

A comparative study of use of nylon suture and suture less glue free technique in conjunctival autograft transplantation following pterygium excision”.

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ABSTRACT

Background: Limbal conjunctival autografting in pterygium treatment has reduced the recurrence rate to an acceptable level with minimal complication¹.

There are many methods of limbal conjunctival autograft-like using suture, fibrin glue and suture less glue free technique. Suture related complications are infection, prolonged surgery time, suture abscess, post operative discomfort, pyogenic granuloma^(2,3,4). Suture less glue free technique is a newer and cheaper upcoming technique. It is comparatively free of post operative hazards. Pre operative time consuming is also less. This study is done to compare and evaluate outcome and success rate between conventional methods of using suture and new approach of suture less glue free technique.

Objective: To assess the comparative outcomes and success rate of the two technique of pterygium surgery, namely:

- Pterygium excision with conjunctival autograft secured with 10-0 nylon suture with spatulated needle.
- Pterygium excision with conjunctival autograft secured without suture and glue free method.
- Specific objectives: To evaluate the outcomes of the two surgical techniques in terms of
 - Surgical time.
 - Post operative pain & discomfort.
 - Resolution of symptoms post operatively.
 - Uptake of graft.

Methodology: Proper patient's selection will be done. The demographic details of patients will be recorded. Proper pre operative assessment to be done. In one group pterygium surgery will be done using 10-0 nylon suture for 31 patients. Another group surgery will be performed using suture less glue free technique for 31 patients. Operative time will be noted. Post operative follow up will be done on next day, weekly for 1st month then monthly till end of study. Following points will be noted &

compared -visual acuity, pain, graft position, necrosis, flap loss, donor area for any pseudo pterygium.

Results: Surgical time

The total operative time in each patient was recorded in minutes. The surgical time of group A as 49.29 ranging from a maximum of 60 mins to a minimum of 45 mins. The mean surgical time in group B was 25.26 min ranging from a maximum of 30 mins to a minimum of 20 mins. Surgical time was significantly shorter in group B (p less than 0.05)

This finding corroborated with observations of Kunjlata Sethi et al, SChowdhury et al and TiSE et al.

Intraoperative complications

Only 6 patients of group A and 4 patients of group B had some intraoperative complication in the form of bleeding more than usual seen in pterygium surgeries. More bleeding was observed with suture that is group A. But the difference in values in two groups was not statistically significant (p less than .366)^[45,46,47]. Minimal cauterization was used to stop bleeding in group A. However no cauterization was applied in group B as it would affect the procedure.

Post operative assessment Visual acuity

Visual acuity was noted postoperatively in Logmar units in all the patients in all visits. Final visual acuity at the end of 3 months were compared with preoperative vision. The change in mean preoperative and postoperative visual acuity in group A was 0.125(0.3600-0.2342) which is statistically significant (p value less than 0.00) . The difference in mean preoperative and postoperative visual acuity in group was 0.1081(0.3200-0.2119) which is statistically significant (P value 0.00)^[49,29] This is corroborating results Majumder CH et al and Elwan SAM et al.

Post operative pain and discomfort

At the end of post operative week, there was as in case in the number of patient with severe pain and discomfort in group A. The grade of moderate pain and discomfort in group A decreased.

Patients with minimum pain and discomfort decreased in number in group A. In group B patients overall pain and discomfort was decreased in first post operative week. 13 patients of group B had minimum increase of symptoms. This study results are similar to that made by TNatung et al, SChowdhury et al.

Astigmatism

Astigmatism was noted post operatively in diaptores in all patients [5,6,7]. Final astigmatism at the end of three month where compared with the pre operative astigmatism. The difference between mean pre operative and post operative astigmatism in group A was 0.2258 . P value calculated was statistically significant ($p < 0.05$)

The difference between mean preoperative and mean postoperative astigmatism in group B was 0.887. P value calculated was statistically significant ($p < 0.05$). This is corroborating results A Sharma et al , Anita Minj et al.

Graft related complication

Graft related complication was seen in 12 patients of group A and 3 patients of group B. complication was higher in group A and difference was statistically significant p value less than 0.008

In group A 10 patients had subconjunctival haemorrhage and 2 patients had cyst formation. There was 0 graft loss in group A. In group B 3 patients had graft loss.

Subconjunctival hematoma resolved spontaneously while patient with graft loss and conjunctival cyst formation was reconsidered for surgery^[33,35]. This is similar to results of Harpal singh et al.

Reccurence

5 patients of group A had recurrence and 1 patient of group B had recurrence. Recurrence was higher in group A but difference is not statistically significant. This is corroborating results of Harpal singh et al and T natung et al.

I. INTRODUCTION

A pterygium is a fibrovascular tissue which arises in the conjunctiva and grow towards and the surfaces of the cornea. It is derived from the Greek word 'pteron' which means wing. It is

normally triangular in shape . It has an apex or head which points towards the centre of the cornea and the base facing the semilunar fold of the medial canthus. They are generally located horizontally on either side of the cornea. It may be present on both sides(Double Pterygium) at same time.

Pterygium is mostly cosmetically unacceptable. Also causes foreign body sensation, burning, tearing and blurred vision. Most of these symptoms are related to active inflammation of the pterygium. In some patients with advanced pterygium there is restriction of ocular motility in opposite direction which may lead to diplopia in some positions of gaze.

KENYON et al⁷ introduced the concept of conjunctival autografting in 1985 for treatment of recurrent pterygium. This method had same efficacy as the previous methods .This case is not however 100% successful and there is 5-7% recurrence in USA and 16% failure in geographic areas of high UV-ray exposure.^{8,9}

Recently there has been extensive work on Limbal Stem Cell (LSC) dysfunction in pterygium and the role that LSC plays against conjunctival overgrowth . LSC are a group of totipotent cells present at the limbus in full circumference from which the corneal epithelium regenerates . Their deficiency at the limbus allows conjunctivalization of corneal epithelium¹⁰. This phenomenon is true for primary and recurrent pterygium . Thus by including the LCS in conjunctival autograft one can reduce the recurrence. Ocular surface can also be treated with the help of transplantation of human amniotic membrane graft after screening and processing. Though the results of this procedure are encouraging still its effectivity in preventing the recurrence is less than that of stem cell grafting. It is also true that cumbersome screening of amniotic membrane and costly storage procedures has limited its utility.

The conjunctival autografts or the amniotic membrane grafts are generally secured to the bare sclera bed with the help of sutures. Use of tissue sealants is also increasingly becoming popular to achieve the same purpose. Also no suture no glue technique is by far the most rewarding method of pterygium surgery.

This study is intended to compare the outcomes of the ocular surface transplantation techniques where conjunctival autografts are secured to the bare sclera bed with the help of 10-0 nylon sutures in one half and no glue no suture method in the other half of the patients^{11,12}.

