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Paediatric Eyelid Lesions- A Report of 20 Cases

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ABSTRACT

Background: Eyelid lesions are one of the commonest lesions encountered by ophthalmologists in their clinical practice. They could be classified in various ways such as neoplastic or non-neoplastic; congenital or acquired. The common benign conditions affecting the eyelid include cysts like dermoid, epidermoid and epithelial cysts, inflammatory lesions, melanocytic nevi and papilloma. Ignorance about the benign nature of the lesion may lead to increased debility.

The purpose of this study is to contribute information to the lliterature on various eyelid lesions and their incidence as found in a tertiary hospital.

Methods: This is a retrospective observational study of surgically excised eyelid lesions in patients below 12 years of age. The study was conducted after obtaining permission from the Institutional Ethics Committee.

Result: Out of 20 lesions, 15 cases belonged to the non-neoplastic category while five cases were neoplastic in nature. Cystic lesions predominated in the non-neoplastic category (11 out of 15 cases). The remaining four cases in the non-neoplastic category included three cases of infective etiology and one case of developmental etiology. There were no malignant neoplasms found in our study. The common presenting feature was that of eyelid swelling. Highest incidence of eyelid lesions was in the upper lid (14 of 20 cases, i.e. 66.66%).

Conclusion: It is necessary to subject every lesion of the eyelid to histopathological examination. Sometimes, clinically benign lesions turn out to be malignancies which entails a wider surgery later. This study points out to the wide spectrum of lesions that can afflict the eyelid.

Keywords: *Cysts, Nevi, Papilloma, Benign, Histopathological Examination*

Introduction

Eyelid lesions are one of the commonest and innocent looking lesions encountered by ophthalmologists in their clinical practice. They could be classified in various ways such as neoplastic or non-neoplastic; congenital or acquired [1] which are further classified into inflammatory, traumatic or neoplastic (benign or malignant).[1] The common benign conditions affecting the eyelid include cysts like dermoid, epidermoid and epithelial cysts, inflammatory lesions, melanocytic nevi and papilloma. The eyelid can also be the site of various malignant tumors which includes epithelial (such as basal cell carcinoma, squamous cell carcinoma), adnexal (sebaceous carcinoma), lymphoproliferative and endocrine neoplasms. These tumors may present in unusual ways or mimic benign processes often requiring biopsy for a definitive diagnosis. Ignorance about the benign nature of the lesion and lack of awareness about possible treatment may lead to increased debility and unnecessary loss of vision. Eyelid tumors are rarely lethal, but late diagnosis of the tumors requires more invasive surgery and consequently will have adverse aesthetic effects as well.[2]

The purpose of this study is to contribute information to the lliterature on various eyelid lesions and their incidence, as found in the paediatric age group in a teaching institute located in the Western part of India. This is because very few studies have been found to be conducted on the spectrum of eyelid lesions in India, [3,4] fewer so in the paediatric age group.[5]

Materials And Methods

This is a retrospective observational study where all surgically excised eyelid lesions received in the department during the study period of five years (2011-2015) were included. Clinical and radiological details of the patients (aged 12 or less) were obtained from the indoor charts and department records and were correlated with the histopathological findings and relevant literature was reviewed.

Since it was a retrospective study not involving any intervention, patient consent was not required and a waiver was obtained from the Institutional Ethics Committee to that effect.

Result

Out of 20 lesions, three cases were non neoplastic (15%), 12 were cysts and developmental tumor like lesions (60%)

and five cases (25%) were neoplastic (Figure 1). The lesions were classified as cysts and developmental tumor like lesions, non-neoplastic lesions and neoplastic lesions. In the study, cystic lesions were the most common (12 of 20 cases - 60%), followed by neoplastic lesions (five of 20 cases or 25%). Dermoid cysts (Figure 2 A, B) were the single highest group of lesions comprising six of 20 cases (30%). Majority lesions were seen since birth. In the non-neoplastic category, three infective lesions were found comprising a rare case of ***Dirofilaria*** (Fig 3 A, B) and two cases of **Molluscum *contagiosum*** (Figure 4). Amongst the neoplastic lesions, **hemangioma** (Figure 5 A, B) occurred in two cases and there was one case each of lipoma, compound nevus and chondroid syringoma (Figure 6 A, B), again not very usual cases to stumble upon. There were no malignant neoplasms in this age group.

