Corneolimbal Dermoid Excision with Multi-layered Amniotic Membrane Graft (AMG)

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Abstract

Corneolimbal dermoids are rare, congenital, benign ocular surface tumors that can cause cosmetic disfigurement and visual impairment. This case describes an 18-year-old male presenting with a progressively enlarging whitish mass over the inferotemporal limbus of the left eye, causing cosmetic concerns and mild visual disturbance. Surgical excision was performed under general anesthesia, and the resultant stromal defect was managed with a multi-layered amniotic membrane graft (AMG). The AMG was secured with fibrin glue, providing structural support and promoting ocular surface healing. Postoperative follow-up showed significant improvement in ocular appearance, visual acuity, and surface integrity, with no evidence of recurrence. This case highlights the effective role of multilayered AMG in ocular surface reconstruction following dermoid excision, underscoring the importance of meticulous surgical technique and timely intervention for congenital ocular surface lesions.

Keywords: Corneolimbal Dermoid, Amniotic Membrane Graft,Ocular Surface Reconstruction

INTRODUCTION

Corneolimbal dermoids are congenital benign growths that arise from the surface ectoderm. They typically appear as whitish, vascularized masses located at the corneolimbal junction, often affecting vision and ocular aesthetics. These lesions can be associated with other ocular or systemic abnormalities, such as Goldenhar syndrome. Surgical excision is usually indicated when the dermoid significantly impacts vision or causes cosmetic concerns. This case report describes the presentation, surgical intervention, and postoperative outcomes of a patient with a corneolimbal dermoid.

CASE PRESENTATION

A 18-year-old young boy presented to the ophthalmology clinic with a complaint of a whitish mass over the inferotemporal aspect of her left cornea. The mass had been present since birth but had progressively increased in size over the past year, causing cosmetic distress and mild visual disturbance. The patient had no significant medical or family history of ocular conditions. On examination, the visual acuity in the left eye was 20/40, while the right eye was 20/20. Slit-lamp examination revealed a whitish, elevated mass measuring approximately 5×5 mm^2 in diameter, located at the inferotemporal corneolimbal junction with extension into the sclera of the right eye. The mass was non-tender, and there was no evidence of inflammation or infection. The rest of the anterior and posterior segment examinations were unremarkable. Anterior segment optical coherence tomography showed superficial 80 um involvement of the cornea. The patient was unhappy with cosmetic appearance of the eyes and wanted surgical excision for it. Given the size of the dermoid and its impact on vision and appearance, the patient was planned for corneolimbal dermoid excision with multi-layered amniotic membrane grafting.

SURGICAL EXCISION

The procedure was performed under general anesthesia. The surgical steps were as follows:

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Excision of the Dermoid:

- Initially a traction suture was applied at the inferior rectus to expose the mass in the visual axis
- A meticulous dissection was performed to excise the dermoid mass from the corneolimbal junction with crescent blade and vannas scissors were used for lamellar dissection
- Care was taken to remove the entire lesion, including the underlying tissue, to prevent recurrence.
- Slow and gentle dissection was done layer by layer to prevent perforation and dellen formation

Multi-layered Amniotic Membrane Graft (AMG):

- Following the excision, a defect was noted at the site of the dermoid, extending into the corneal stroma.
- To promote healing and provide structural support, a multi-layered AMG was prepared.
- Multiple layers of amniotic membrane were placed over the defect, with each layer secured using fibrin glue.
- The AMG was trimmed to fit the defect precisely and ensure a smooth surface.

POSTOPERATIVE CARE

The patient was prescribed a regimen of topical antibiotics, corticosteroids, and lubricants to prevent infection and promote healing. Regular follow-up visits were scheduled to monitor the healing process and detect any signs of complications.

OUTCOME AND FOLLOW-UP

At the first postoperative follow-up at 7 days, the patient reported significant improvement in cosmetic appearance and comfort. Visual acuity in the right eye improved to 20/30. The slit-lamp examination showed a well-healed AMG with no signs of inflammation or infection. The corneal surface was smooth, and there was no recurrence of the dermoid.

At the 3 weeks follow-up, the patient maintained good visual acuity with stable ocular surface integrity. The amniotic membrane graft had integrated well with the surrounding tissue, and there was no evidence of recurrence.

DISCUSSION

- Corneolimbal dermoids can cause significant visual and cosmetic issues, especially when they are large or vascularized. Surgical excision is the treatment of choice for symptomatic or cosmetically concerning dermoids. The use of AMG in ocular surface reconstruction has been well-documented for its anti-inflammatory, anti-scarring, and healing-promoting properties.[1,2]
- In this case, the application of a multilayered AMG provided structural support and facilitated rapid epithelialization of the corneal defect. The successful outcome underscores the importance of meticulous surgical technique and appropriate use of AMG in managing corneolimbal dermoids.

CONCLUSION

The excision of a corneolimbal dermoid followed by multi-layered AMG is an effective surgical approach to restore ocular surface integrity and improve visual and cosmetic outcomes. This case highlights the importance

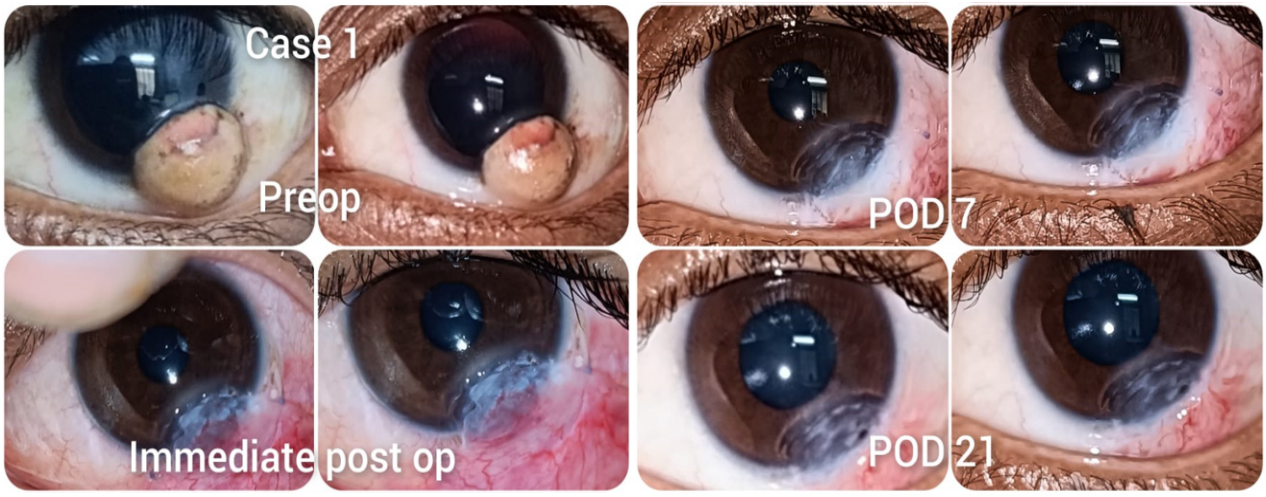

Figure 1: Pre-Operative and Immediate Post-Operative

of early intervention and the role of advanced surgical techniques in the management of congenital ocular surface lesions.

FINANCIAL SUPPORT AND SPONSORSHIP

Nil.

CONFLICTS OF INTEREST

There are no conflicts of interest.

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How to cite this article: Gurnani B. Corneolimbal Dermoid Excision with Multi-layered Amniotic Membrane Graft (AMG): Ocul Res J 2024;1(2): 29-31.

Received: 14/05/2024 **Accepted:** 27/05/2024