

Clinical study of sutureless and glue free conjunctival autograft in pterygium surgery

Satish Desai^{1*}, Amol T Wanjari²

¹Assistant Professor, PG. Student, Department of Ophthalmology, Government Medical College, Miraj, Maharashtra, INDIA.

Email: drsatishtonly@rediffmail.com

Abstract

In this paper we study outcome of sutureless and glue free conjunctival autograft in pterygium surgery. To study pattern of astigmatism induced due to primary pterygium. To study the different complications after sutureless and glue free conjunctival autograft in pterygium surgery. To study change in astigmatism after pterygium surgery by sutureless and glue free conjunctival autograft.

Keywords: pterygium surgery.

*Address for Correspondence:

Dr. Satish Desai, Assistant Professor, Department of Ophthalmology, Government Medical College, Miraj, Maharashtra, INDIA.

Email: drsatishtonly@rediffmail.com

Received Date: 16/11/2015 Revised Date: 29/12/2015 Accepted Date: 24/01/2016

Access this article online

Quick Response Code:	Website: www.statperson.com
	Volume 6 Issue 1

INTRODUCTION

In 1985, Kenyon *et al* proposed that a conjunctival autograft of the bare sclera could be used in treatment of recurrent and advanced pterygium. Recent reports favour the use of fibrin glue above sutures with improved comfort, decreased surgical time, reduced complication and recurrence rates have been reported. Suture-related complications include infection, granuloma formation, and chronic inflammation, whereas plasma-derived fibrin glue has the potential risk of prion disease transmission and anaphylaxis in susceptible individuals. Plasma-derived products such as fibrin glue may produce possible hypersensitivity reactions whereas the risk of viral transmission remains. We study sutureless and glue free [SGF] conjunctival auto graft of achieving conjunctival autograft adherence during pterygium surgery avoiding potential complications associated with the use of fibrin glue or sutures.

- Pterygium is a elastotic degeneration of subconjunctival tissue. It proliferates as

vascularized granulation tissue. Prevalence rate - 0.3% to 29% in different parts of the world. Treatment of choice – Surgical Removal.

MATERIAL AND METHODS

After obtaining the approval of the Institutional Ethics Committee (Govt Medical College, Miraj.) and written consent from the patients, 20 patients will be included.

Inclusion Criteria

1. Patient with primary nasal pterygium i.e. no previous operation for excision of pterygium
2. Patient with no other ocular disorder

Exclusion Criteria

1. Patients with previous history of pterygium surgery.
2. Patient with blood disorder -like coagulation factor deficiency.
3. Any other ocular disorder like blepharitis, dry eye.

Proforma of the study

Written consent of all patients included in the study was taken after fully explaining the procedure and purpose of the study to the patients. A detailed proforma is devised containing all essential details for each individual. The patients were been asked about their name, age, sex, occupation and address. A complete ophthalmic history was taken which included complaints of growth of fleshy mass-its onset, duration and progress, associated with any other ocular complaints like diminision of vision, foreign body sensations, redness, pain, watering of eyes, discharge from eyes, photophobia, history of injury and

past history. Before surgery, a comprehensive clinical examination was done which included

- Snellen visual acuity measurement
- Applanation tonometry
- Slit-lamp examination
- Keratometry
- Anterior segment photography
- Routine investigation.

A record was made of the intraoperative complications occurring during the surgery and their management. The patients were examined on slit lamp on the 1st postoperative day. The follow-up of the patients was done after 2week, at 1 month, at 6month. On each follow-up patients complaints, patients satisfaction level, visual acuity, slit lamp examination and anterior segment photography was done.

MATERIALS: Snellen's vision chart, Slit lamp, Applanation tonometer, Keratometer

Type of Study: A Prospective, Interventional

SURGICAL PROCEDURE

Sample Size: 20 eyes with primary progressive nasal pterygium

Duration of study: August 2012-July 2013.

Place of study: Government Medical college and Hospital, Western Maharashtra.

