

Fibrin Glue Vs Vicryl (10-0) Suture in Limbo Conjunctival Autograft in the Management of Primary Pterygium : A Prospective Comparative Study

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Abstract

Background: Pterygium is a wing shaped fibrovascular tissues proliferation from the conjunctiva on to the cornea. There is no satisfactory treatment for pterygium available yet. Among the available treatments, surgical treatment is better than medical treatment. Pterygium excision with graft placement is the preferred technique. Here, a comparative study is done between graft placement by suture and glue technique. **Aims and Objective:** To compare fibrin glue and suture technique for the treatment of pterygium in terms of: 1. operation time. 2. Post operative comfort level 3. Recurrence. **Material and Methods:** Total of 60 patients with primary pterygium, 30 in each group with fibrin glue -Group A and 10-0 vicryl suture -Group B were taken in the study. The study was conducted between august 2014 to September 2016. **Results:** Mean operating time was 30 minutes in fibrin glue group and 47 minutes in suture group. post operative comfort level was significantly different in second follow up recurrence rate was 0 in both group. **Conclusion:** Fibrin glue is a better technique in terms of operating time and post operative comfort level of the patient.

Keywords: Fibrin Glue, Pterygium, Suture Technique

1. Introduction

Pterygium is a worldwide condition commonly seen in the Cameroon belt located between 37 degrees north and south of the equator¹. There is abnormal expression of p53 tumour suppressor gene in the conjunctiva of patients with pterygium which suggests that pterygium is a growth disorder rather than a degeneration². The mutation of p53 is located on chromosome 17^{3,4}. Majoros was the first to describe preconjunctival autografts for pterygium⁵. Kanyon et al., described the use of conjunctival autografting from the same eye following pterygium excision⁶. The present study- "Fibrin glue Vs Vicryl(10-0) Suture in Limbo Conjunctival Autograft in the Management of Primary Pterygium: A Prospective

Comparative Study" was conducted to know the efficacy and safety of the latest techniques and comparing the success rates in this part of the country.

2. Aims and Objective

To compare fibrin glue and suture technique for the treatment of pterygium in terms of: 1. Operation time 2. Post operative comfort level 3. Recurrence.

3. Material and Methods

Study was conducted in Dept of Ophthalmology, Dr Vasant Rao Pawar Medical College, Nashik after Institutional

review board approval. Total of 60 patients with primary pterygium, 30 in each group with fibrin glue-Group A and 10-0 vicryl suture –Group B were taken in the study.

4. Study Design And Study Population

- Study design: Comparative study.
- Study setting: Department of Ophthalmology Medical College and Hospital, Tertiary care centre.
- Duration of the study: Period of Two years from August 2014 to September 2016.
- Sample size: 60 (30 in each group).
- Study Participants.

5. Eligibility Criteria

5.1 Inclusion criteria

- Patients with primary pterygium were selected for the study.
- Patients who were willing to undergo the surgery after understanding the nature.
- of treatment, its complications and prognosis.
- Patients of all ages and genders were included in this study.
- Patients having grade 2 and more pterygium were included in the study⁷.

5.2 Exclusion criteria

Presence of other ocular surface pathology like corneal ulcer, keratoconus, keratitis, corneal dystrophies, squamous cell carcinoma, conjunctival growth, scarred conjunctiva, dry eye (kerato conjunctivitis sicca), Sjogren's syndrome, traumatic pterygium acid burns.

Table 2. Subjective Symptoms in study participants

Subjective Symptoms	1st f/u		2nd f/u		3rd f/u		4th f/u		5th f/u	
	Glue	Vicryl	Glue	Vicryl	Glue	Vicryl	Glue	Vicryl	Glue	Vicryl
0	0	0	0	0	19	15	25	25	28	27
	0.0%	0.0%	0.0%	0.0%	63.3%	50.0%	83.3%	83.3%	93.3%	90.0%
1	2	2	24	4	11	13	5	5	2	3
	6.7%	6.7%	80.0%	13.3%	36.7%	43.3%	16.7%	16.7%	6.7%	10.0%
2	24	16	6	24	0	2	0	0	0	0
	80.0%	53.3%	20.0%	80.0%	0.0%	6.7%	0.0%	0.0%	0.0%	0.0%
3	4	12	0	2	0	0	0	0	0	0
	13.3%	40.0%	0.0%	6.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	30	30	30	30	30	30	30	30	30	30
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
p- value	0.061		<0.01		0.268		1.0		1.0	

P is less than 0.05 in second follow up when subjective symptoms of the two groups were compared with each other. P is more than 0.05 in other follow ups, when subjective symptoms of patients in different groups were compared with each other, which is not significant

Six months follow up of all the patients were done.

