

## A Comparative study of Autologous Blood versus Conventional Conjunctival Autograft Surgery for Pterygium

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### Abstract

**Background:** Pterygium is a pink fleshy sub conjunctival growth that covers the white part of your eye over the cornea. **Aim:** To Compare the Autologous Blood versus Conventional Conjunctival Autograft Surgery for Pterygium. **Materials and method:** 30 patients attending Ophthalmology OPD with primary pterygium were randomised into two groups of 15 patients in each group by a simple randomisation technique. Patients were divided in two groups and undergone pterygium excision followed by conjunctival autografting either by patient's own blood (group A) or by suture (group B). **Results:** males were more affected by pterygium as compared to females. The mean age of the patient in group A was 43.6 and in group B was 46.86. The duration of surgery in group A was 21.33 min and in group B was 35.5 min. No recurrence was observed at day 90 in both groups. **Conclusion:** Conjunctival autografting by patient's own blood is better than suture.

**Keywords:** Pterygium, Autologous Blood, Autograft Surgery, Pain, Itching, Waterying, F.B.Sensation, Inflammation, Graft Displacement

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### Introduction

The word pterygium derived from a Greek word "Pterygos" which means "wing". Pterygium is a degenerative condition of subconjunctival tissue characterised by a triangular portion of the bulbar conjunctiva encroaching onto the cornea.[1]

It is slightly vascular and seen in the interpalpebral fissure in the horizontal meridian; most often from the nasal side. It invades the cornea destroying the superficial layers of the stroma and Bowman's membrane.[2]

A unique feature of pterygium epithelial cell is its positive immunohistochemical staining for different types of metalloproteinase that are absent in normal conjunctival, limbal or corneal cells.[3]

The surgery is indicated for

Cosmetic Reason

Involvement of visual axis

Induced Astigmatism.

To prevent recurrence, adjunctive therapies are considered which reduces recurrence rate significantly. These include application of Mitomycin C, radiotherapy, conjunctival or limbal conjunctival autograft (CAG), and amniotic membrane graft[4].

Traditionally, Pterygium surgery with CAG used sutures to secure the autograft in place. The use of fibrin glue for this purpose was popularised by V Koranyi et al in 2004[5,6] Replacing the sutures with adhesives decreased the operating time, improved post-operative comfort. But the major problem with fibrin glue is the cost and potential risk of transmitted infection (Human immunodeficiency virus, Parvo virus B19, Hepatitis).[7]

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### Materials and Methods

This prospective study was conducted at department of ophthalmology, Sri Krishna Medical college and Hospital, Muzaffarpur. The study was approved by institutional research and ethical committee. The Study was conducted over a period from June 2019 to December 2020.

**The inclusion and exclusion criteria were proposed as follows:**

**The inclusion criteria was**

Patients who were diagnosed with primary pterygium and met the indication for surgical treatment

Patients aged between 20 to 60 years

Patients having pterygium covering more than 2mm of cornea.

**The exclusion criteria was**

Patient having age less than 20 years and more than 60 years

Pterygium less than 2 mm of cornea

Patients who had glaucoma in the study eye

Patients who had an intraocular pressure >21mm Hg

Patients who had a history of allergy to steroid eye drops

Recurrent pterygium

Pseudo pterygium

Pregnant women

**Ocular surface disorder, infection and any trauma**

30 patients attending Ophthalmology OPD with primary pterygium in the study period and accepted in the inclusion criteria will comprise the study population. The patients were randomised into two groups of 15 patients in each group by a simple randomisation technique.

An informed and written consent was obtained from all patients prior to the commencement of the study. After detailed ocular and systemic history, a thorough ocular examination including visual acuity, refraction and slit-lamp examination was done.

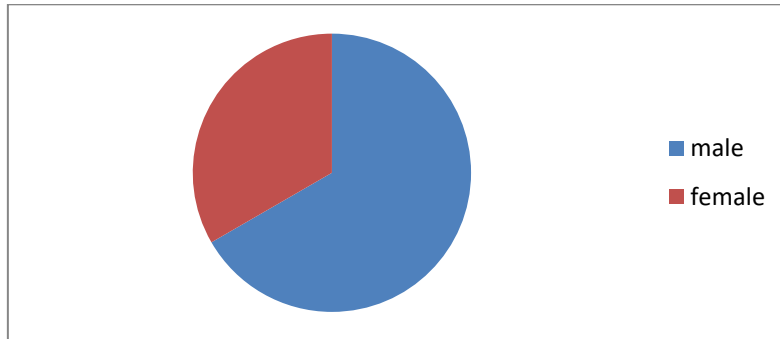
Hematological examination such as Hemoglobin (Hb), Bleeding Time (BT) and clotting time (CT) were performed in each patient. All cases were operated using surgical microscope under aseptic conditions and managed on outpatient basis.