BEFORE SURGERY

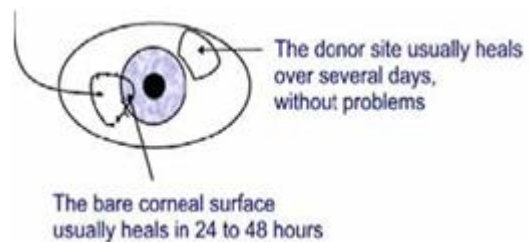
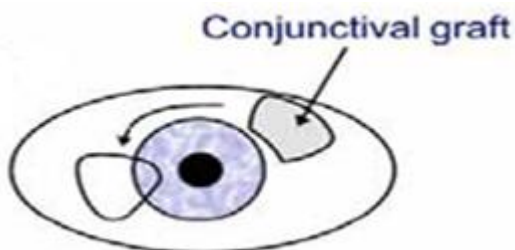
- Medical and ocular history
- Snellen visual acuity measurement
- Slit lamp examination
- Anterior segment photography
- Keratometry.
- All the patients were informed about study design, procedure and written informed consent was obtained from all the patients.
- Type of Surgery Pterygium excision with sutureless and glue free conjunctival autografting was performed in all patients.



Figure 1: Pterygium and associated conjunctiva are excised

- Haemostasis (spontaneously) over the bare sclera.
- Don't use cautery.
- If no blood is available to provide autologous fibrin small veins and capillaries are purposely ruptured.
- Graft - Careful dissection between donor graft conjunctiva and Tenon's layer (1mm oversized).

- Site- superotemporal bulbar conjunctiva
- Position of graft -The limbal edge of the graft is carefully positioned at the host limbal tissue edge.



The edges are held with forceps for 3 – 5 min.



- To give adequate time for fixation.
- IF any active bleeding present, stopped by direct compression.
- Sutureless and glue-free graft at the end of surgery.

- Lubricating eye drops
- Followed up on 1st day, 1st and 4^t week, 3rd and 6th months
- Anterior segment examination on Slit lamp
- Examined for complications
- Anterior segment photography
- Keratometry.

AFTER SURGERY

Patients were prescribed

- Antibiotic – steroid combination eye drops

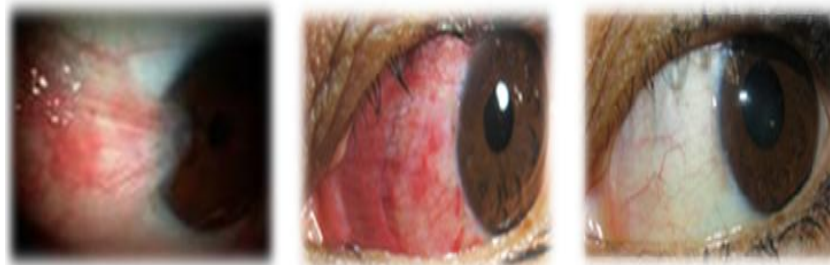


Figure 1: Pterygium before surgery

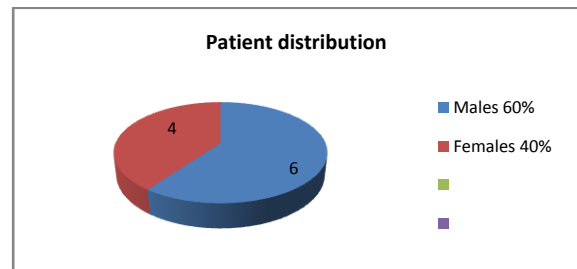
Figure 2: Pterygium 1st post-operative day:

Figure 3: Pterygium 1 month post-operative

RESULTS

Table 1

No. Of Eyes	20
Location	Primary Progressive Nasal Pterygium
Mean Operation Time	16 Min
Mean Graft Size	24mm ²
Complications	Graft Edema Graft Retraction



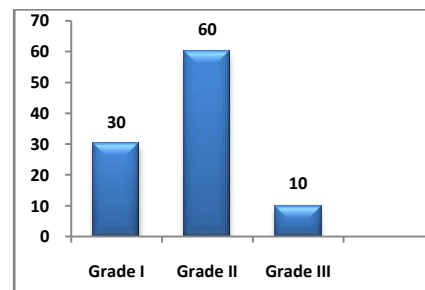
COMPLICATIONS

Table 2

Graft Edema	2 (10%)
Graft Retraction	2 (10%)
Graft Dehiscence	0
Recurrence	0

OBSERVATIONS: Age distribution: The mean age of patients was 52.6 year (Range 24-83).

