Original Article

Ophthalmology and Allied Sciences
Volume 3 Number 2, July - December 2017
DOI: http://dx.doi.org/10.21088/oas.2454.7816.3217.32

Pterygium Excision with ConjunctivalAutograft Using Autologous Blood, ARevoloutionary Advancement for Effective Pterygium Management

Santosh V. Patil

Associate Professor, Department of Opthalmology, Mahadevappa Rampure Medical College, Kalaburagi, Karnataka 585105, India.

Abstract

Introduction: Conjunctivalautograft has become the most preferred standard for management of primary pterygium and double pterygium. Securing the autograft over the bed is an important part of surgery and eventually determines the outcome of surgery. *Methodology:* We reviewed the case records of 100 patients from January 2016 to 2017 who underwent pterygium excision with conjunctivalautograft at our institute. Surgery was performed by a single surgeon for primary or double-headed pterygium. *Results:* All cases were properly assessed and followed up at every visit. The average age of study population was 45 years (18 to 65). 75% of patients were less than 40 years of age. Male to female ratio was 1:1. All the patients had an uneventful surgery. The patients were followed up on 5th day, 15th day, 1-month, 3-months, 6-months. *Conclusion:* We strongly recommend the conjunctivallimbalautograft with autologous blood for ensuring low recurrence and safety.

Keywords: Pterygium; Conjunctivalautograft; Pterygium Excision.

Introduction

Pterygium is a triangular, fibrovascular connective tissue over growth of the bulbar conjunctiva onto the cornea. it is usually found in the interpalpebral fissure commonly on the nasal, sometimes on the temporal side of cornea. Etiology is ultraviolet light induced damage to limbal stem cell barrier. India being a tropical country with lot of sunlight exposure, dust, wind, pterygium is very common in India. The definitive treatment is surgery if it is causing visual disturbance or for cosmetic purpose. Simple exision has a risk of recurrence as high as 40%-80%.

Various improvement in surgical techniques and antimitotic drugs have been reported to reduce the recurrence rate. The recurrence rate ofpterygium excision with conjunctivalautograft is just 4% TO 6%, for mitomycin-C.6% TO 8% [1]. Conjunctivalauto graft has become the most preferred standard for management of primary pterygium and double pterygium. Securing the autograft over the bed is an important part of surgery and eventually determines the outcome of surgery [2].

Various surgeons have used sutures, Fibrin glue, autologous blood to secure the graft.

Suturing can be time consuming, can cause postoperative irritation, inflammation and suture granuloma. Fibrin glue is very expensive, has the potential to cause anaphylaxis and rarely can transmit viral disease. Autologous blood as a tissue adhesive is a simple, safe, cheap and effective alternative to fibrin glue, but has the rare disadvantage of graft dehiscence, graft edema, graft retraction, graft antiflexion, pyogenic granuloma and lost graft [3,4].

Aim

Aim of this study is to assess the safety and efficacy of autologous blood to secure the conjunctival-autograft after pterygium excision and to know the recurrence rate.

Corresponding Author: Santosh V. Patil
Associate Professor, Department of Opthalmology, Mahadevappa Rampure Medical College, Kalaburagi, Karnataka 585105, India.
E-mail: sanshrut30@gmail.com

Received on 21.09.2017, **Accepted on** 07.10.2017

© Red Flower Publication Pvt. Ltd.

Materials and Methods

We reviewed the case records of 100 patients from January 2016 to 2017 who underwent pterygium excision with conjunctivalautograft at our institute. Surgery was performed by a single surgeon for primary or double-headed pterygium. All patients' data are depicted in Table 1. All surgeries were done under peribulbar anaesthesia.

Surgical Technique

Lid speculum was inserted. A small nick was made at the limbal conjunctiva. The conjunctiva over the body of pterygium was undermined, and the body of pterygium with involved tenons capsule were excised. The head of pterygium was stripped off from the surface of cornea. With tookes knife the limbal area was polished. The size of conjunctival graft required to resurface, the exposed scleral bed is determined using calipers. The equivalent area in upper temporal conjunctiva was marked. BSS was injected under the conjunctiva. Dissection began from fornix to limbus. The graft was oversized by 1mm. Thin graft was flipped over the cornea. The flap was excised taking care to include the limbal tissue.

Small Conjunctival capillaries were ruptured using 26G needle to induce fresh oozing of autoblood, taking care not to damage the sclera. The graft was then rotated immediately and moved onto the scleral bed maintaining limbus to limbus orientation.