Patients were divided in two groups and undergone pterygium excision followed by conjunctival autografting either by patient's own blood (group A) or by suture (group B). Various parameters like operating time (starting from placement of lid speculum to its removal at the end of surgery) as well as postoperative symptoms, signs were noted for both the groups. Follow up was done on postoperative day 1, 8, 30, 90 and 180. During each postoperative

visit, slit-lamp examination, the acceptance of the graft and any suture related complications were checked.

**Result and Discussion**

The present prospective study compared the Autologous Blood versus Conventional Conjunctival Autograft Surgery for Pterygium. A total of 30 patients divided randomly into two groups were evaluated. The result of the study showed, out of 30 students in our study 20 were males and 10 were females. Fig-1



**Fig 1: Distribution of subjects amongst gender**

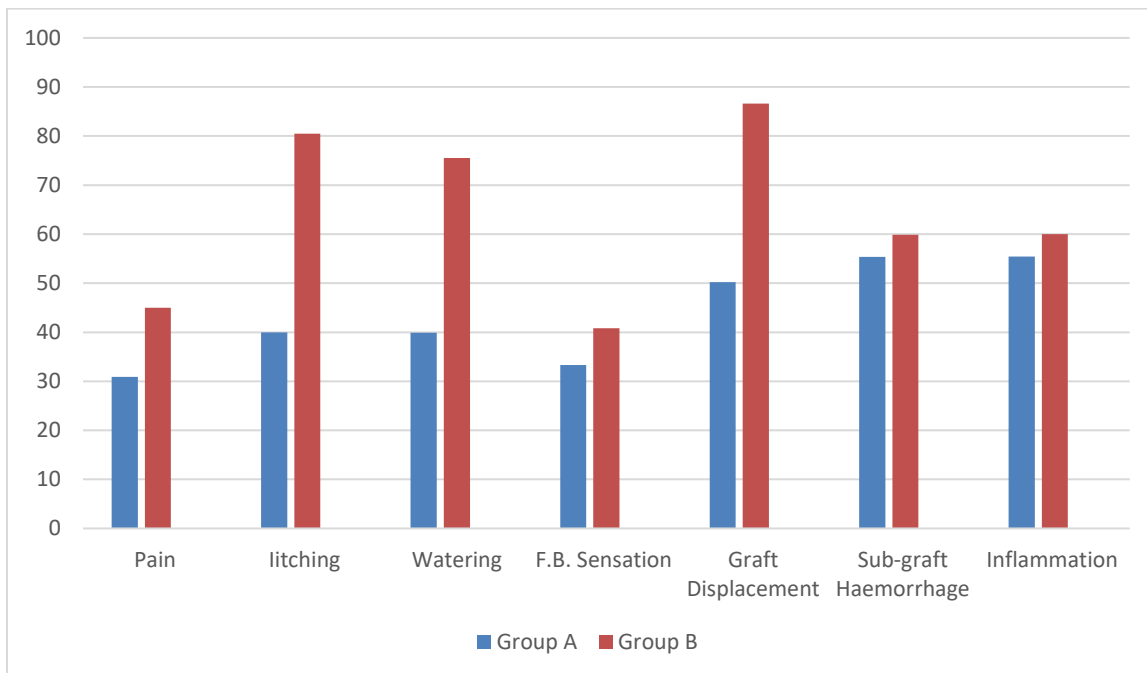
Our study shows that males were more affected by pterygium as compared to females. We found more number of patients in old age group. Out of 30 patients, 22 patients had 3 to 4 mm involvement of cornea. The mean age of the patient in group A was 43.6 and in group B was 46.86. The duration of surgery in group A was 21.33 min and in group B was 35.5 min which is significantly high compared to group A.

