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A Rare Case of Epidermoid Cyst in Right Eye

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Abstract **Case Report**

Epidermoid cysts are benign, slowly progressive tumors that result from proliferation of epidermal cells within a confined space. These cysts of the eyelid typically present as a solitary, firm, elevated, round, freely mobile subcutaneous mass with smooth overlying skin. We report a case of a 7 year-old female who presented at Ophthalmology department of Indira Gandhi Medical College, Shimla with chief complain of painless swelling in the right lower eyelid since birth. It was an extra-meibomian site, i.e., at the right lateral inferior aspect of the eyelid. It is a rare site for the epidermoid cyst to grow to such an extent. All relevant clinical examination as well as investigations including MRI and histopathology was done for confirmation of diagnosis. The lesion was excised completely under general anesthesia.

Keywords: Epidermoid, cyst, Eye.

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INTRODUCTION

Epidermoid cysts are benign, slowly progressive tumors that result from proliferation of epidermal cells within a confined space [1]. The most common site for the epidermoid cysts is the meibomian glands of the upper tarsus due to retention of meibomian gland material. These cysts of the eyelid typically present during adolescence and late adulthood as a solitary, elevated, dome-shaped elevation of varying size, freely mobile subcutaneous mass with smooth overlying skin that may have an opening. They may be pigmented and histopathologically, a cystic space is filled with keratin and lined by keratinized stratified squamous epithelium [1-3]. Usually these cysts are asymptomatic; however, they may become inflamed or secondarily infected. This may be misdiagnosed as chalazion or sebaceous cyst [4]. Most cysts of the eyelid are diagnosed as epidermal inclusion cysts, dermoid cysts, pilar/sebaceous cysts or as a chalazion. The diagnosis of epidermal cyst is not made very often. This differential should be kept in mind while operating on a cyst of the eyelid. A definitive diagnosis depends upon a MRI and histopathology examination. An en bloc surgical excision of the cyst is always the definitive treatment or else there will be recurrence, granulomatous reaction or foreign body reaction [4, 5].

CASE REPORT

We are reporting a 7-year-old female presented at Ophthalmology department of Indira Gandhi Medical College, Shimla with chief complains of painless swelling on the right lower lid since birth. The patient as well as their parents was aware of the swelling since birth but it has slowly and progressively enlarging since last 2 years. For this their parents were taking treatment from many doctors but no relief was there. There was no history of any prior ocular trauma and surgery in that eye or any systemic illness. No history of pain, redness, floaters, flashs and diplopia was there.

Clinical examination

On examination, there was swelling at the lateral aspect of the right lower lid below the eyebrow measuring 1.6 × 1.1 cm which was globular in shape with a smooth surface and margins was observed. There was partial adhesion of the palpebral conjunctiva of the eyelid to the bulbar conjunctiva of the eyeball.

On palpation, the swelling was non-tender and local temperature was not raised. It was cystic but well defined, firm in consistency, non-fluctuant, and non-translucent, fixed to the overlying skin but free from the underlying structures such as tarsus or the bone. There were no pulsations or bruits.

Examination of the left eye was normal. There were no cysts elsewhere like on face, neck and trunk. The general and systemic examination was also normal. All vitals including blood pressure, pulse rate, respiratory rate, temperature etc. were normal.

Ophthalmic Investigations

Upon Ophthalmic examination the vision was normal in both eyes. Fundus examination was normal. All ocular reflexes were normal. Intra-occular pressure was also normal.

Biochemical investigations

All biochemical lab investigation like HB, TLC, DLC, Platelets, FBS etc. were also in normal limits.

Diagnosis

Firstly the probable diagnosis of conjunctival hernia with symblepharon was made. But MRI Examination revealed the final diagnosis of epidermoid cyst with symblepharon.

Treatment

On confirmation of diagnosis of epidermoid cyst we planned for en bloc surgical excision of the cyst. After explaining the all about surgical procedure including risk involved to the parents the consent for surgery was taken. Complete excision of the cyst under general anesthesia was done (Fig-1-4). Post operatively, patient was given oral antibiotic and topical antibiotic eye drop and local antibiotic ointment. The cystic material was sent for histo-pathological examination. On 1st post operative day patient was comfortable and symptomless.

Follow up examination

A patient was discharged on third day after surgery. Histo-pathological examination revealed 1.6 × 1.1 cm globular, grayish-brown cyst lined by squamous epithelium with sebaceous cheesy material (keratin) inside, confirming the diagnosis epidermoid cyst.

