

Pterygium Auto Graft : Inferior Found To Be Superior

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Abstract

Topic: Pterygium auto graft: Inferior found to be superior

Introduction: Pterygium is an elastotic degeneration of sub epithelial conjunctival tissue which encroach the cornea. Surgical excision is preferred method of treatment. Conjunctival autograft has shown promising results with low recurrence rate. The superior-temporal conjunctiva is mostly used for this purpose but this leads to non availability of superior conjunctiva for future surgical intervention. This study was conducted whether the inferior conjunctival graft functioned similar to the superior graft and whether there was any difference in recurrence of pterygium in between a superior and inferior conjunctival graft.

Methods: A total of 40 patients with primary pterygium in

age group of 20-50 years with >2mm of horizontal extension without any ocular and systemic disease were included in the study. All patients were divided into 2 groups of 20 each. Group A received superior graft while Group B received inferior grafts. Patients were followed up on day 1, one month, 3 months and 6 months.

Results: A total of 40 patients (20 in each group) were participating in the study, out of which 32 male and 8 female patients. In group A, 1 patient at 3 months and 3 patients at 6 months have recurrence of pterygium while in group B, only 2 patients show recurrence at 6 months follow up.

Conclusion: This study concludes that the recurrence rate is less with the inferior conjunctival grafts. It also shows that inferior conjunctiva is easily assessable and had less post operative symptoms of foreign body sensation.

Introduction

Pterygium, derived from the ancient Greek word “pterygos”, denoting a wing. This is a degenerative condition of conjunctival tissue. This is a common ocular surface lesion originating in the limbal conjunctiva within the palpebral fissure with progressive involvement of the cornea. It proliferates as a vascularised granulation tissue invading the cornea and destroying the superficial layers of the stroma and Bowman’s membrane.

The prevalence of pterygium varies from 1 to 15% depending on the geographical location of the population. The main risk factors are the total exposure to ultra-violet (UV) light and increasing age. One most probable hypothesis for its pathogenesis is that the effects of UV radiation cause actinic changes in the conjunctiva, resulting in abnormal growth. Actinic changes seen on histopathology similar to actinic keratoses on the skin also supports the role of UV radiation. This growth may be exacerbated by hot, dry or windy environmental conditions. Those patients with lifestyles that have greater exposure to these conditions e.g. outdoor activities or farmers or labourers; have a greater risk of developing pterygium. Recurrent pterygia appear to be more related to surgical trauma than UV radiation as avoidance of UV radiation has not been shown to affect the incidence of recurrence.

Patients with pterygium present with various complaints, ranging from no symptoms to significant redness, swelling, itching, irritation, and blurring of vision associated with elevated lesions of the conjunctiva and contiguous cornea in

one or both eyes. The diagnosis of pterygium is based on the clinical appearance of the lesion. Typical findings include triangular shaped fibrovascular conjunctival growth within the palpebral fissure which may be extending onto the corneal surface. A pigmented epithelial iron line (Stocker’s line) adjacent to a pterygium is evidence of chronicity. Pterygium can be graded as:



- **Grade I** covered pterygium that was between the limbus and a point midway between the limbus and the pupillary margin.
- **Grade II** occurred when the head of the pterygium was present between a point midway between the limbus and the pupillary margin & the pupillary margin
- **Grade III** covered pterygium that crossed pupillary margin.

There is no medical management and surgical removal is the preferred method of treatment. Conjunctival autograft with limbal stem cell transplantation has shown promising results with low recurrence rate. Conjunctival autograft is usually obtained from the supero-temporal area which may adversely affect the outcome of future filtration surgery. If supero-temporal area is kept untouched the success of glaucoma

surgery can be helped. Keeping the above facts in mind, we retrospectively compared success rate of the superior and inferior conjunctival grafts.

Materials & Methods

This was a Prospective interventional study conducted over a period of 6 months from November 2017 to June 2018 in a tertiary eye care center. This study was conducted in 40 eyes which were divided into 2 groups with 20 eyes in each group.

- Group A of 20 patients treated by pterygium excision along with the superior temporal bulbar conjunctivae (STBC) autograft.
- Group B of 20 patients treated by pterygium excision along with the inferior temporal bulbar conjunctivae (ITBC) autograft.

Inclusion criteria :

- All patients 20-50 years of age group who had progressive pterygium and are willing for surgery
- Ready to give informed consent for the study

Exclusion criteria :

- Patients with trichiasis, entropion, ectropion
- Lacrimal apparatus active disease
- Recurrent pterygium
- Systemic illness like Diabetes

All patients reporting to the hospital with primary pterygium in the age group of 20-50 years were included in the study after obtaining informed consent. A comprehensive evaluation was undertaken including patient's age, gender, medical and ocular history, visual acuity assessment and slit lamp examination. All surgeries were carried out by single surgeon under local anesthesia. The pterygium was dissected using a blade. Subconjunctival fibrous tissue under pterygium was excised wider than the pterygium size. A free conjunctival limbal auto graft was placed over the bare sclera with help of serum. Postoperative visit on day 1, 1 week, 1 month, 3 months and 6 months from the date of surgery. Data was recorded in self made detailed proforma. Data analysis was done by Statistical Package for Social Sciences (SPSS) version 21.0 statistical analysis software.