Table 1: Incidence of eyelid lesions in different sites in pediatric age group (< 12 years of age) (n=20).

Location	No. of pediatric cases	Incidence of pediatric lesions in each location (%)
Upper lid	14	70
Lower lid	02	10
Both lids	01	05
Medial canthus	02	9.5
Lateral canthus	01	4.7
Conjunctiva	01	4.7
Lacrimal sac	00	00

Table 2: Pediatric eyelid lesions (n=20).

Histological Diagnosis		No. of cases	Incidence (%) (n=21)
Non-Neoplastic		**15**	**71.4**
Cysts		**11**	**52.38**
	Dermoid	06	28.57
	Epidermoid	04	19.04
	Sudoriferous	01	4.76
Developmental	Choristoma	**01**	4.76
Infective		**03**	**14.28**
	Molluscum contagiosum	02	9.52
	Parasitic granuloma	01	4.76
Neoplastic		**05**	**28.57**
Benign	Haemangioma	02	9.52
	Lipoma	01	4.76
	Nevus	01	4.76
	Benign mixed tumor	01	4.76

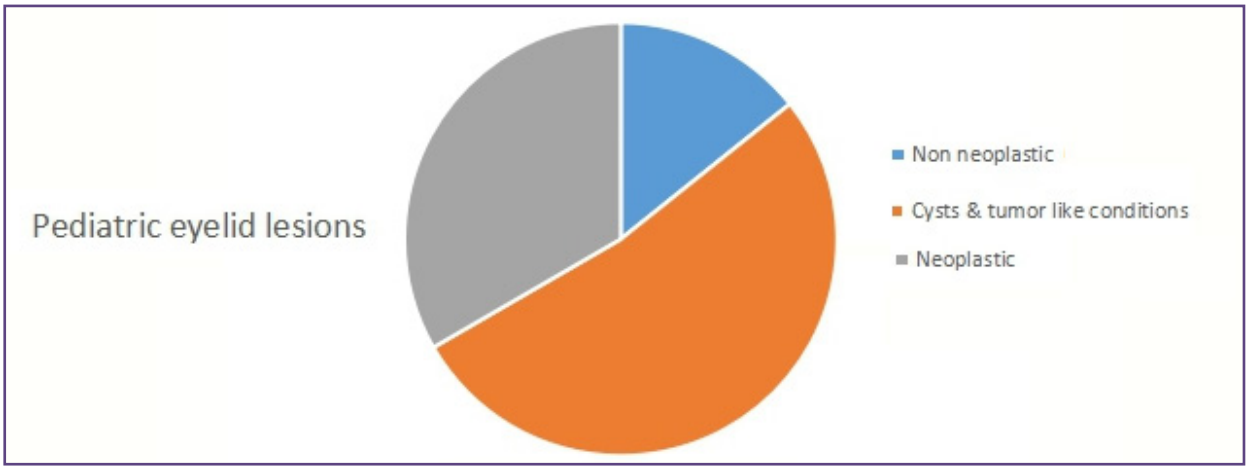

Fig. 1: Distribution of eyelid lesions.