GRADES OF PTERYGIUM



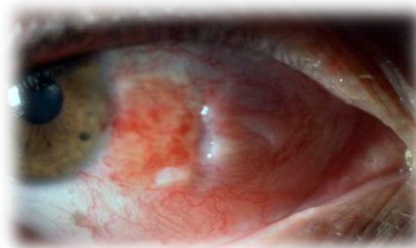


Figure 4: Post operative pain value on Visual Analogue Scale

Table 3

PAIN	0	1	2	3
1 st day P.O.		35%	55%	10%
1 st wkP.O.	90%	10%		
1 st monthP.O.	100%			

Surgical Time: The mean surgical time was 16 minute.

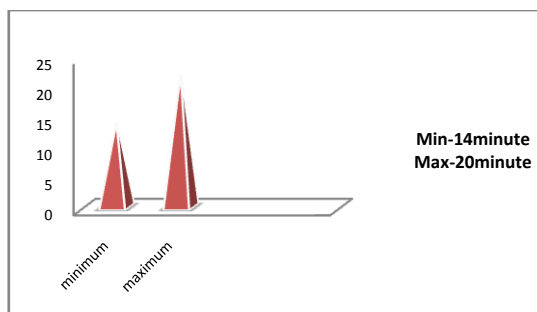


Table 4: Pre operative and post operative difference in astigmatism

Mean pre operative ASTIGMATISM	2.8 D
Mean post operative ASTIGMATISM	1.7 D
Mean difference in ASTIGMATISM	1.1D

COMPLICATIONS: GRAFT EDEMA -2 Eyes (10%)

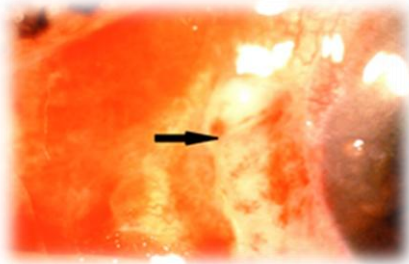


Figure 5: Treatment -Frequent steroid and antibiotic eye drops instillation.

GRAFT RETRACTION – 2 Eyes (10%)

Treatment -a continuation of patch therapy (48-72 hours) until secondary re epithelialization of the defect occurred without suturing.

ADVANTAGES

- NO GRAFT DEHISCENCE
- NO RECURRENCE OF PTERYGIUM
- There are no expenses like
- SUTURE (cost Rs. 500)
- COMMERCIAL GLUE (cost Rs. 1500).

Surgical methods and related complications

- Suture
- chronic inflammation
- Granuloma formation
- Bare sclera
- High recurrence
- Amniotic Membrane
- Requires costly donor tissue
- Fibrin Glue
- Prions Disease
- Hypersensitivity
- Mitomycin C Thiotepea, B Irrd
- Risk of corneal or scleral necrosis.

Table 5: Comparision with other studies

STUDY	Our Study	Mitra S et al.	de Wit D et al	Malik KP et al
No. Of patient	20 6	19 6	15 9.2	40 12 months
Duration	months	months	months	-
Surgical time	16min	11 min	14 min	-
Chemosis	2 (10%)	-	-	3 (7.5%)
Retraction	2 (10%)	2 (10.5%)	-	3 (7.5%)
Dehiscence	-	-	-	2 (5%)
Recurrence	-	-	-	1 (2.5%) at 6 months

CONCLUSION

Sutureless and glue free conjunctival autografting is a safe, effective and economical option for the management of primary pterygium. It produces lesser postoperative pain and it requires shorter surgical time. No cases of graft dehiscence, recurrence of pterygium during the follow up period.

REFERENCES

1. Mitra S et al. Autoblood as Tissue Adhesive for Conjunctival Autograft Fixation in Pterygium Surgery. Poster presented at the Annual Meeting of the American Academy of Ophthalmology; Oct. 22 and 23, 2011; Orlando, Fla.
2. Wit D, Athanasiadis I, Sharma A, Moore J (2010). Sutureless and glue free conjunctival autograft in pterygium surgery: a case series. Eye 24: 1474-77.
3. Kenyon KR, Wagoner MD, Hettinger ME. Conjunctival autograft transplantation for advanced and recurrent pterygium. Ophthalmology 1985; 92: 1461
4. Tan D. Conjunctival grafting for ocular surface disease. Curr Opin Ophthalmol 1999; 10: 277-281
5. Pan HW et al. Ophthalmology. 2011;118(6): 1049-1054.
6. Hirst LW. Extensive Incision and Conjunctival Transplantation for Pterygium: Results of 1,000 Surgeries. Presented at World Cornea Congress; April 7-9, 2010; Boston.

Source of Support: None Declared
Conflict of Interest: None Declared