II. AIMS AND OBJECTIVES

- A) **AIMS:** To assess the comparative outcomes and success rate of the two techniques of pterygium surgery, namely:
- Pterygium excision with conjunctival autograft secured with 10-0 nylon suture with spatulated needle.
 - Pterygium excision with conjunctival autograft secured without suture and glue method.
- A) **OBJECTIVES:** To evaluate the outcomes of the two surgical techniques in terms of
- Surgical time.
 - Post operative pain & discomfort.
 - Resolution of symptoms post operatively.
 - Uptake of graft.

III. METHODOLOGY:

- Study design- prospective observational study
- Study setting and timelines –Patients diagnosed with nasal pterygium are selected. They are divided into two groups. One group will be operated using 10-0 nylon suture. Another group will be operated with suture less glue free technique. Study will be based on in Government Hospital.
- Place of study – Department of Ophthalmology, R G Kar Medical College & Hospital
- Period of study- From December 2017 to May 2019
- Study population- All patients visiting department of Ophthalmology R G Kar Medical College & Hospital during study period.
- Sample size- 62
- Case control not required
- Inclusion Criteria:
 - Primary unilateral nasal Pterygium
 - Pterygium growth > 1(one) mm over the cornea horizontally from the limbus.
 - Informed consent of patients.
- Exclusion Criteria:
 - Recurrent Pterygium
 - Sign of others significant pathology/ active diseases on complete ocular examination.
 - Known trauma to the eye with Pterygium.
 - Known previous surgery on the affected eye.
 - Uncontrolled glycemic status.

- All patients under this study will be subjected to a thorough general & ocular examination. Pre operative patients work up included.

- Data collection & interpretation- The study will take place among patients with nasal pterygium . Prior to data collection the patient will be provided with a consent form, case record form and a proforma for the history and relevant investigation. Patient will be evaluated after a thorough ophthalmological examination.

- k) Examination and Procedure Materials & Methods:

- History taking.
- Systemic Examination.
- General Ophthalmic Examination.
- Refraction under mydriatic and subjective refraction.

A. History :

- Age , sex ,and address .
- Chief complaints with duration .
- A detailed occupational history (this disease being more common in hot and dry climates with high UV — exposure) .
- Any complaints of excess watering or dryness of the eyes . 5 . Treatment history : Following were carefully noted :
 - * Details of ocular medical treatment specially topical steroid .
 - * Details of any systemic medical treatment specially systemic steroids .
 - * Details of any surgical treatment specially excision of perilimbal mass application of cryo. in perilimbal area or history of any cataract operation or penetrating keratoplasty.

B. Systemic Examination;

Done to exclude diabetes , hypertension , acute infection, asthma, etc . Among blood examination more stress was laid on bleeding time ,clotting time and PPBS .

C. Ocular examination –

It was the most important part of the patient evaluation and was done very meticulously under the following format –

a) Visual acuity : It was recorded on LogMAR scale at the first OPD presentation , on the 7 th post - operative day , on subsequent follow-up visits and finally 3 rd month post operatively .

b) Examination of the ocular adnexa : lids , blinking , ocular fixation and ocular motility were recorded . Lacrimal apparatus was tested by naso -lacrimal duct patency

c) Anterior segment examination : (under slit-lamp biomicroscope)

i) **Conjunctiva** - extent and location of pterygium .

- * size and extent of pterygium over conjunctiva .
- * typing of pterygium — whether progressive or stationary
- * any sign of conjunctival inflammation
- * any sign of conjunctival scarring , granulation tissue , symblepharon reaction , etc at the superior bulbar conjunctiva from where the graft will be taken .

ii) **Cornea** -

- * Depth of involvement of cornea .

iii) **Papillary encroachment**

- *any sign of corneal inflammation .
- * Any previous opacity or scarring .
- * Any sub epithelial deposits , stoker's line , Fuch's patches, etc.

iv) **Anterior chamber**

- * reaction
- * Depth (both central and peripheral by Van Herik's method) .

v) **Pupil**

- * shape
- * size
- * reaction to light
- * margin : posterior synechia , etc .
- vi) **Iris**
- * atrophy
- * iridectomy
- * exfoliation
- * ectropion uvea rubeosis , heterochromia etc .

vii) Tear film was evaluated by tear film break up time under slit lamp .

d) Fundus -following were examined :

- * optic disc
- * nerve fibre layer

- * macula and surrounding retina
- * peripheral retina

After all these refraction was meticulously done . First retinoscopy (objective) test was done with patients under cyclopegic . This was followed by post mydriatic (subjective) test. This refraction was done before operation and then finally 3 months after operation .

IV. METHODS

After full pre-operative assessment 62 patients with primary nasal pterygium were subjected to surgical excision of pterygium . After randomization , thirtyone patients underwent pterygium excision with conjunctival autograft secured with 10 — 0 Vicryl sutures with spatulated needle and were allocated in Group A. The remaining thirtyone patients underwent pterygium excision with conjunctival autograft secured with no suture no glue were allocated in Group B. All the cases were compulsorily done under operating microscope and all surgical procedures were performed by the same surgeon to ensure consistency. Surgery time was noted from first incision until the lid speculum was removed.

SURGICAL TECHNIQUE :

GROUP A :

Patient was laid down on OT table and anti septic dressing was done with 10 % Betadine for skin and 5 % Betadine for conjunctival sac . For anaesthesia a mixture of 4- 5 ml of 2 % Lignocaine with Adrenaline and 0.5 % Bupivacaine premixed with hyaluronidase was taken in a syringe . It was then injected in the peribulbar space by a 26 G needle and light pressure was then applied for a couple of minutes for the block to act . Our aim for anaesthesia in this procedure is to obtain total anaesthesia and not total akinesia as patient can co-operate during the operative procedure .After block a second round of painting was done with Betadine . Draping was done and then the patient was ready for the surgery.

STEPS :

1. Exposure with lid speculum .
2. . Limbal stay suture was applied at the 6 O'clock position with 4-0 black silk .
3. 0.5 cc of Lignocaine was injected underneath the pterygium to elevate it .
4. . Identification of the entire breadth of the pterygium was done by noting the upper and lower folds of the pterygium .