The graft and the original conjunctiva at the inferior limbus were held with colibre forceps and with a Macphersons forceps or iris repositor the graft was anchored to the bed using a simultaneous sweeping and pressing movements towards the fornix and caruncle. The slightly oversized graft was pushed beneath the normal conjunctiva. The eye was patched for 12 hours. Post-Operatively, the patients were given topical antibiotic and topical steroid eye drops every 2 hourly and tapered over 5-6 weeks.

Results

All cases were properly assessed and followed up at every visit. The average age of study population was 45 years (18 to 65). 75% of patients were less than 40 years of age. Male to female ratio was 1:1. All the patients had an uneventful surgery. The patients were followed up on 5th day, 15th day, 1-month, 3-months, 6-months. 90% eyes had a follow-up of more than 6 months. In 5-eye having had double head pterygium, the graft was adequately divided between the two sides. 70 eyes had sub-conjunctiva hemorrhage under graft, which subsided after 2-weeks, graft edema was seen in 90 eyes which subsided on its own. Graft dehiscence on the non-limbus aspect seen in 5-cases, 1 case had small anti-flexion of graft at the superior limbus, 3-eyes had granuloma at the superior bulbar area after one and half months which subsided with topical flurometholone. None of the eyes had loss of graft. 2-eyes had graft encroachment by 0.5 mm over the cornea at nasal limbus. None of the eyes had recurrence at 6-months follow-up. Other pre-operative and post-operative data of all cases are in Table 1 and 2.

Table 1: Clinical data of patient

Age	**<40 years (75% eyes)**
Gender	
Male	50
Female	50
Eye involved	
Right eye	60
Left eye	40
Site:	
Nasal	95
Temporal	0
Both	5
Size of pterygium	
Crossing limbus	60
Midway between limbus and pupil	20
Reaching pupil	15
Crossing pupil	5
Fleshiness	
Mild	20
Moderate	20
Severe	60
Indications for surgery	
DOV	60
Cosmesis	20
Inflammation	20

Table 2: Postoperative outcome on vision and astigmatism and cosmesis

Visual acuity	
Same	60
Increased by 2-lines	20
Increased by > 2-lines	20
Decrease in astigmatism (with the rule)	50 eyes (0.5 D – 4.5 D)Avg. 2D
Cosmesis	
Satisfactory patient	90%
Unsatisfactory patients	5% because of irritation and pricking
Nebulo-macular corneal opacity	5%

Discussion

Pterygium excision with conjunctivalautograft has become a standard procedure as it has least recurrence rate. Traditional sutures and fibrin glue have major disadvantages. Trend is towards making the surgery safer, quicker and effective. Autologous blood is naturally available during surgery and there is no associated risk of disease transmission and anaphylaxis [5,6].

It is a very good alternative. Few important modifications that helped in preventing recurrence of pterygium and to hold the graft in place are:

1. Inclusion of limbal tissue in graft.
2. Removal of all sub-conjunctivalpterygium tissue
3. slightly oversized, thin, graft without button holeing
4. Inducing fresh bleeding, over the bed by puncturing the small conjunctival capillaries.
5. Sweeping and pressing movements immediately over the graft to anchor it to bed.

Conclusion

Autoblood technique is very simple, safe and effective procedure for graft fixation. The procedure is very easy to learn and does not require extra surgical skill or equipment. It is non time consuming. We strongly recommend the conjunctival limbal autograft with autologous blood for ensuring low recurrence and safety.

References

1. Srinivas K Rao, T.Lehha, G.Sita Lakshmi, PremaPadmanabhan. Conjunctivallimbalautografts for primary and recurrent pterygium: Technique and results. IJO, 1998;46:2039.
2. Koch JM, Mellin JB, Neauble TN. The pterygium-autologous conjunctiva-Limbus Transplantation as treatment. Ophthalmology, 1992;89:143-46.
3. Koranyi et al. Cut and paste: A no suture, small incision approach to pterygium surgery. BJO 2004; 88:911-4.
4. Harvey S. VY, Johnann Michael G.Reyes, John DG, Flores, Ruben Lim-Bon-Siong. Comparison of fibrin glue and sutures for attaching conjunctivalautografts after pterygium excision. Ophthalmology, 2005; 112:667-71.
5. Singh Punit K, Singh Subhadra, Vyas Chandrashekhar, Singh Manju. conjunctival autografting without fibrin glue or sutures for pterygium surgery. Cornea. 2013; 32:104-7.
6. Devit D, Athanasidas I, Sharma A, Moore J. Sutureless and glue free conjunctivalautografting in pterygium surgery: A case series. Eye 2010;24:1474-7.