We compared all the symptoms (e. g. Pain, Itching, Watering, F.B.Sensation, Graft displacement, SubgraftHaem'G, Inflammation)

of patients of Group A and Group B. p value <0.5 is considered significant.

**On Postoperative Day 1**

On postoperative day 1, among all the postoperative signs and symptoms, the p-value for watering, itching and graft displacement is significantly high and for pain is also significant as compared to Group B. Fig – 2

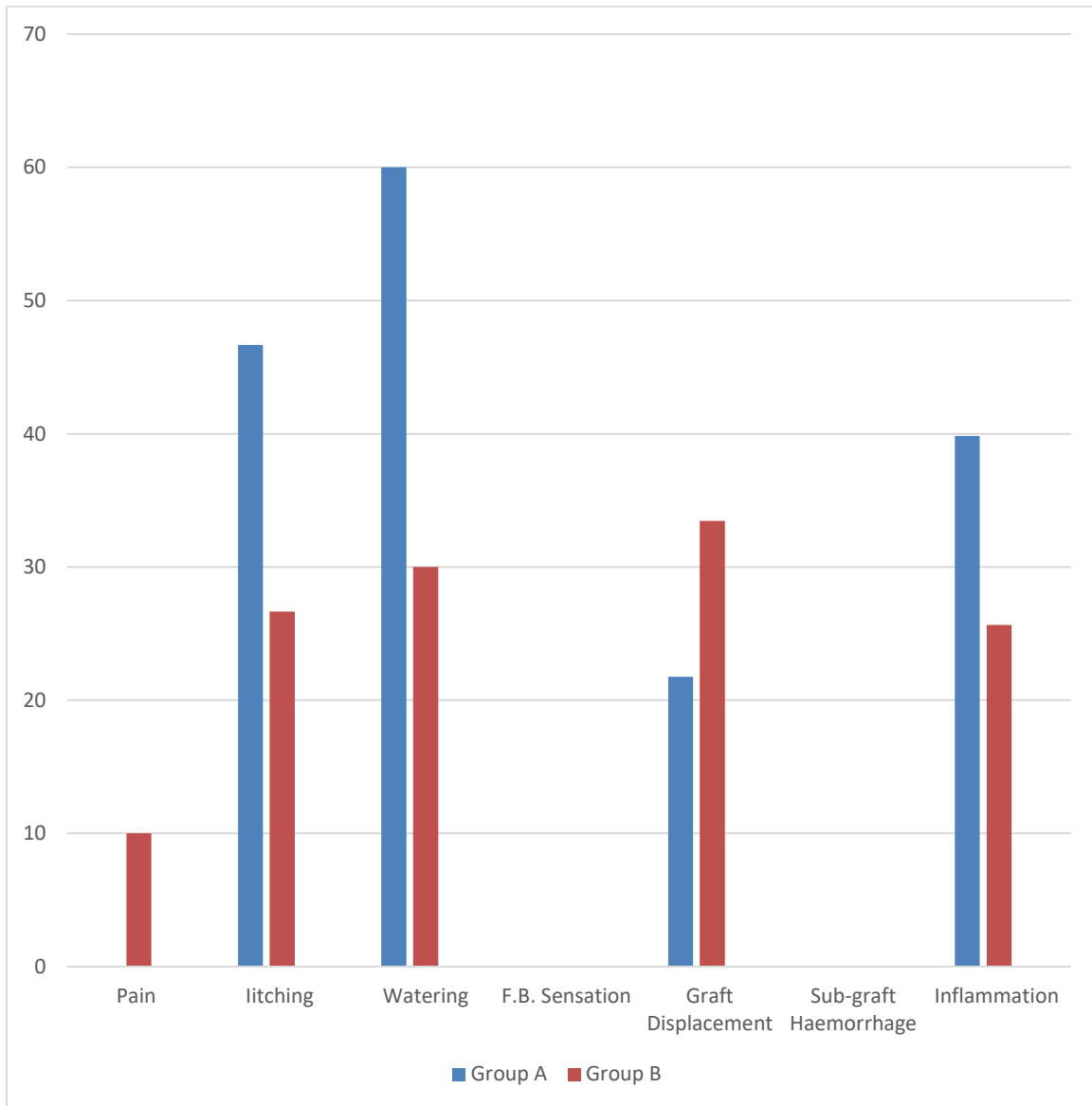


**Fig 2: Comparison of Group A and B (On postoperative Day 1)**

**On Postoperative Day 8**

On postoperative day 8, among all the postoperative signs and symptoms, the p-value for watering, itching and inflammation is significantly high as compared to Group B.