5. . The conjunctiva over the fleshy fibrovascular mass was undermined throughout its entire width at the body of the pterygium .
6. . The conjunctiva at the body was cut across and the fleshy fibrovascular tissue was left intact underneath .
7. . The distal conjunctiva from the limbus was pulled up with a St Martin's forceps and was separated from the underlying fibrovascular tissue by sharp dissection of the fibrovascular strands from the mass to the under surface of the conjunctiva . A part of the conjunctiva was excised .
8. . After freeing the conjunctiva from the body of the fibrovascular mass , attention was turned to the head of the pterygium . The corneal epithelium 2 mm ahead of the head was sraped off by a no . 15 blade. This exposed the altered epithelium just adjacent to to the head of the pterygium which was thickened and more firmly attached to the cornea. A superficial delineating keratectomy at the leading edge was performed after tenting up the pterygium apex by a fine St Martin's forceps to obtain a superficial plane of dissection . The remainder of the pterygium head was carefully dissected from the superficial cornea in the lamellar fashion upto the limbus using crescent knife . Residual fibrous tissue on the cornea was removed by sharp dissection with a no . 15 blade .
9. Then the pterygium mass was separated from the underlying sclera exposing the bare sclera.
10. While dissecting the pterygium from the sclera distally , precaution was taken not to injure the medial rectus muscle .Then the fibrovascular mass was excised as much as possible thus exposing a crescentic bare sclera'area.
11. The bare sclera was lightly cauterized avoiding excess cautery that might lead to graft or even scleral necrosis .
12. Then the bare sclera was ready to receive the conjunctival auto graft.
13. Then the 6 O'clock traction suture was pulled to expose the superior limbus and conjunctiva
14. The limbal extent of the bare sclera area was measured with a Castrovejo'scalipers.
15. An area of conjunctiva at the superotemporal limbus , measuring lmm more than the bare scleral bed was demarcated with a sterile gentian violet marker pen.
16. Subconjunctival injection of 0.5 cc of 2 % Lignocaine was given with a 26 G needle at the proposed site of the donor graft in the region of the superotemporal conjunctiva to lift the conjunctiva away from the Tenon's fascia.
17. A small nick was made in the conjunctiva at the marked donor site and the conjunctiva was undermined throughout the entire extent separating the under surface of the conjunctiva from the tenon and advancing upto the limbus .Conjunctival flap was made free for the entire extent.
18. Then the cut conjunctiva was held with a non-toothed forceps and reflected back over the cornea and the limbal area was cleaned of tenon attachment . A crescent knife was used and carefully the limbal part of the graft was dissected from.
19. When the full extent was reached the attached end of the graft was cut with a fine Vannas scissors .
20. The graft was then held with plain scissors and brought over the bare area taking care to place the under surface of the graft over the sclera and the limbal side of the graft at the limbal side of the bare sclera.
21. Securing the graft with 10 -0 Vicryl sutures : First the four corner sutures were given and tied properly thereby fixing the graft . Three sides were then sutured to the recipient conjunctiva with numerous sutures sparing the limbal side . The sutures were cut flush to minimize irritation .
22. Lid speculum was removed and a sterile eye pad was applied.
23. Surgery time was noted from first incision until the lid speculum was removed.
24. The patients were started on steroid (prednisolone) eye drops 4 times daily for two weeks and twice daily for two weeks. An Antibiotic drop (Moxifloxacin) was also prescribed four times a day for a period of two weeks.

GROUP B:

With this approach first the pterygium and associated conjunctiva are excised, a thin film of blood clot is left over bare sclera any active bleeding is stopped by direct tamponade next a thin tenon free conjunctival autograft is fashioned.after the graft is aligned it is placed over the blood film in the bare area and the edges are held with forceps usually for 3 to 5 mins after that graft fixation occurs.

V. RESULTS AND ANALYSIS

Sex distribution:

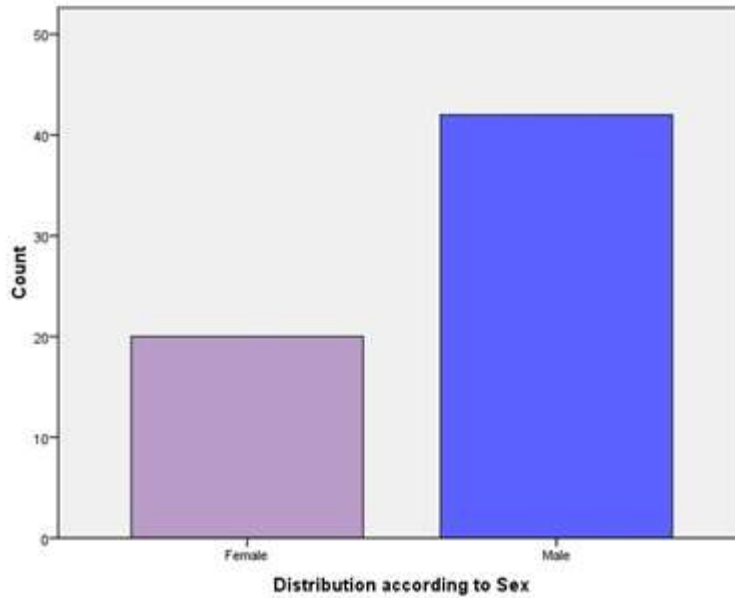


Figure 1 shows prevalence of pterygium higher in male

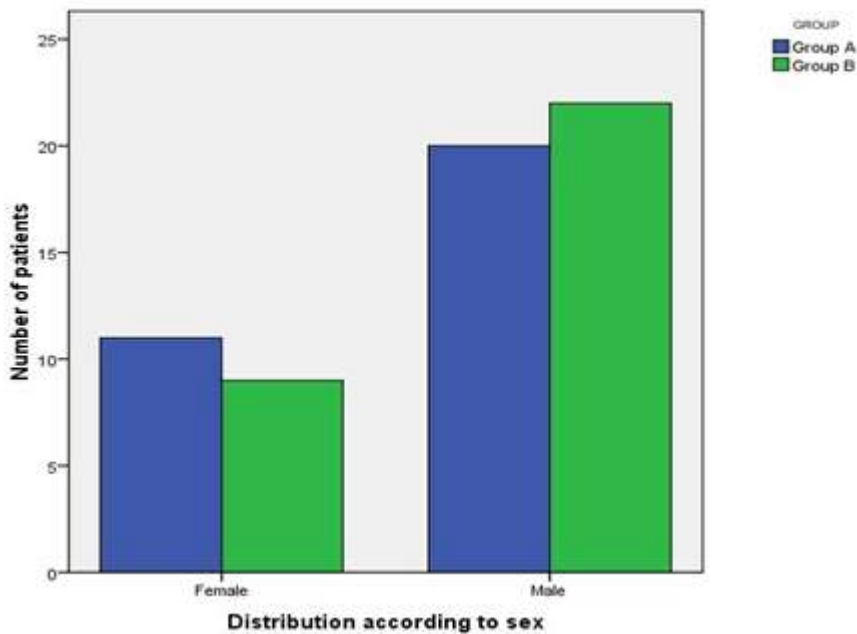


Figure 2 shows in both group A and group B prevalence of pterygium higher in males

Sex distribution

| | | | Sex | | Total |
|----------------|--------------------|--|--------|-------|--------|
| | | | Female | Male | |
| GROUP A | Number of patients | | 11 | 20 | 31 |
| | % within GROUP | | 35.5% | 64.5% | 100.0% |
| GROUP B | Number of patients | | 9 | 22 | 31 |
| | % within GROUP | | 29.0% | 71.0% | 100.0% |
| Total | Number of patients | | 20 | 42 | 62 |
| | % within GROUP | | 32.3% | 67.7% | 100.0% |

Table 1 shows pterygium is higher in males in both groups

Among 62 patients included in the study 20 were females (11 in group A and 9 in group B) and 42 were males (20 in group A and 22 in group B).

