

Management of Recurrent Pterygium - A Case Report

Case Report

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Abstract

Pterygium is an uncontrolled fibrovascular overgrowth of the conjunctiva of the eye seen with a higher prevalence at areas near the equator. It has a high rate of recurrence which are usually more aggressive and difficult to treat. Several treatment modalities have been proposed, each having its own limitations. We report a case of recurrent pterygium which was treated with pterygium excision, intraoperative mitomycin c application and limbal conjunctiva graft taken from the same eye. No sign of recurrence was seen for follow up period of 1 year.

Keywords: Pterygium; Recurrent; Combined Treatment.

Abbreviations: 5-FU: 5-Fluorouracil; MMC: Mitomycin C.

Introduction

Pterygium is a fibrovascular tissue overgrowth of the conjunctiva that overlays the sclera and involves the corneal surface. It is more prevalent in areas near the equator. The prevalence of pterygium has been reported to vary in different parts of the world with 2.83% in Australia [1], 9.84% in China [2] and 13% as reported in rural central India [3]. Susceptibility factors include environmental influences such as ultraviolet exposure, dusty dry climate as well as genetic factors involving abnormalities in the DNA repair system [4]. They can reduce vision when involving visual axis, induce astigmatism and can also lead to diplopia and restricted ocular movements. Multiple surgical techniques have been developed. Bare sclera excision is a simple and oldest method but has a very high rate of recurrence (30%-80%) [5]. To overcome this limitation other procedures such as tissue grafting, such as with the conjunctival autograft (recurrence rate 0-15%) [2], or amniotic membrane transplants, and use of adjuvants such as 5-fluorouracil (5-FU), mitomycin C (MMC), have been shown to be effective in preventing recurrences [6].

Most of the recurrences occur usually within first year [7]. A recurrence was defined as fibrovascular tissue crossing the corneal limbus onto clear cornea in the area of previous pterygi-

um excision. Recurrent pterygia after primary surgery are usually more aggressive and difficult to treat as it is accompanied by more conjunctival inflammation and scarring.

Case Report

A 40 year old female patient presented to our outpatient department at Dr. Radhakrishnan Government medical College in Himachal Pradesh, North India for eye evaluation. The best corrected visual acuity was 6/6 in right eye and 6/36 in left eye. She had a history of pterygium excision surgery 1 year back in the left eye. On examination, she had a recurrent pterygium in the left eye measuring 3 mm into the cornea.

Dilated fundus examination and intraocular pressure in both the eyes was within normal limits. Informed consent was obtained and the patient was scheduled for pterygium excision with limbal conjunctival graft along with intra operative mitomycin c (MMC). Surgery was performed under peribulbar anaesthesia. The pterygium head and body was dissected and excised. Subconjunctival pterygial tissue was excised and intraoperative MMC soaked sponges (0.02%) was applied to the bare sclera for 2 minutes. The site of application was then thoroughly irrigated with at least 100 ml of balanced salt solution. The area of bare sclera was

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measured after pterygium excision. A free conjunctival graft was harvested from the superior limbal region of dimensions approximately 1 mm larger than the recipient bed. The inferior margin of the graft was dissected 1mm towards the cornea to include part of the superficial limbus (Figure 1). The graft was transferred to the bare sclera epithelial side up while maintaining the limbal to limbal orientation. The four corners of the graft were then secured using 9-0 nylon suture (Figure 2). Postoperatively patient was put on eye drops Loteprednol 0.5% , lubricant and antibiotic eye ointment for 6 weeks. All sutures were removed 4 weeks after surgery (Figure 3). Mild graft edema was seen in the post operative period that later subsided with topical steroids. Her best-corrected visual acuity post surgery was 6/12 at 3 months. Corneal astigmatism was 1.75D before the surgery and 0.75 D after the surgery. Patient was followed up for 1 year and no recurrence was seen.

Discussion

Pathogenesis of pterygium formation is said to be multifactorial. A healthy limbus is said to act as a barrier to conjunctival over-

growth. Exposure to ultraviolet rays is said to play an important role by causing damage to limbal stem cells. The limbal corneal conjunctival epithelial barrier is disrupted and the cornea is actively conjunctivalized by tissue [8]. Recurrence has been proposed to occur due to aggressive wound healing seen in younger patients and absence of healthy conjunctival epithelium. Studies have shown that surgical technique for primary pterygium, use of adjuvants and morphological characteristics such as larger size and increased vascularity also determine recurrence [9]. Other mechanisms such as re proliferation of previously unexcised pterygial tissue, induced following an epithelial defect seen in bare sclera method or re growth of the remnant pterygial tissue have also been proposed [10, 11].

Treatment options for recurrent pterygium include pterygium excision with conjunctival autograft, conjunctivolimbal autograft or amniotic membrane with or without adjuvant such as mitomycin c [12]. The recurrence rates reported with these combined procedures are lower (0%-20%) than they are with a single procedure [13].

Figure 1. Intraoperative Photograph- A Limbal - Conjunctival Graft Dissected.



Figure 2. Intraoperative Photograph - Free Graft Sutured to the Sclera after Pterygium Excision.

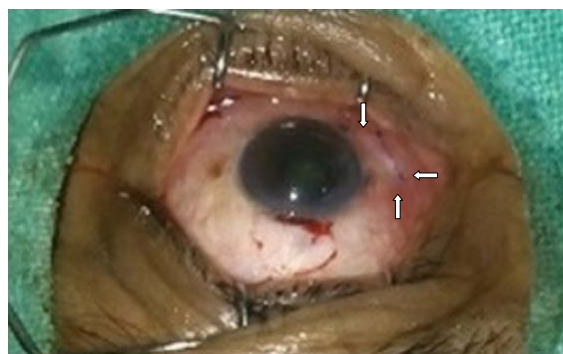


Figure 3. Postoperative Photograph - at 1 Month After Suture Removal.



Recurrent pterygium surgery carries increased risk of intra and post- complications.

In our patient presenting with recurrent pterygium we did a combination procedure of conjunctival limbal graft along with intra-operative mitomycin c application to the graft bed after pterygium excision. We used low dose mitomycin c for 2 minutes only. This procedure has been done previously with favourable results [14, 15].

Complications like pannus formation, pseudopterygium at the donor site after limbal autografts have been reported. Mitomycin use has been linked to scleral thinning, corneal edema, secondary glaucoma, corneal perforation, persistent epithelial defects, endophthalmitis. Complications like graft oedema, chemosis and wound dehiscence can occur with conjunctival graft [16].

More recently, anti-VEGF treatment agents such as bevacizumab and ranibizumab are also been evaluated in primary and recurrent pterygium [17].

Conclusion

A combination of two procedures, conjunctival limbal autografting and adjunctive mitomycin c appears to be an effective and safe treatment for recurrent pterygium however more cases and longer follow up is required for definite conclusion.

Declaration of Patient Consent

The authors declare that they have obtained all appropriate patient consent forms. In the form the patients have give their consent for their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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