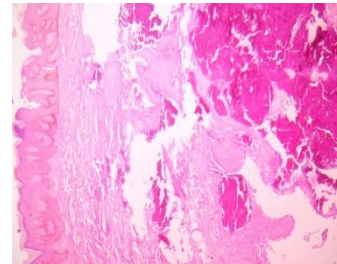


Fig.6- Calcinosis cutis (HE100x)

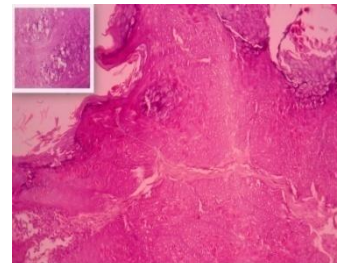


Fig.7- Molluscum contagiosum (HE100x) Inset (200x)

Cysticercosis- Cysticercosis is a systemic parasitic infestation which is caused by larvae of *Taenia Solium* (*T. Solium*) affecting central nervous system, skeletal muscle, subcutaneous tissue and eye. In eye, eyelid is uncommon site for infestation.^[18] In the present study, three year old male child presented with upper eyelid swelling taking dermoid cyst as a clinical suspicion. (Fig8a) The excised lesion demonstrated larval form of *T Solium* showing investing cuticle, subcuticular tissue, one of sucker and caudal end having duct-like invaginations. (Fig8b) It also showed granulomatous inflammatory reaction to larva.^[16]

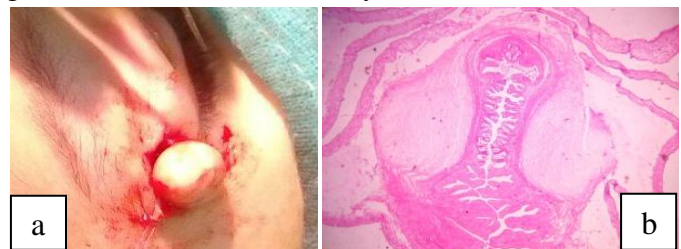


Fig.8 a,b- Intra-operative and microphotograph of cysticercus cellulosae (HE100x)

As we take a look on clinically presenting common eyelid lesions, chalazion tops in the list. Generally, chalazion is a self limiting disease of meibomian gland. In inflamed cases, symptomatic treatment like lid massage, moist heat or topical steroid suffice the resolution without any need for surgery. On the other hand, there could be a possibility of correctly diagnosing the chalazion clinically, which abstain ophthalmologist from sending the specimen to histopathology. Therefore none of the cases received in histopathology came out to be chalazion. We have not received any malignant lesion in the present study, as suspected malignant cases were directly referred to the plastic surgeons for treatment and full workup in view of cosmetic concern of the patient. In a study by Ramya BS et al^[8], authors found sebaceous carcinoma (41.4%) as the most common malignancy involving eyelid, followed by basal cell carcinoma (26.8%) and squamous cell carcinoma (21.9%). While Khalil MF et al^[19] documented basal cell carcinoma (65%) as most common malignancy, followed by squamous cell carcinoma (23%) and sebaceous carcinoma (12%). These different findings suggest multifactorial etiology.

CONCLUSION

Eyelid is a heterogeneous tissue; hence we tend to see a variety pathologies including infective, inflammatory, benign and malignant. Each and every excised eyelid lesion should be sent for histopathological analysis as there are many conditions that may mislead clinical diagnosis. Apart from common eyelid lesions like epidermal cysts, hemangiomas, nevi, chalazion, molluscum contagiosum, some uncommon lesions like pilomatricoma, calcinosis cutis, cysticercosis should be considered in the differential diagnosis of eyelid lesions.

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