1st, 2nd, 3rd, 4th, 5th visits were on 2nd day, 1st week, 1st month, 3rd month, 6th month post operatively.

Comparison of subjective symptoms in post operative period: Redness, foreign body sensation, watering, dimness of vision, itching, cosmetic blemish, burning sensation, were graded in grade 0, 1, 2, 3 according to severity by patients.

Grade 0-No symptoms.

Grade 1-Mild symptoms (Mild lacrimation, Irritation).

Grade 2-Moderate symptoms (Severe lacrimation, Redness, Foreign body sensation).

Grade 3-Severe symptoms (Inability to open the eye).

Subjective symptoms of the patients were statically analysed by Chi square test, on each follow up visits

6. Results

Mean operating time was 30 minutes in fibrin glue group and 47 minutes in suture group. post operative comfort level was significantly different in second follow up. Recurrence rate was 0 in both groups.

7. Discussion

7.1 Operation Time

Table 1. Operation time in study participants

Variables	Group	Mean	SD	SEM	p- value
Operative Time	Glue	29.83	3.82	0.70	<0.01
	Vicryl	47.83	3.87	0.71	

Mean values of these different groups were statistically analysed by one way analysis of variance.

P less than 0.01 when mean time of patients operated with suture were compared with patients operated with fibrin glue, which is very significant.

Table 3. Post Operative Recurrence in Patients of Pterygium

Recurrence	1st f/u		2nd f/u		3rd f/u		4th f/u		5th f/u	
	Glue	Vicryl	Glue	Vicryl	Glue	Vicryl	Glue	Vicryl	Glue	Vicryl
No	30	30	30	30	30	30	30	30	30	30
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Yes	0	0	0	0	0	0	0	0	0	0
	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	30	30	30	30	30	30	30	30	30	30
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
p- value	NA		NA		NA		NA		NA	

No recurrence was observed in the 6 months follow up that we did for our patients

7.2 Subjective Symptoms

7.3 Post Operative Recurrence in Patients of Pterygium

As seen in Table 1 time taken for surgery by fibrin glue technique is significantly less as compared to time taken by suture technique. This is supported by the previous studies of Mohammed I⁸, Hirst LW⁹, Ang LP¹⁰, Starck T¹¹, Rubin MR¹², Pan HW¹³, Ti SE¹⁴, Hirst LW¹⁵, Koranyi G¹⁶, Nieuwendaal CP¹⁷ which also suggest that time of surgery is less with fibrin glue technique as compared to suture technique.

Subjective symptoms compared in 2nd Table, the subjective symptoms in the 2nd follow up was significantly less in fibrin glue group as compared to the suture group. This is also supported by the previous studies: Mohammed I⁸, Hirst LW⁹, Ang LP¹⁰, Starck T¹¹, Rubin MR¹², Pan HW¹³, Ti SE¹⁴, Hirst LW¹⁵, Koranyi G¹⁶, Nieuwendaal CP¹⁷ which state that post operative comfort with fibrin glue group is better compared to suture group.

Recurrence in our study was 0 percent.

It is found in literature that recurrence rate is less in primary pterygia as compared to recurrent pterygia following limbal conjunctival autograft transplantation.

Kenyon et al¹⁸ in their study reported 0 percent recurrence in primary and 5.3% recurrence in recurrent pterygium.

Shimazaki¹⁹ recorded recurrence rate of 7.4 percent.

Figueiredo et al²⁰ operated upon 63 eyes (40 primary and 23 cases of recurrent pterygium) with conjunctival autografting and found recurrence rate of 16 percent.

Rao S. K²¹ reported 5.5% recurrence for primary pterygium.

Varssano²² operated on 15 patients of primary pterygium of which 2 of them recurred 13.3%

Young A. L²³ reported 1.9 percent recurrence for primary pterygium.

8. Conclusion

This study shows that fibrin glue is better compared to 10-0 vicryl suture in terms of operation time and post operative subjective symptoms.

At the same time relief of symptoms at the end of 6 months follow up is the same but it occurs earlier in patients of fibrin glue as compared to 10-0 vicryl suture.

Above results also show that limbal conjunctival autograft technique is a safe and effective technique in the management of pterygium.

In our series recurrence rate is 0 percent in both groups which is very low compared to other surgical techniques.

The complications encountered in the present study were of trival nature and the incidence rate was very low. No serious ocular side effects were observed in the present study.

So in view of low recurrence rate with minimum and mild complications both this technique seems to be the first line of treatment for primary pterygium. Since it is safe and effective any anterior segment skilful surgeon can adopt this technique without specialized training or equipment and that too with minimum complications and maximum success which is the need in the developing countries.

Plus fibrin glue also holds the advantage of less operating time and earlier recovery which are significant factors.

Rest of the advantages is similar in both groups.

9. References

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