IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 15, Issue 8 Ver. II (August. 2016), PP 31-33
www.iosrjournals.org

Case Series of Pterygium Excision and Conjunctival Autograft - No Suture, No Glue Technique and Review of Literature

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Abstract
Background: *To evaluate the efficacy of blood clot fixation of the conjunctival autograft after pterygium excision in primary and recurrent pterygium.*
Objective: *To establish a simple, cost effective, less painful and less time consuming technique of conjunctival autograft at a tertiary govt .hospital ,Department of Ophthalmology, Guntur, AP.*
Design: *Prospective analysis of hundred patients with primary and recurrent pterygium operated between October 2015-March 2016, recurrence and complications analyzed.*
Materials And Methods: *A total of 100 eyes from 100 patients with primary or recurrent nasal pterygium in age group 40-65 years were recruited. All eyes underwent pterygium excision followed by conjunctival autografting. Blood oozed during pterygium excision was used as tissue adhesive to secure conjunctival autograft. The mean duration of follow up is between 12-14 weeks with good primary out come with no recurrence was noted in all cases .*
Results: *After surgery, graft loss occured in 2 eyes(2%) and chemosis in 4eyes(4%)*
Conclusion: *Blood oozed during pterygium excision may provide novel approach for securing conjunctival autograft. Conjunctival autograft without glue or sutures appears to be an effective modality for primary and recurrent pterygium with no extra cost and full benifits to the patients.*
Keywords: *Pterygium, Conjunctival autograft, no glue, no suture, auto blood fibrin clot ,recurrence.*

I. Introduction

The term pterygium comes from the ancient Greek word (pteryx) = wing and (gion) = fin. Pterygium is characterized by a triangular portion of the bulbar conjunctiva encroaching onto the cornea. It is believed that pterygium is growth disorder characterized by conjunctivalisation of the cornea due to localized ultraviolet rays stimulated damage to the limbal stem cells. Destructive pterygial fibroblasts are also responsible for corneal invasion

Pterygium is more often seen in men than in women. This is attributed to the fact that males are exposed to dust and environmental irritants more than women. Usually seen within the interpalpebral fissure and most often on the nasal side . The nasal affinity of the pterygium is attributed to the following factors. Sparseness of the subconjunctival tissue in the temporal region , exposed to a lesser extent to UV radiation due to greater amount of bowing of outer 2/3 of the upper lids. The prevalence rate of primary pterygium varies from 0.7 to 3.1% in various populations around the world. Patient may have foreign body sensation, discomfort, congestion (redness), irritation, grittiness, blurring of vision either because of induced astigmatism or obscuring visual axis.

Indications for surgery include cosmetic disfigurement, recurrent inflammation, interference with contact lens wear ,motility restriction and rarely, changes suggestive of neoplasia. But patient should be explained that there is fairly high risk of recurrence which may be more unsightly. To prevent recurrence conjunctival auto grafting either by use of fibrin glue or sutures is being used. In this study the possibility of blood ooze during the pterygium excision used as a tissue adhesive to secure the conjunctival autograft was studied.

II. Method

All the cases had informed written consent and hospital ethical committee approval for study.

Number of eyes	100
Primary pterygium	94
Recurrent pterygium	6
Male	59
Female	41
Mean age	50+/-2 yrs
Mean surgical time	20+/-0.9 min.

Follow up	12-14 weeks min 12 weeks

III. Surgial Technique

All patients were anaesthetized with a peribulbar block and then eyes were painted and draped. The fibrotic tissue was extensively dissected to expose the sclera and corneal stroma. The subconjuctival fibrovascular tissue, including tenon's capsule, were thoroughly removed to provide clean scleral bed. The size of the defect is measured with calipers. Around 0.5mm more than the measured defect marking is done on supero temporal conjunctiva. A thin film of blood clot is allowed to form over the bare sclera. Any active bleeding is stopped by direct tamponade. A thin tenon free conjunctival auto graft with limbal stem cell is excised. Auto graft is slided over the cornea, orientation is kept limbus to limbus. It is slipped over with draping motion to ensure epithelial side is up. After placement of graft over the bare sclera with oozed blood during excision gently press for 3-5 minutes. The stabilization of graft is tested centrally and on each free edge to ensure firm adherence to sclera.At the end of surgery carefully eye speculum was removed without distorting graft.Eye is patched for 12-24 hours.

Routine post op instructions like tapered 1% Prednisolone acetate eye drops 4-6 time daily for3-4 weeks, Moxifloxacin eye drops for 7 days .Lubricating eye drops for 6-8 weeks are used .Patients follow up for 1st day ,1 week,4 weeks and 12 weeks.

Results

Primary outcome		
	Graft dislodgement	Nil
	Recurrence	Nil
Secondary out come		
	Post up	Pain minimum
	cosmesis	Good
Minor complications		
	Subconjunctival haemorrhage	8 cases(8%)
	Graft recession	5 cases(5%)
	Graft edema	4 cases(4%)

IV. Discussion

Pterygium surgery should ideally have a low or no recurrence, minimal complications and be cosmetically acceptable. Current surgical methods to prevent pterygium recurrence include conjunctival autograft, and limbal– conjunctival transplant, conjunctival flap and conjunctival rotation autograft surgery, amniotic membrane transplant, cultivated conjunctival transplant, lamellar keratoplasty, and the use of fibrin glue. All of these techniques involve the use of sutures or fibrin glue and are therefore vulnerable to associated complications.

Conjunctival autograft was popularized by Kenyon et al. The most common method of autograft fixation is suturing, with the drawbacks of prolonged operating time, postoperative discomfort, suture abscesses, granuloma formation and recurrence due to suture irritation.

The presence of sutures may lead to prolonged wound healing and fibrosis.

Although generally considered safe, fibrin glues are currently manufactured from human plasma and therefore carry theoretical risk of transmissible diseases. Use of patients own autologous blood was based on clotting mechanism of blood coagulation, but should be used before fibrinolysis occurs as blood clots naturally, was developed with all the drawbacks eliminated.

V. Conclusions

Autologous fibrin in blood is a useful alternative method for graft fixation in pterygium surgery,we found the new procedure of autografting free of any untoward complications.

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