Original Research Paper

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SURGICAL MANAGEMENT OF CORNEAL LIMBAL DERMOIDS BY SIMPLE EXCISION

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ABSTRACT

Aim: To study clinical features and surgical outcomes of limbal dermoid excision in Kashmiri patients.

Study Design : Interventional, Prospective

Material and Methods: 20 patients with epibulbar limbal dermoid who attended the Out Patient department of Government Medical College ,Srinagar, from August 2019 to September 2020, across all age groups were included in the study. All the patients were examined for site, colour, presence of pigmentation and presence of ocular and systemic associations of the lesions and then surgically managed. Simple Excision was done with blade and scissors. Postoperative follow up was done upto 3 months

Results: The age group included was 4 to 60 years with male to female ratio 3:2. All the patients had unilateral epibulbar dermoids located at infero-temporal quadrant of the limbus. Most lesions (13 cases - 65%) extended equally to cornea and sclera while a few extended more on the sclera (3 cases - 15%) or cornea (3 cases - 15%). Most (15 cases - 75%) were round. Two (10%) had Goldenhar Syndrome and both had pre-auricular tags and maxillary hypoplasia. Postoperatively one patient (5%) had corneal thinning and two(10%) patients had granulation tissue formation.Pigmentation of the lesion was seen in 18 cases (80%).

Conclusion: Limbal dermoids in Kashmiri patients have clinical characteristics resembling those described in other parts of the world. Treatment with simple excision and superficial sclerokeratectomy gives satisfactory results.

KEYWORDS : Epibulbar Dermoids, Limbal Dermoids, Goldenhar syndrome.

INTRODUCTION

Epibulbar dermoid is a choristoma, present from birth and composed of fibrous and fatty tissue, covered by keratinized epithelium with few producing a lipoid infiltration of the corneal or scleral stroma at their leading edge. Dermoids are usually located at the limbus, mostly on the inferior temporal limbus[1,2] . They contain many tissues like skin, hair, fat, sweat gland, connective tissue, lacrimal gland, muscle, bone, teeth, cartilage, vascular/neurologic tissue and even brain tissue. Dermoids are classified into three types on the basis of location of the lesion. The most common type involves the limbus. Limbal dermoids mostly present as superficial lesions but deeper ocular structures can also be involved with second type being entirely in the superficial cornea. The third type is rare and affects full thickness of cornea.

Epibulbar dermoid is often seen in Goldenhar syndrome[3] . These patients have a variety of other anomalies, including ear deformities, preauricular appendages, maxillary or mandibular hypoplasia, vertebral deformities, hemifacial microsomia and vertebral anomalies. Dermoids can be associated with coloboma of the eyelids, Duane's retraction syndrome and other ocular motility disorders, lacrimal anomalies, scleral and corneal staphyloma, aniridia, and microphthalmia. Variant of the syndrome like a fibro-epithelial polyp attached to limbal dermoid has also been described[4].Unilateral morning glory syndrome has been found in a patient with multiple limbal dermoids[5] . Associations like SCALP[6,7]and Nager syndrome[8] are reported in the literature. A new grading system keeping in view area of cornea and conjunctiva involved as well as surface shape has been proposed[9]. Reviewing Kashmiri literature on the subject found no case reports or studies done until now. This study was carried out to analyze our experience regarding the clinical presentation and results of simple excision of type one limbal dermoids in Kashmiri population.

MATERIALS AND METHODS:

The present study was carried out in a tertiary care referral hospital.A total of 20 epibulbar dermoids presented to ophthalmology OPD of Government Medical College, Srinagar and were surgically managed from August 2019 to September 2020 after approval from Ethical committee. Written informed consent was taken from all patients. All the patients presenting with Type one limbal dermoid (i.e. present at the limbus) were included in the study. One case of dermoid which was involving the entire cornea was excluded. Adults were operated under local anesthesia and children were operated under general anesthesia. After excision with blade and scissors, conjunctiva was sutured in 8 (40 %) cases where lesion was affecting significant part of conjunctiva. All the operated cases were reviewed in outpatient department on 1st post-operative day, then weekly for three weeks and then every month for 3 months. Follow up ranged from 3 weeks to 3 months (Mean= 6 ± 3.5 weeks).

