



MANAGEMENT OF OCULAR SURFACE SQUAMOUS NEOPLASIA: A CASE REPORT

Dr. Andrea Jose

Junior resident, Department of Ophthalmology, Justice K.S. Hegde Charitable Hospital, Nithyanandanagar, Deralakatte, Mangaluru-575018

Dr. Vijay Pai*

HOD, Department of Ophthalmology, Justice K.S. Hegde Charitable Hospital, Nithyanandanagar, Deralakatte, Mangaluru-575018 *Corresponding Author

ABSTRACT The term Ocular surface squamous neoplasia (OSSN) describes a broad spectrum of lesions of the conjunctiva and cornea, ranging from mild dysplasia to invasive squamous cell carcinoma. It is uncommon but has various clinical appearances and has the potential to cause significant ocular and even systemic morbidity. In the present article, we report a case of OSSN in a 52 year old male who present with foreign body sensation and growth in the left eye. He underwent excisional biopsy with cryotherapy and amniotic membrane transplantation. Histopathological analysis revealed carcinoma in situ with tumour free margins.

KEYWORDS : Amniotic membrane, Ocular surface squamous neoplasia, OSSN

Introduction

Ocular surface squamous neoplasia (OSSN) is an umbrella term that is used to describe cancerous epithelial lesions of the cornea and conjunctiva.⁽¹⁾

It is a broad term that includes conjunctival intraepithelial neoplastic lesions (CIN) and preinvasive squamous cell carcinoma (SCC) of conjunctiva and cornea⁽¹⁾

Prevalence of OSSN varies from 0.03-1.9 per million population depending upon the geographic location. (2) It is usually seen in older males and has a multifactorial pathophysiology. In addition, the other risk factors linked to OSSN include ultraviolet light, cigarette smoking, human papilloma virus and human immunodeficiency virus. Ocular surface squamous neoplasia can be managed surgically in the form of excisional biopsy with resection of 3-4 mm of tumour free margin. Adjuvant therapeutic measures include cryotherapy, alcohol epitheliectomy, radiation and mitomycin C and interferon are also used. Surgical excision of OSSN can result in wide defects that may be difficult to close primarily and may require reconstruction with transpositional conjunctival flaps, conjunctival grafts from the other eye, amniotic membrane grafts or oral mucosal grafts.

The purpose of this case report is to evaluate the efficacy of amniotic membrane for ocular surface reconstruction in the management of ocular surface squamous neoplasia (OSSN).

Case Report

A 52 year old male patient presented with diminished vision and foreign body sensation and painless progressive growth in the left eye since four years.

On examination best corrected visual acuity was counting finger 1m in the left eye. Slit lamp biomicroscopy showed large papilliform lesion of the superior bulbar conjunctiva encroaching into the cornea (9.5mm x 5mm) of the left eye. (Fig.1, 2) Dilated episcleral vessels were noted. Regional lymph nodes were not enlarged. Left eye ultrasonography showed no abnormality. Blood investigations were normal.

He underwent excision of the lesion with a 3mm tumour free margin and amniotic membrane transplantation.

The procedure was performed under peribulbar anesthesia using a mixture of 2% lidocaine with 0.75% bupivacaine.

The edges of the tumour are marked with a marking pen with 3mm clearance margin. First the corneal part of the lesion was addressed. Absolute alcohol epitheliectomy was performed. The devitalized epithelium was then scrolled over the lesion toward the limbus with a crescent blade, taking 3 mm clearance margin similar to the conjunctiva.

The conjunctival part of the tumour is then excised along the marked margins using Westcott scissors. The specimen is then placed on a

piece of paper outlining its orientation and sent for histopathological analysis after placing it in 10% formalin. The scleral bed is scraped and hemostasis is achieved using bipolar wet field cautery. Cryotherapy is then applied to the limbus and conjunctival edges in a double freeze thaw cycle. The exposed sclera is then covered with amniotic membrane and the conjunctival defect is closed. Preserved amniotic membrane is peeled from its carrier sheet and placed, basement membrane side up, over the defect and the entire surface of the cornea. A few drops of saline were applied to wet the membrane and the membrane was smoothed out over the ocular surface.

The amniotic membrane over the conjunctival defect was then sutured to the surrounding conjunctiva with 8-0 vicryl interrupted sutures and that placed over the cornea was secured with four interrupted circumferentially placed 10-0 nylon sutures. A bandage contact lens was then applied.

Postoperatively patient was started on topical antibiotic-steroids and preservative-free tear substitutes. Topical antibiotic steroids were used four times a day for a week and then tapered over a period of one month. The nylon sutures were removed at postoperative week⁴.

On histopathological evaluation, he was found to have squamous cell carcinoma in situ with tumour free margins.

During each follow up visit, slit lamp biomicroscopy was performed, noting the integrity, smoothness and wetting properties of the ocular surface and signs of any complications and recurrences.

The corneal surface showed complete epithelisation within a few weeks and no complications were seen.