Thus this table shows that pterygium has a higher prevalence in males as mentioned in the available literature.

Demographic distribution:

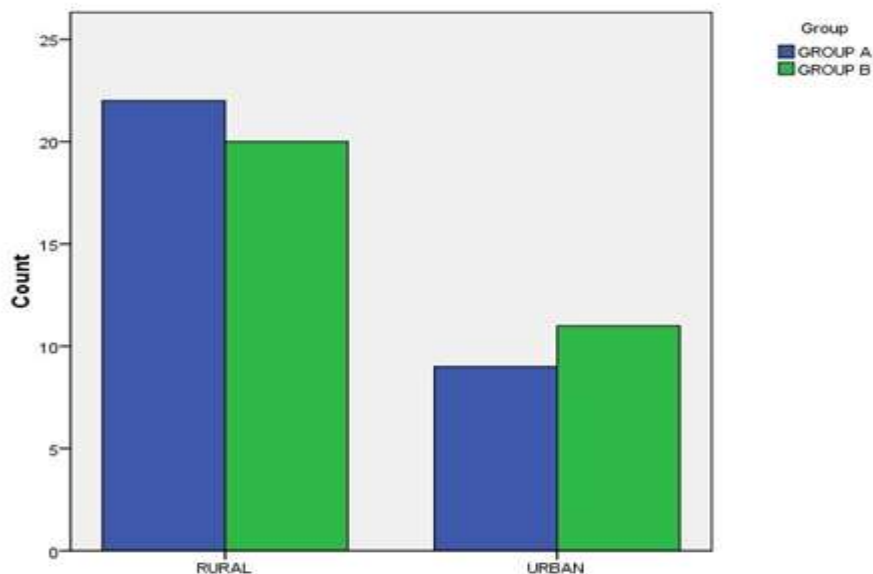


Figure 3 shows pterygium is more prevalent in rural areas in both groups

Demographic distribution

| | | Background | | Total |
|----------------|--------------------|------------|-------|--------|
| | | Rural | Urban | |
| GROUP A | Number of patients | 22 | 9 | 31 |
| | % within GROUP | 71.0% | 29.0% | 100.0% |
| GROUP B | Number of patients | 20 | 11 | 31 |
| | % within GROUP | 64.5% | 35.5% | 100.0% |
| Total | Number of patients | 42 | 20 | 62 |
| | % within GROUP | 67.7% | 32.3% | 100.0% |

Table 2 shows pterygium is higher in rural area

Majority of the patients who presented for surgery were from a rural background. 42 patients out of 62 (67.7%) were from rural background compared to 20 patients (32.3%) from urban

background. This is consistent with medical literature showing increased incidence of pterygium in people involved in outdoor activities like fishermen farmer etc

Age statistics:

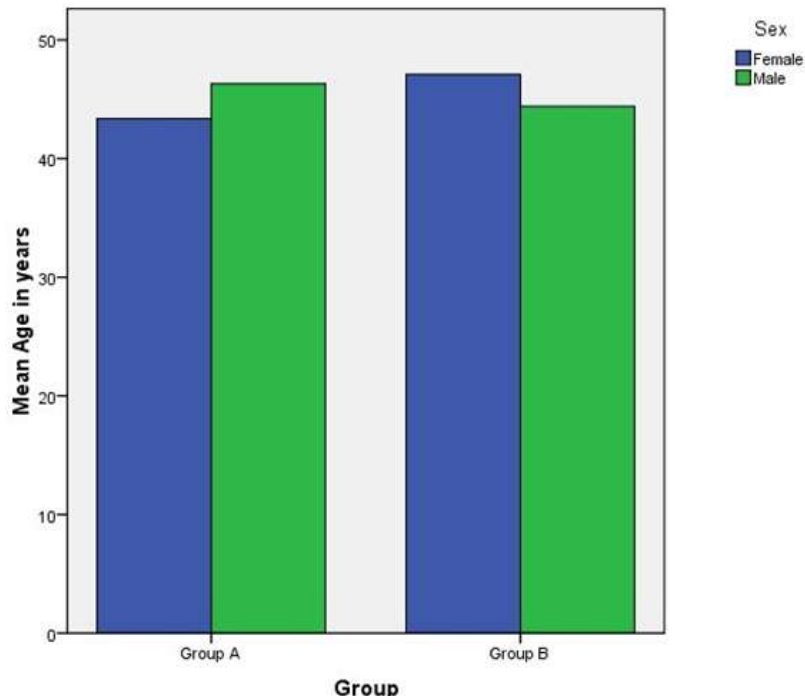


Figure 4 shows age group of patients population

Age statistics

| | |
|--------------------------|------|
| Total number of patients | 62 |
| Mean Age in years | 45.2 |
| Std. Deviation | 3 |
| Minimum Age in years | 9.43 |
| | 0 |

Table 3 shows mean age of patients was 45.23 years

The average age of patients were 45.23 years with a standard deviation of 9.43 . Minimum age was 28 years and maximum age was 65 years.