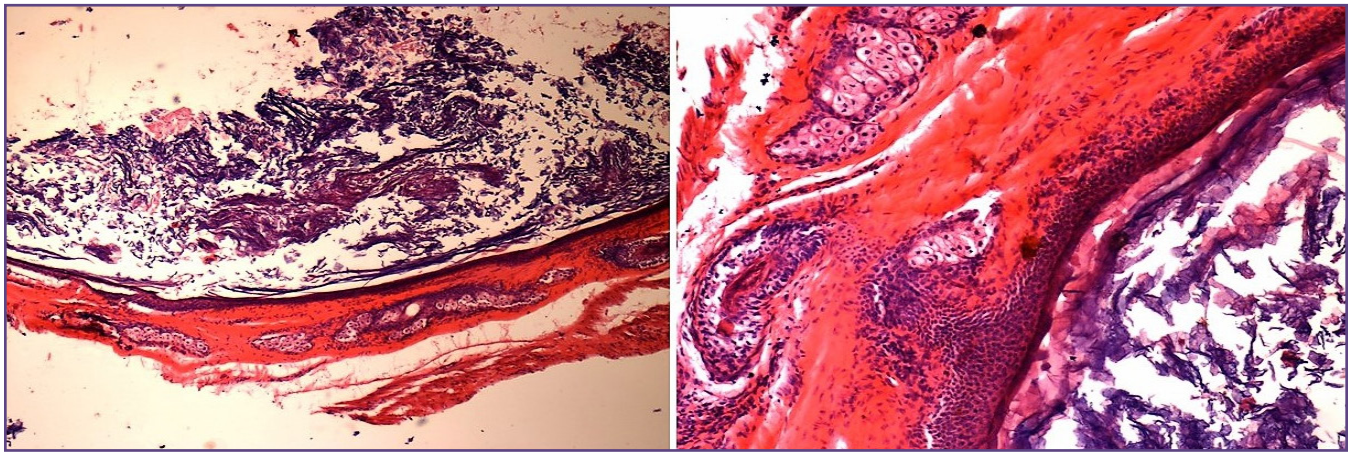

Fig. 2A: Dermoid cyst- filled with keratinous material (H&E, 40x), 2B: Dermoid cyst- wall lined by stratified squamous epithelium composed of fibrocollagenous tissue and adnexa (sebaceous glands) (HE, 100x).

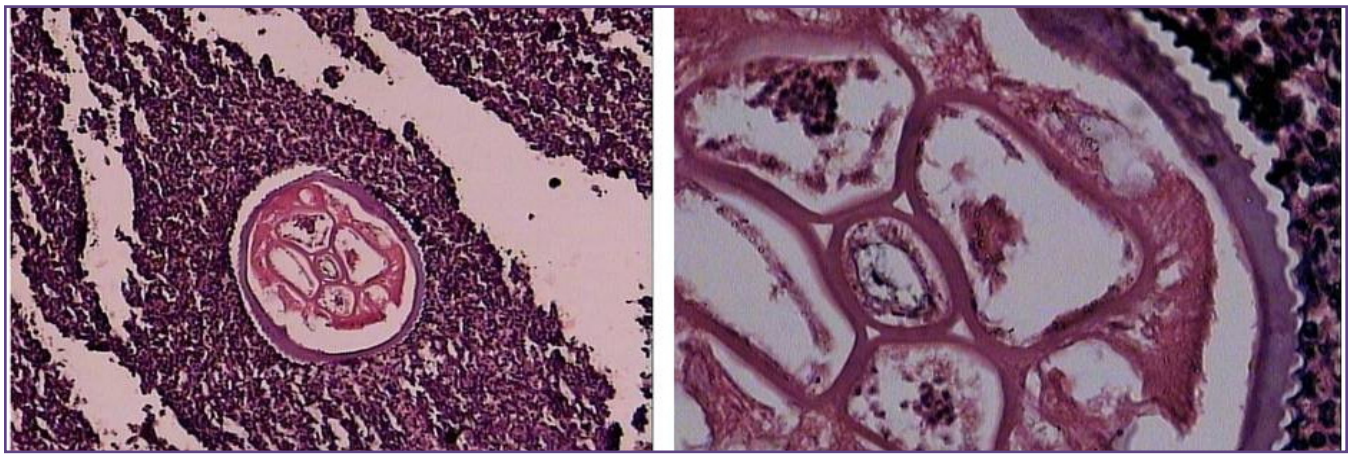

Fig. 3A: Dirofilaria- mature adult female with multi-layered cuticle, longitudinal muscles and well developed reproductive organs (HE,100x), 3B: Dirofilaria repens- multi-layered cuticle with ridges, longitudinal muscle layer, lateral chord and uterus (HE, 400x).