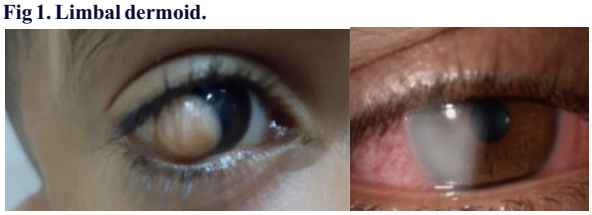
RESULTS:

Out of 20 patients,12(60%) patients were male and 8(40%) were females(M:F=3:2). Age ranged from 4 years to 60 years (Mean 18+ 13.48). 5 (25%) out of 20 patients presented in 1st decade of life, 9 (45%) were in second, 5 (25%) in third decade and one (5%) patient in 6th decade of life. All patients presented due to cosmetic concerns though 12 cases (60 %) had visual deterioration. All the patients had unilateral epibulbar dermoids. In our study all the patients presented with epibulbar dermoid in inferior temporal quadrant. Most (13 cases - 65%) were present at limbus equally involving cornea and sclera. However, 3 cases (15%) extended more on the scleral side while 3 cases (15%) were predominantly on the corneal side. Most (15 cases,75%) were round. 2 (10%) had Goldenhar Syndrome. Postoperatively two(10%) patients had granulation tissue formation and one(5%) had corneal thinning and his post operative steroids were stopped immediately (Table 1).

Table 1: Post operative Complications, n=3 (15%)	
Corneal Thinning	2(10%)
Granulation Tissue Formation	1(5%)

There was variable yellowish to brownish pigmentation in 18 cases(80%). 4 (20%)patients had significant brownish pigmentation. After excision, cornea and conjunctiva healed within 5- 7 days, generally with some scarring and imperfect corneal transparency; however, the appearance was considerably improved.

Fig 1. Limbal dermoid.



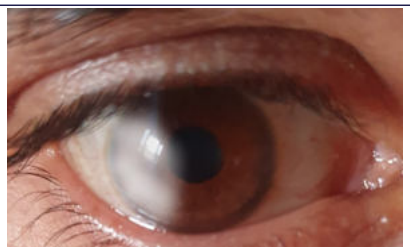


Fig 2. Appearance after excision

DISCUSSION

Limbal dermoids are benign congenital choristomatous tissue i.e. normal tissue derived from germ cells layers, which are abnormally present at a foreign site. There is no racial predisposition and males and females are equally affected. In our study male to female ratio was 3:2. Most common site of presentation of limbal dermoid is inferior temporal quadrant of the corneal limbus. Most of limbal dermoids were equally involving corneal and scleral sides of limbus. Epibulbar dermoids are fleshy dome shaped, with or without keratinized surface or superficial vessels. Hair follicles and cilia are often visible. Multifactorial pattern of inheritance is well-recognized in limbal dermoids associated with ocular and systemic findings such as Goldenhar syndrome.

In our study, patients presented at different age groups. The late presentation in our cases was probably due to socio economic reasons. Nineteen (95%) out of 20 patients presented with superficial epibulbar dermoids while one patient had deep corneal stromal involvement.

Artificial tears and epilation of offending hair offer conservative management of limbal dermoids if there is foreign body sensation. Surgical removal of the lesion can be done in case of cosmetic disfigurement or if it is causing visual disturbance. Surgical treatment is indicated when there is requirement for improving the patient's vision or cosmetic appearance. Surgical removal of the mass which is above the surface of sclera or cornea is the preferred method. It is unnecessary to completely remove the deeper lesion as inadvertent entry inside eyeball is high in case of repeated attempts for complete excision of the lesion. The exposed sclera is covered with the help of undermining surrounding conjunctiva and suturing it over exposed surface. In case of removal of most thickness of cornea or sclera, a patch graft is done to restore thickness of the wall of eyeball. Amniotic membrane may be stitched in a single or multiple layers at the site if there is risk of perforation. The amniotic membrane is sutured to underlying sclera or fibrin-glue adhesive is used to secure the grafted tissue[10,11] . In all of our study cases, superficial sclerokeratectomy was done with the help of crescent blade and scissors for excision of epibulbar dermoid. The defects were closed with simple suturing of the conjunctiva in cases where the epibulbar dermoid was more on scleral side. A patient who had more deep involvement of corneal stroma presented with postoperative thinning of the cornea. His postoperative steroids were stopped immediately. One should remain vigilant and should have a plan to apply patch if there is impending perforation. One younger patient operated at the age of 6 years had formation of postoperative granulation tissue. Sutureless corneo-scleral grafts fixed with fibrin glue are becoming more popular[12]. 0.02% Mitomycin C applied for 2 min following the excision has been claimed to prevent occurrence of pseudo-pterygium following excision[13] . Tattooing of the cornea and a conjunctival graft of the same patient after simple excision has been claimed to produce better postoperative appearance[14,15]. Cosmetic concern remains the main indication for the decision to remove limbal dermoids[16] . Our study has a few limitations which include relatively small number of cases, short follow up (as most patients were satisfied and did not report for follow up) and not using Mitomycin or amniotic membrane so we cannot comment which is a relatively better procedure. However,we achieved satisfactory results by simple surgical removal and conjunctival closure with suture.

CONCLUSION :

Limbal dermoids in Kashmiri patients have clinical characteristics resembling those described in other parts of the globe. Few patients in our study had brownish pigmentation of the lesion, which is not reported earlier to the best of our knowledge. Treatment with simple excision and superficial sclerokeratectomy gives satisfactory result. No significant visual threatening complication was encountered.

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