Grading preoperative pain and discomfort and watering

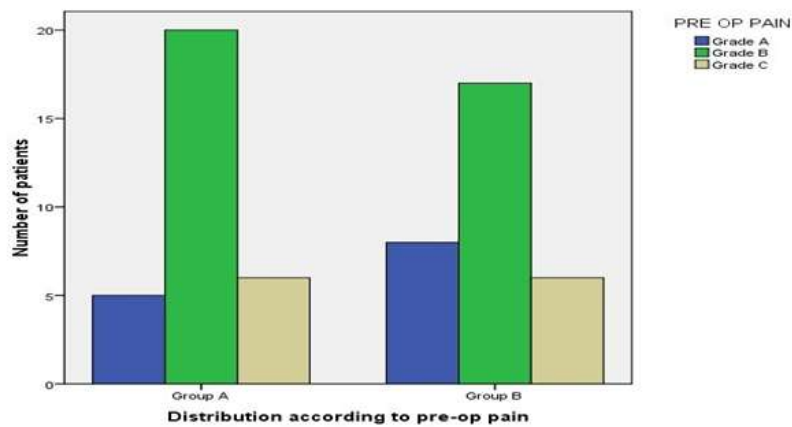


Figure 5 shows moderate preoperative pain is much more in group A

Distribution according to pre-op pain in both groups

| | | | GROUP | | Total |
|-------------|---------|--------------------|-------|-------|--------|
| | | | A | B | |
| PRE OP PAIN | Grade A | Number of patients | 5 | 8 | 13 |
| | | % | 38.5% | 61.5% | 100.0% |
| | Grade B | Number of patients | 20 | 17 | 37 |
| | | % | 54.1% | 45.9% | 100.0% |
| | Grade C | Number of patients | 6 | 6 | 12 |
| | | % | 50.0% | 50.0% | 100.0% |
| Total | | Number of patients | 31 | 31 | 62 |
| | | % | 50.0% | 50.0% | 100.0% |

Table 4 shows the difference in proportion of various grades of pre-op pain between two groups was not significant (Chi-square test, p value 0.626)

A questionnaire for symptom was prepared and the symptoms of pain discomfort and watering were graded on a scale of A to C. A is severe symptom and C is minimal. It showed 5

patients of GROUP A and 8 patients of group B had maximum symptoms. In 20 patients of group A and 17 patients of group B symptoms were moderate. While 6 in group A and 6 in group B had minimum symptoms. The difference in proportion of various grades of preoperative symptoms was not significant in two groups (p value 0.626).

Distribution of OT time in both groups

| Group | Total | Mean | Std. Deviation | Std. Error Mean | P-value |
|-----------------------|-------|-------|----------------|-----------------|---|
| OT TIME(in minutes) A | 31 | 49.29 | 5.261 | .945 | <0.05 (Significant by applying unpaired t-test) |
| B | 31 | 25.26 | 2.720 | .489 | |

Table 5 shows mean operative time of group A was 49.29 mins and group B was 25.26mins

Surgical (OT) time:

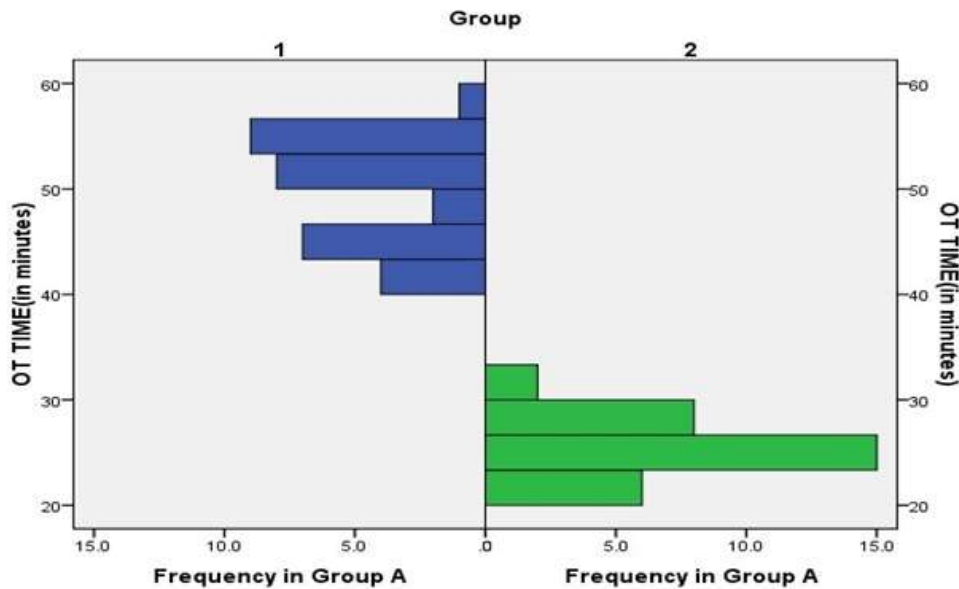


Figure 6 shows OT time in both group A and group B

The total operative time in each patient was recorded in minutes. The surgical time of group A was 49.29 ranging from a maximum of 60 mins to a minimum of 45 mins. The mean surgical time in

group B was 25.26 min ranging from a maximum of 30 mins to a minimum of 20 mins. Surgical time was significantly shorter in group B (p value <0.05)

Intraoperative complications:

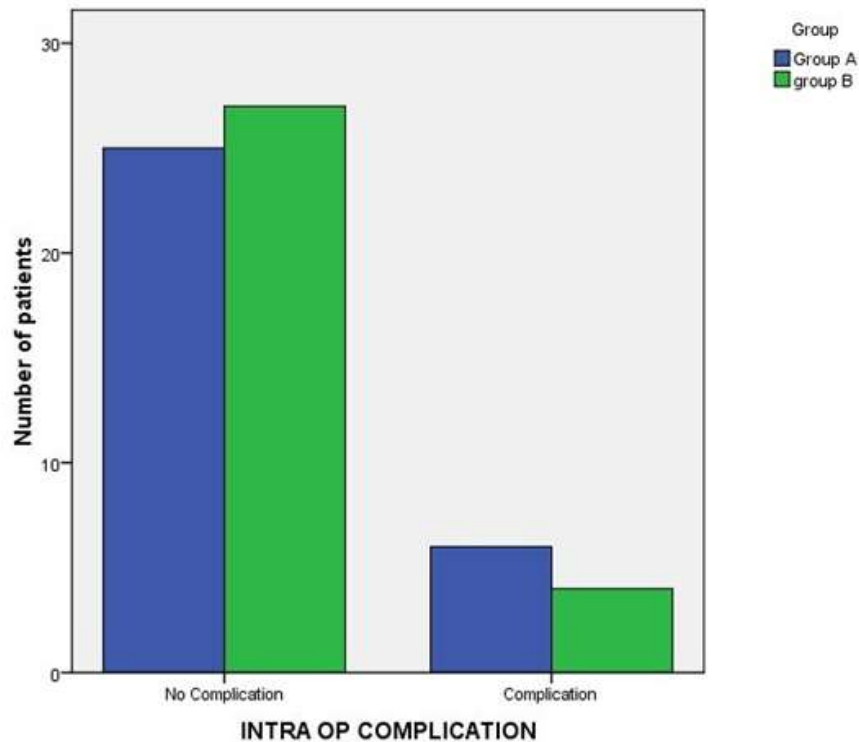


Figure 7 shows intraoperative complication in both group A and group B

Chi-square test showing INTRA-OP COMPLICATION in both groups

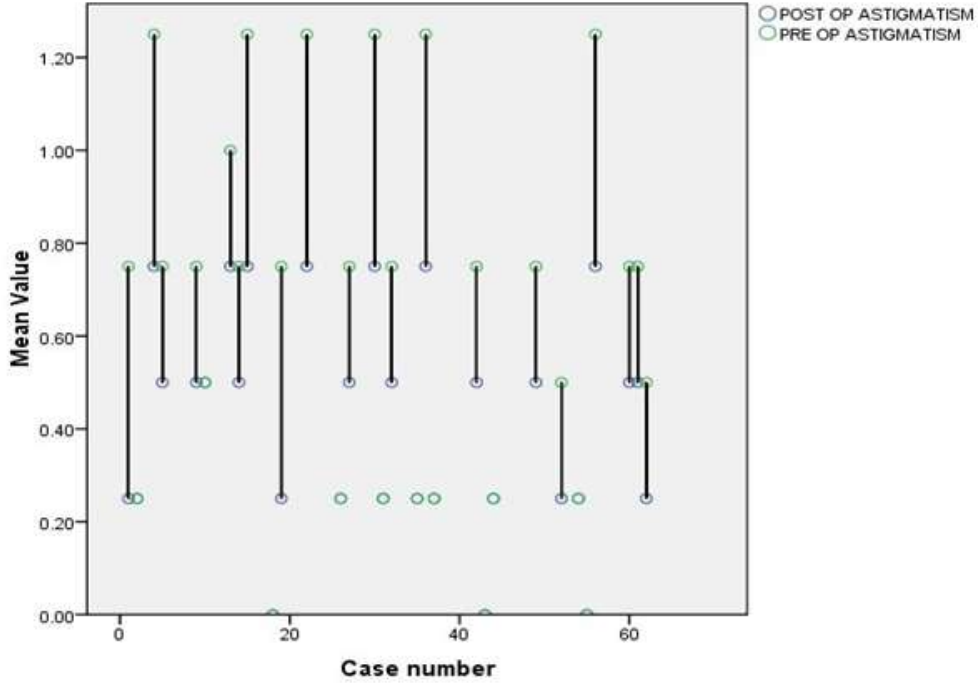
| | | GROUP | | Total |
|-----------------------|--------------------|-------------|-------------|--------------|
| | | A | B | |
| INTRA OP COMPLICATION | No patients % | 25 48.1% | 27 51.9% | 52 100.0% |
| | Yes patients % | 6 60.0% | 4 40.0% | 10 100.0% |
| Total % | Number of patients | 31 50.0% | 31 50.0% | 62 100.0% |

Table 6 shows intra-operative complication in both group A and group B

Only 6 patients of group A and 4 patients of group B had some intraoperative complication in the form of bleeding more than usual seen in pterygium surgeries. More bleeding was observed with suture that is group A. But the difference in

values in two groups was not statistically significant (p less than .366). Minimal cauterization was used to stop bleeding in group A. However no cauterization was applied in group B as it would affect the procedure.

Astigmatism:



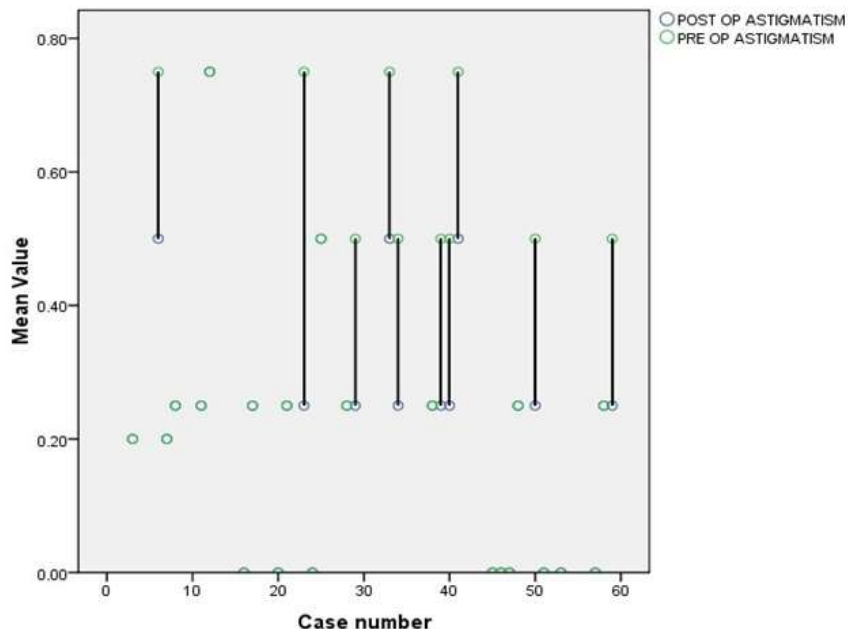
Drop-lines : showing change in Astigmatism in Group A

Change in Astigmatism in Group A

| | Mean | N | Std. Deviation | Std. Error Mean | P-value | Inference |
|----------------------------------|-------|----|----------------|-----------------|---------|---|
| Group A PRE OP ASTIGMATISM | .6452 | 31 | .40194 | .07219 | <0.05 | Significant (Significant t by applying paired t- test) |
| POST ASTIGMATISM OP | .4194 | 31 | .23618 | .04242 | | |

Table 7 showing pre and post operation changes of Astigmatism in group A

Astigmatism:



**Drop-lines: showing change in Astigmatism in Group B
 Change in Astigmatism in Group B**

| | Mean | N | Std. Deviation | Std. Error Mean | P-value | Inference |
|-----------------------------------|-------|----|----------------|-----------------|---------|--|
| Group B PRE OP ASTIGMATISM | .3113 | 31 | .26699 | .04795 | <0.05 | Significant (Significant by applying paired t-test) |
| POST OP ASTIGMATISM | .2226 | 31 | .18656 | .03351 | | |