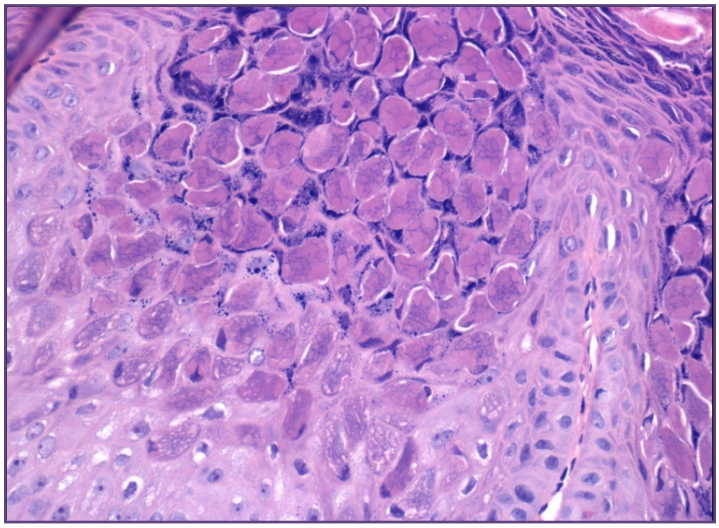

Fig. 4: Molluscum contagiosum- eosinophilic molluscum bodies (HE,100x).

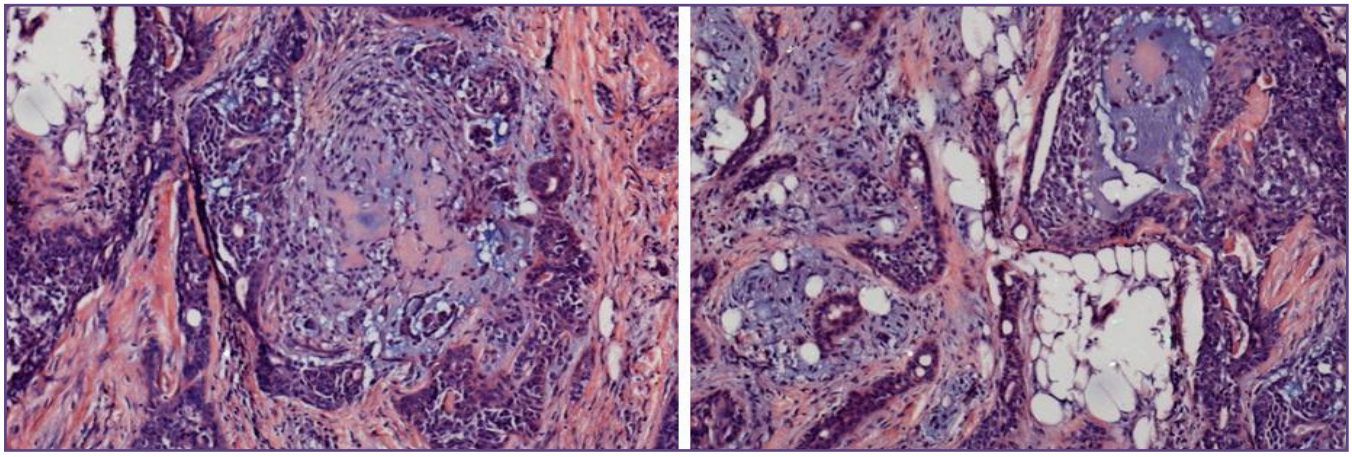

Fig. 5A: Chondroid syringoma- proliferating myxoid and epithelial elements (HE, 100x), 5B: Chondroid syringoma- Also showing lipomatous component (HE, 100x).

Discussion

The unique combination of functional importance (to protect and lubricate the eye) as well as cosmetic importance makes management of eyelid lesions delicate.

Paediatric lesions

Thus, putting in perspective, in our study, there were 20 pediatric patients (age below 12 years) out of which six cases had neoplastic lesions and remaining fifteen were non neoplastic. Out of the 15 lesions, the largest group was of 12 cases of cysts and developmental tumor- like lesions (commonest lesion being dermoid cyst). This was followed by the three infective cases (*Dirofilaria* and Molluscum contagiosum).

It was found that majority of the pediatric cases (14 of 20 cases) were afflicting the **upper lid (66.66%).** Very occasional study has discussed the findings of pediatric age group separately.