The initially semi transparent amniotic membrane became more translucent and biomicroscopically invisible within three months after surgery. (Fig.5, 6)

Discussion

The use of amnion, in ophthalmology, was first reported by de Roth for treatment of conjunctival tissue loss. (5) Amniotic membrane is currently being used for a continuously widening spectrum of ophthalmic indications.⁽³⁾

Amniotic membrane has a unique combination of properties, including the facilitation of migration of epithelial cells, the reinforcement of basal cellular adhesion and the encouragement of epithelial differentiation. (3) It also serves as an antiangiogenic, anti-inflammatory, and antifibrotic agent with the help of its structural and biochemical composition.⁽⁶⁾

The advantages of amniotic membrane transplantation (AMT) over conjunctival autografts and mucous membrane grafts include superior postoperative cosmesis, absence of donor site morbidity, and ability to clinically monitor tumour recurrence.⁽³⁾

Tseng et al reported that preserved amniotic membrane could be considered as suitable alternative for conjunctival surface reconstruction. (4) Multiple reports of AMT following excision of various conjunctival tumours have been published with high success rates with few complications. (6, 7, 8, 9, 10, 11) In a recent study by Palamar et al amniotic membrane transplantation was found to be a safe and effective technique for ocular surface reconstruction in the surgical management of OSSN with minimal complications in the long term. (11)

In conclusion, for large conjunctival tumours amniotic membrane transplantation is a safe and effective technique for reconstruction of the ocular surface.

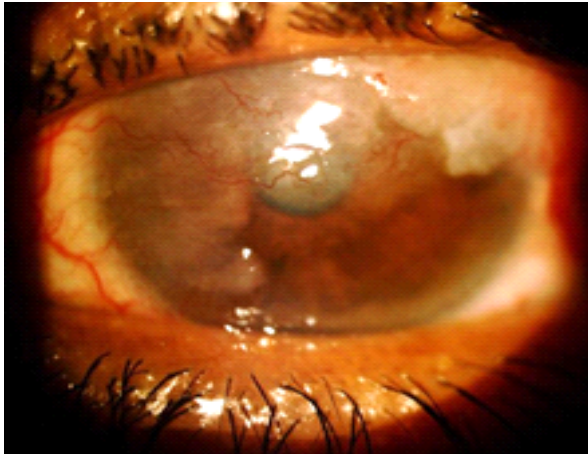


Fig.1. Preoperative appearance showing OSSN with dilated feeder vessels

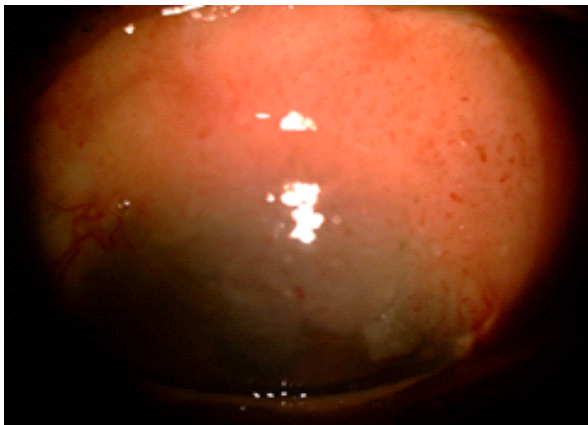


Fig.2. Preoperative appearance of OSSN

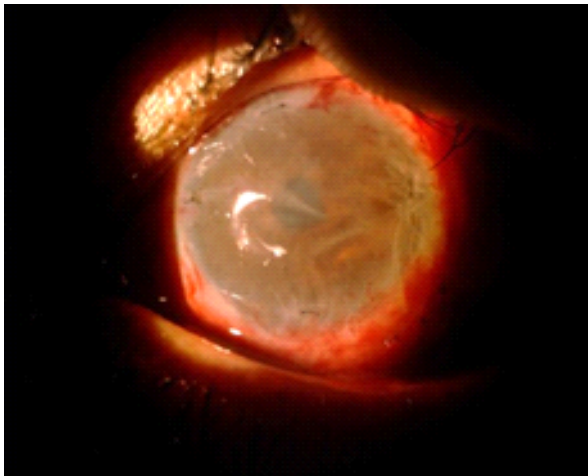


Fig.3. Postoperative day 1 following excisional biopsy with amniotic membrane transplantation

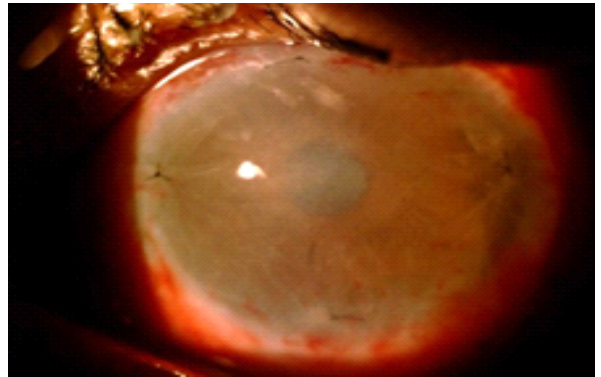


Fig.4 Postoperative week one with BCL in place

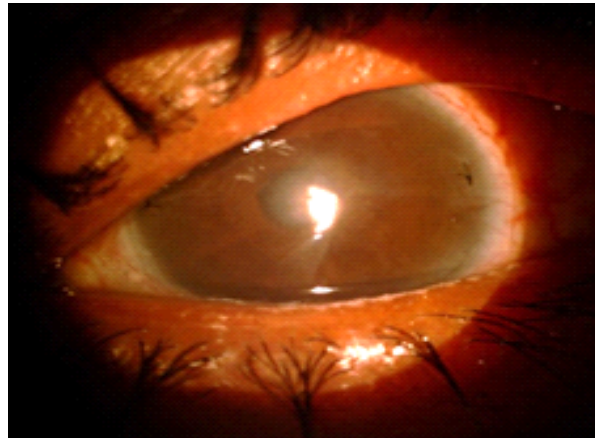


Fig.5 Postoperative month one



Fig.6 Fig.5 One month post surgery

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