Table 8 showing pre and post operation changes of Astigmatism in group B

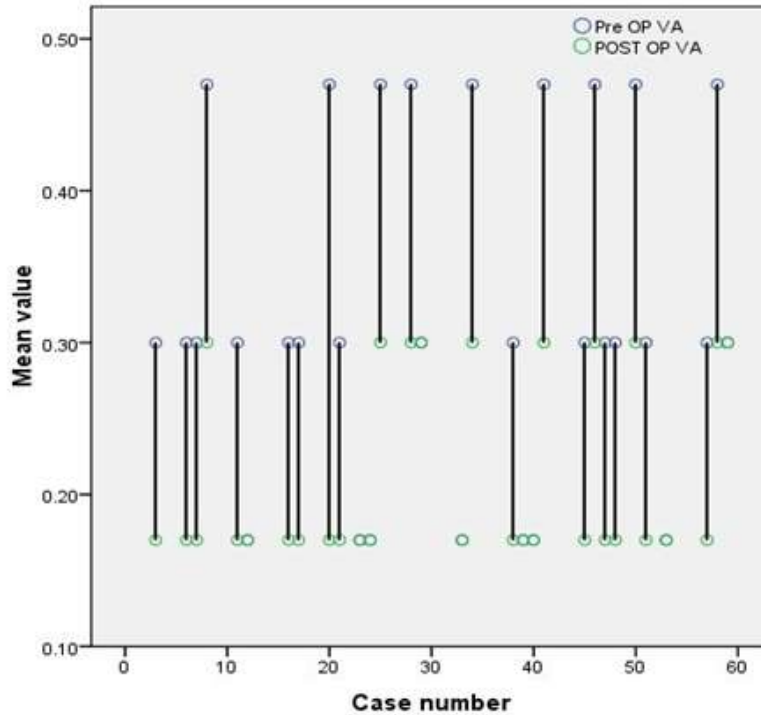
Preoperative and postoperative astigmatism was noted in all patients undergoing surgery. Mean preoperative astigmatism in group A was 0.624 and in group B mean preoperative astigmatism was 0.311. In both groups range was from 0 to 1.25Dcyl

Astigmatism was noted post operatively in diptores in all patients. Final astigmatism at the end of three month where compared with the pre

operative astigmatism. The difference between mean pre operative and post operative astigmatism in group A was 0.2258 . P value calculated was statistically significant < 0.05

The difference between mean preoperative and mean postoperative astigmatism in group B was 0.887. Pvalue calculated was statistically significant < 0.05

Visual acuity

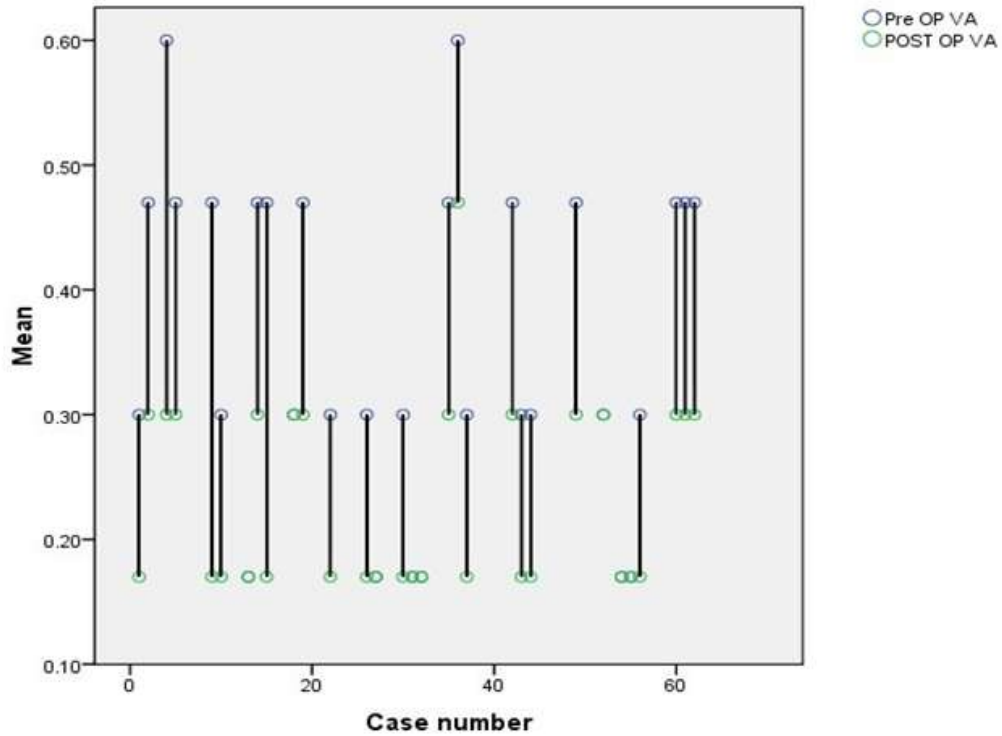


Drop-lines : showing change in Visual acuity in Group B

Change in Visual acuity in Group B

| | Mean | N | Std. Deviation | Std. Error Mean | P-value | Inference |
|--------------------------|-------|----|----------------|-----------------|---------|---|
| Group B Pre OP VA | .3200 | 31 | .11045 | .01984 | 0.00 | Significant (Significant t by applying Paired t-test) |
| POST OP VA | .2119 | 31 | .06177 | .01110 | | |

Table 9 showing pre and post operation changes of Visual acuity in group B



Drop-lines : showing change in Visual acuity in Group A

Change in Visual acuity in Group A

| | Mean | N | Std. Deviation | Std. Error Mean | P-value | Inference |
|-------------------|-------|----|----------------|-----------------|---------|---|
| Group A | | | | | | Significant |
| Pre OP VA | .3600 | 31 | .13122 | .02357 | 0.00 | (Significant by applying Paired t-test) |
| POST OP VA | .2342 | 31 | .07788 | .01399 | | |

Table 10 showing pre and post operation changes of Visual acuity in group A

The preoperative assessment of the involved eyes included recording vision of LOGMAR equivalent of Snellen visual acuity to subject them to statistical analysis. Visual acuity ranged from maximum 0.17 to minimum 0.60. The mean operative visual acuity in group A was 0.358 and group B was 0.346.

Visual acuity was noted postoperatively in Logmarunits in all the patients in all visits.Final

visual acuity at the end of 3 months were compared with preoperative vision.the change in mean preoperative and postoperative visual acuity in group A was 0.125 (.3600-.2342) which is statistically significant (pvalue less than 0.00) . The difference in mean preoperative and postoperative visual acuity in group was 0.1081(0.3200-0.2119) which is statistically significant (P value 0.00)