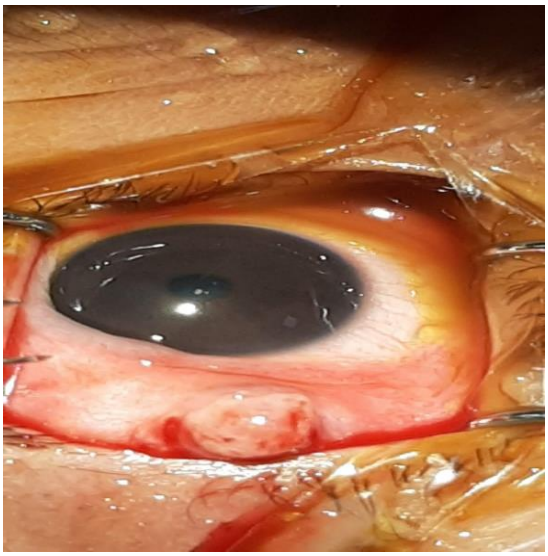

Fig-1: Epidermoid cyst before surgey

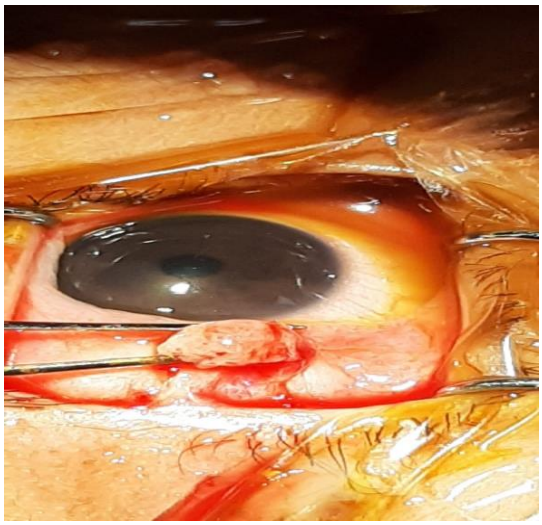

Fig-2: Epidermoid cyst during surgey

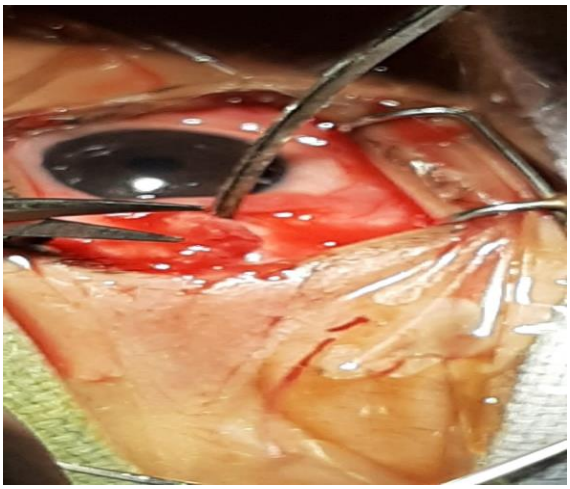

Fig-3: Epidermid cyst during surgery

Fig-4: Epidermid cyst after surgery

DISCUSSION

Epidermal cysts are solitary sub-epithelial cysts, are benign, slow growing, firm in consistency and most commonly seen on the face, scalp, neck and trunk. These are frequently seen on the upper eyelid, mainly on the conjunctiva or on the skin [6-8] but in this case, it was at the right lateral inferior aspect of the eyelid. It is a rare site for the epidermoid cyst to grow to such an extent.

There are various proposed mechanisms for the formation of epidermoid cyst. These include [1]

- Sequestration of epidermal rests along fusion planes during embryonic development.
- Epidermal proliferation of the infundibulum of the hair follicle with occlusion of the pilosebaceous unit
- Implantation of epidermal elements as a result of trauma or surgery along the incision lines.

Since there is no history of trauma or surgery in our patient, the most likely theory is the sequestration of epidermal rests during the embryonic development of the eyelid.

Differential diagnosis includes sebaceous cyst, lipoma and dermoid cysts. Sebaceous cyst is a common benign cyst that appears as smooth, elevated, yellow, usually painless swellings beneath the skin in areas with multiple hair follicles. There is blockage of pilosebaceous duct on the skin in cases of sebaceous cysts. Cysts arose from infundibulum of hair follicles, are either epidermoid or dermoid cysts. Histopathologically, epidermoid cysts are characterized by squamous epithelium lining that does not possess intercellular bridges. The epithelial cells lose their nuclei and slough off into the lumen of the cyst. The lumen of the cyst usually contains predominantly homogenous, eosinophilic and keratin (cheesy material produced by inner layer of squamous epithelium). Whereas dermoid cyst contains epidermal appendages like sebaceous gland, sweat gland and hair follicles [1, 4]. As in this case, histo-pathological examination revealed 1.6×1.1 cm globular, grayish-brown cyst lined by squamous epithelium with sebaceous cheesy material (keratin) inside, confirming our diagnosis of epidermoid cyst.

Complications that are associated with epidermoid cysts include infection, malignant transformation, and rupture that because granuloma formation or even sometime abscess formation which was not occurred in this case as the age of the patient is just 7 years.

The treatment of choice is the excision of the cyst encapsulated with the cyst wall like in our case, as otherwise the cyst wall can lead to a recurrence of the cyst, and spillage of the cyst material in the in the surrounding tissue causes an inflammatory and a foreign body reaction.

CONCLUSION

In the present case, though there was history of Cyst formation likely originated at the time of eyelid development. Like with epidermal cysts in other location, an en bloc surgical excision is the treatment of choice in this case also, else there will be recurrence, granulomatous reaction or foreign body reaction.

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