In group A, pain was absent on post operative day 8 and the difference between the two groups was statistically significant. Whereas Graft displacement is significantly high in Group B as compared to Group A. There was no case of F.B.Sensation and SubgraftHaem'G on Day 8.

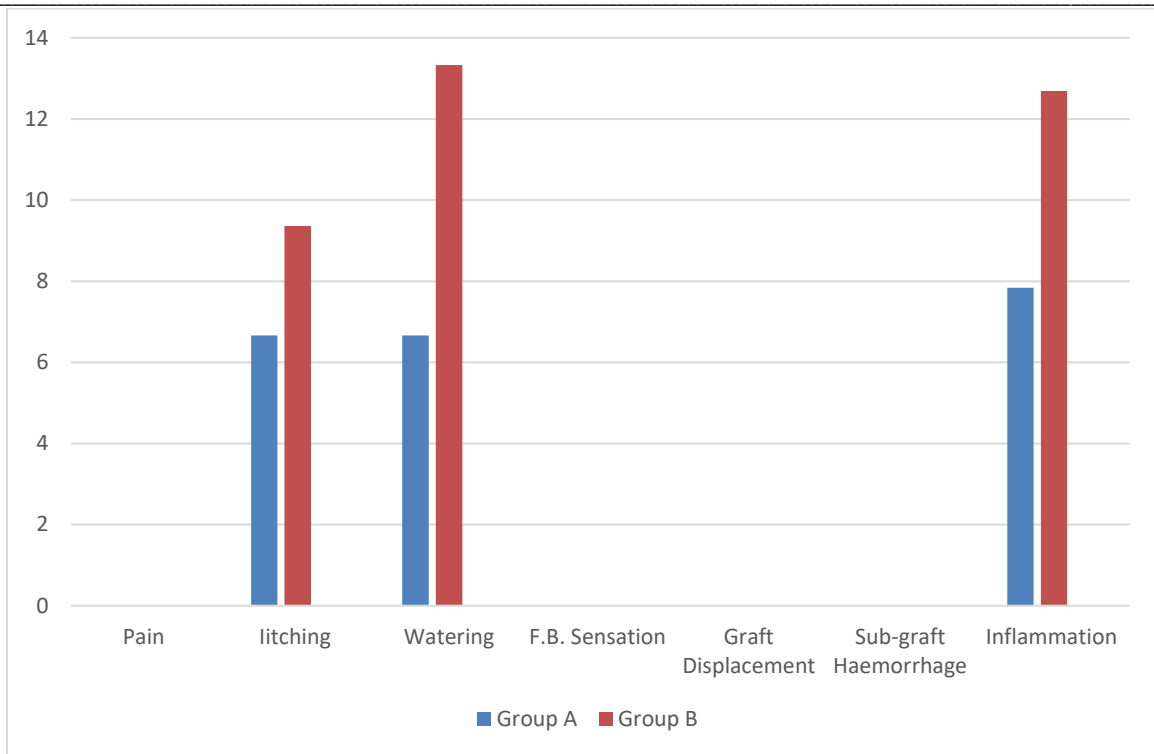


**Fig 3: Comparison of Group A and B (On postoperative Day 8)**

**On Postoperative Day 30**

On Postoperative Day 30, among all the postoperative signs and symptoms only watering, itching and inflammation were still present.

The recurrence of pterygium is studied at day 90 and day 180 postoperatively. No recurrence was observed at day 90 in both groups.



**Fig 4: Comparison of Group A and B (On postoperative Day 8)**

On day 180, Group B showed a recurrence whereas no recurrence was seen in Group A.

#### **Conclusion**

In our study, mean operative time for group A was significantly less as compared to patients of group B.

Pain subsides completely on postoperative day 8 in patient's own blood group while in group B, it subsides completely on day 30.

On day 30 watering, itching and irritation were still presents in both groups. But in group B, these were statistically high as compared to own blood group.

There was a recurrence in group B.

Conjunctival autografting by patient's own blood is better than suture as:

Less operative time

Less postoperative ocular signs and symptoms

Better patient comfort

Economical

No recurrence

Absence of potential adverse reaction caused due to use of foreign material.

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