Results and Observations

- A total of 40 patients (20 in each group) were participating in the study, out of which 32 male and 8 female patients.

Group	Male	Female
A	15	5
B	17	3

- When we classify them according to grading of pterygium the maximum number of patients fall in the grade II pterygium.

	Grade I	Grade II	Grade III
Group A	6	13	1
Group B	7	11	2

- 2 patients in each group did not complete the follow up so we excluded them from further calculation.
- Post op vision: 12 patients in group A and 10 patients in group B appreciated vision improvement on Snellen's chart while 6 patients in group A and 8 patients in group B reported no change in visual status.
- During follow up period post-operative self limiting complications occurred in the first week in 4 (22.22%) cases in group A while 3 (16.67%) cases in group B as foreign body sensation, photophobia and blepharospasm.
- **Recurrence:**
 - o In group A, 1 (5.56%) patient at 3 months and 3 (16.67%) patients at 6 months have recurrence of pterygium of grade II.
 - o While in group B, only 2 (11.11%) patients show recurrence of pterygium of grade II at 6 months follow up.

	Group A	Group B
Day 1	0	0
1 Week	0	0
1 Month	0	0
3 Month	1	0
6 Month	3	2

Discussion

Various surgical techniques have been used to treat pterygium. The diversity of techniques reflects the ongoing surgical challenge to devise the best method for treating pterygium. Many studies have been published with conflicting results. In our study we compared and evaluate the success rates of pterygium excision with conjunctival autograft transplantation with graft from the superior temporal bulbar conjunctiva (STBC) and pterygium excision with conjunctival autograft transplantation with graft from the inferior temporal bulbar conjunctiva (ITBC).

In our study, most patients were male. This

predominance in this study can be explained by work related sun and heat exposure in males. Vision improvement in both groups can be explained by the pre-op grading of pterygium and it has no role with the group allotted. After assessing the self limiting complications like foreign body sensation, photophobia and blepharospasm it was found that these problems were more in group A patients then in group B and these problems were significantly reduced after second and third follow ups. In group A, 3 patients while in group B, only 2 patients show recurrence at 6 months follow up. So less in group B.

In other studies Koc et al demonstrated that autografting from superior or inferior sites showed no significant difference in recurrence rate while Nazzulah et al and Yeung et al, reported low risk of recurrence following inferior temporal conjunctival autografting.

Limitations of study

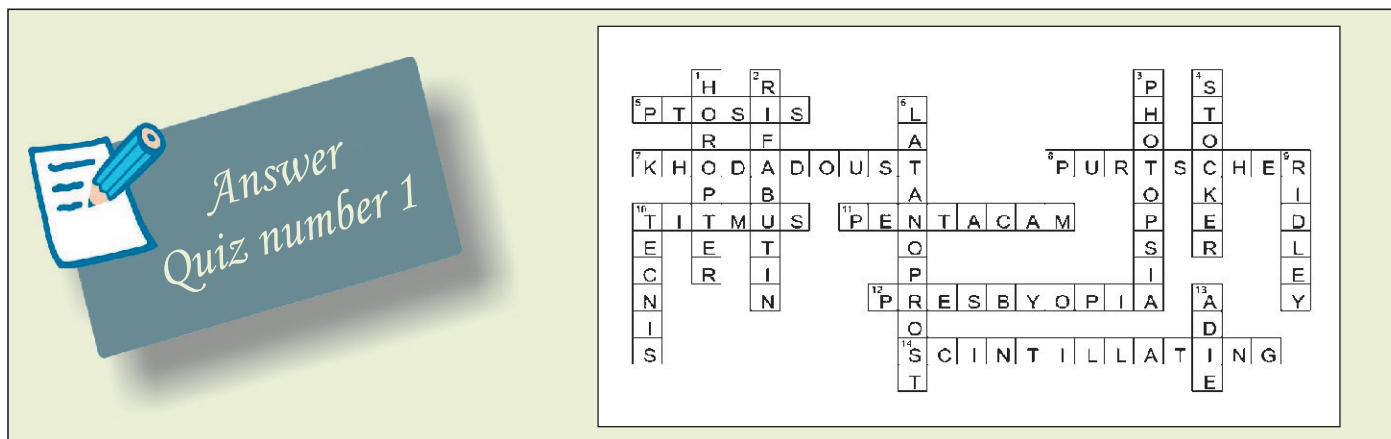
- o We used convenient method of sampling and all patient were taken from the charitable hospital
- o Most of patients are of low socioeconomic status and this will affect compliance which ultimately affect the recurrence rate
- o Randomisation was not done
- o Sample size was small
- o Poor post operative follow up

Conclusion

This study concludes that pterygium excision with conjunctival auto-graft transplantation from the inferior bulbar conjunctiva is highly efficient in terms of post op patient symptoms, safety, efficacy, easy assessability and low recurrence rates. The low recurrence rate of the inferior limbal conjunctival auto graft and the few self limiting complications makes this procedure of choice in primary pterygium, especially in glaucoma patients in whom the superior bulbar conjunctiva is valuable.

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