In the study conducted at Southern Taiwan (1991-2000), Hsu et al studied eyelid tumors in patients under 17 years of age and found that out of 78 cases, the four most common tumors, in order of frequency, were epidermal cysts (23.1%), dermoid cysts (17.9%), squamous cell papilloma (11.5%) and compound nevi (9%).[6]

This study indicates that a wide variety of lesions arising from various parts

of the eyelid can produce an eyelid mass. The palpebral conjunctiva and lacrimal gland pathologies also present as eyelid masses. Some benign appearing lesions can actually be malignant or premalignant and every lesion must therefore be subjected to histopathological examination. Certain eyelid lesions like haemangioma, choristoma, dermolipoma or a recurrent sebaceous adenoma may be part of a syndrome and the patient must be investigated as such (Goldenhar syndrome and Muirr - Torre syndrome to name a few)

This is one of the few Indian studies demonstrating such a spectrum of eyelid lesions in the paediatric age group.

Dermoid cyst

histologically had the lining of stratified squamous epithelium with adnexal structures like hair follicles and sebaceous glands. It was found to be more in the upper lid which was consistent with the literature that said zygomaticofrontal suture was the commonest site for the development of dermoid cyst.

Capillary Haemangioma

Amongst the soft tissue tumors, it is the most common benign periorbital tumor of childhood. It is present in 1-2% of all births. There is a 3:1 ratio of females to males. The incidence of orbit and eyelid hemangiomas is 1/10 that of systemic hemangiomas, which occurs in 10% of all children by one year of age.[7] Presentation of capillary hemangiomas usually occurs after birth, but within the first 6 months of life (30% present at birth, 50% by 1-2 months, and 90% by 6 months). Often, a capillary hemangioma may enlarge and/or change color with crying; and a cutaneous lesion may blanch with pressure and may have a spongy consistency on palpation, they are without pulsation and have no bruit.[8] Upper eyelid capillary hemangiomas can cause mechanical ptosis. This can lead to reduced visual acuity due to amblyopia from induced astigmatic anisometropia, strabismus, or occlusion by the eyelid itself. The involvement can be cutaneous, subcutaneous, or with orbital extension. Cutaneous lesions present as a red, raised lesion, while subcutaneous lesions can be dark blue and may extend into the orbit.

Histologically, the appearance of these lesions depends on the stage of the evolution. Early lesions may be very cellular, with solid nests of plump endothelial cells and little vascular lumen. Established lesions comprise of well-developed, flattened, endothelium-lined capillary channels of varying sizes in a lobular configuration. Involuting lesions show increased fibrosis and hyalinization of capillary walls with luminal occlusion. The differential diagnoses include nevus flammeus (port-wine stain) of Sturge-Weber syndrome, lymphangioma and other vascular malformations. Granulation tissue could be ruled out because of the conspicuous absence of fibroblasts and inflammatory cells.

In a child with a capillary hemangioma, it may be necessary to look for associated syndromes like PHACES.[9]

Chondroid syringoma

It is a benign mixed tumor characterized by sweat gland elements in a cartilaginous stroma. This rare tumor accounts for only 0.01% of all primary skin tumors and occurs only rarely in the periorbital region. Usually between 0.5 cm and 3.0 cm, risk of malignancy increases in chondroid syringomas greater than 3.0 cm in size. Our lesion was about 1.2cm in greatest dimension.

To the best of our knowledge, only 27 tumors of this type have been reported in the eyelid.[10] In the periorbital area, the most common site of origin is the lacrimal gland (Krause's glands). Sweat glands, have more rarely been reported as the site of origin. In some cases, the exact origin of the tumor could be determined only by thorough clinical examination. Correlation of physical signs and a thorough search for any remnants of the possibly affected lacrimal gland lobe might help to determine the tumor origin.

Some studies have emphasized the importance of immunohistochemistry in the diagnosis of mixed tumors. The histomorphological differential diagnosis includes eccrine and apocrine hidrocystomas, fibroadenoma and hidradenoma. Differentiation from hidrocystomas was mostly based on clinical grounds since apocrine hidrocystomas most commonly appear as translucent papules or nodules. Other differentials are ruled out mostly on histomorphological basis.[10]

Conclusion

Eyelid lesions are less common in the paediatric age group. Cysts and developmental tumor like lesions outnumber the neoplasms. Malignancies are extremely rare in the eyelid in paediatric age group. This is one of the very few studies describing eyelid lesions in the paediatric population.

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Competing Interests

None

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