Post operative pain and discomfort

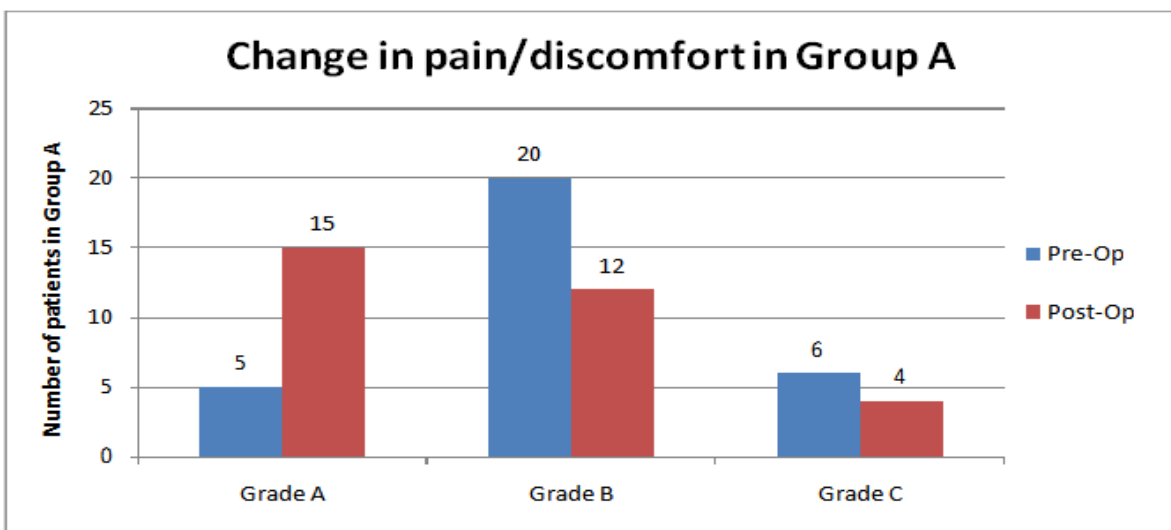


Figure 8 shows pre and post operative pain in group A

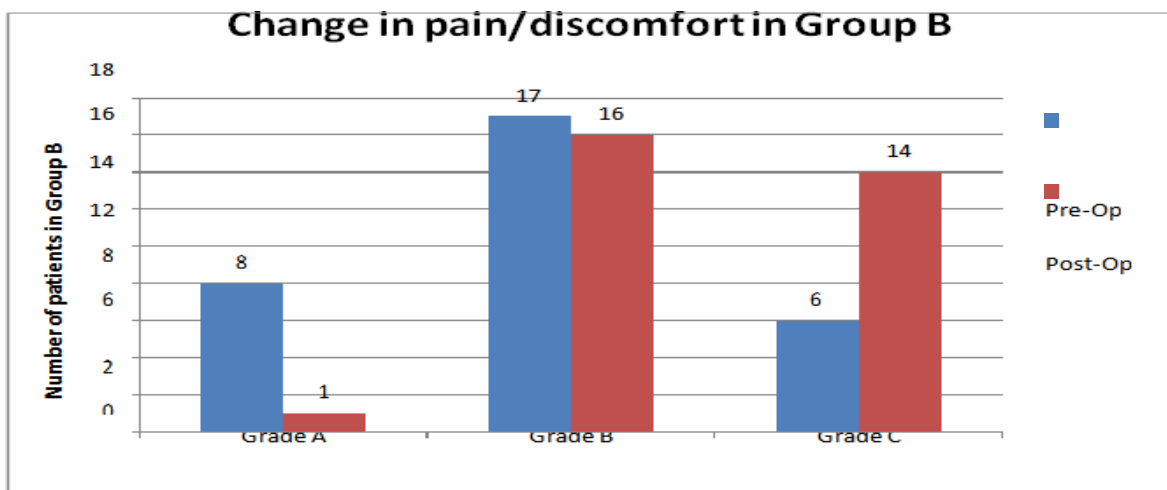


Figure 9 shows pre and post operative pain in group B

At the end of post operative week, there was as in case in the number of patient with severe pain and discomfort in group A. The grade of moderate pain and discomfort in group A decreased.

Patients with minimum pain and discomfort decreased in number in group A. In group B patients overall pain and discomfort was decreased in first post operative week. 13 patients of group B had minimum increase of symptoms.

Graft related compliation:

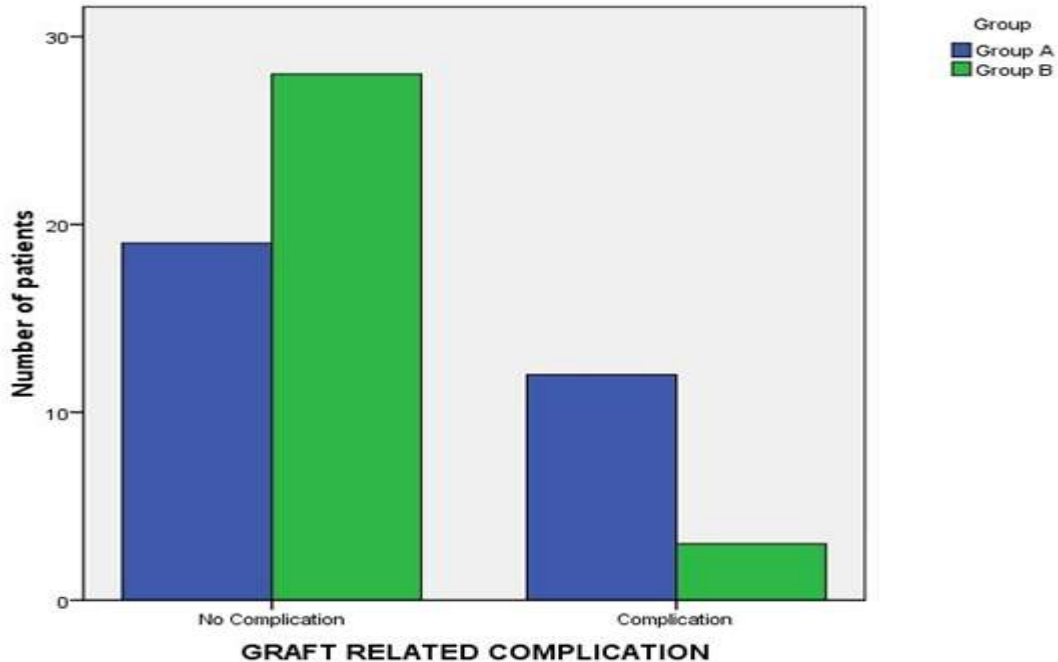


Figure 10 shows post operative graft related complication in both group A and B

Chi-square test showing GRAFT RELATED COMPLICATION in both groups

| | | | GROUP | | Total |
|----------------------------|-------|--------------------|-------------|-------------|--------------|
| | | | A | B | |
| GRAFT RELATED COMPLICATION | No % | Number of patients | 19 40.4% | 28 59.6% | 47 100.0% |
| | Yes % | Number of patients | 12 80.0% | 3 20.0% | 15 100.0% |
| Total % | | Number of patients | 31 50.0% | 31 50.0% | 62 100.0% |

Table 11 shows post operative graft related complication in both group A and B

Graft related complication was seen in 12 patients of group A and 3 patients of group B. complication was higher in group A and difference was statistically significant p value less than 0.008

In group A 10 patients had subconjunctival haemorrhage and 2 patients had cyst formation,

there was 0 graft loss in group A. in group B 3 patients had graft loss.

Subconjunctival haematoma resolved spontaneously while patient with graft loss and conjunctival cyst formation was reconsidered for surgery.

Recurrence:

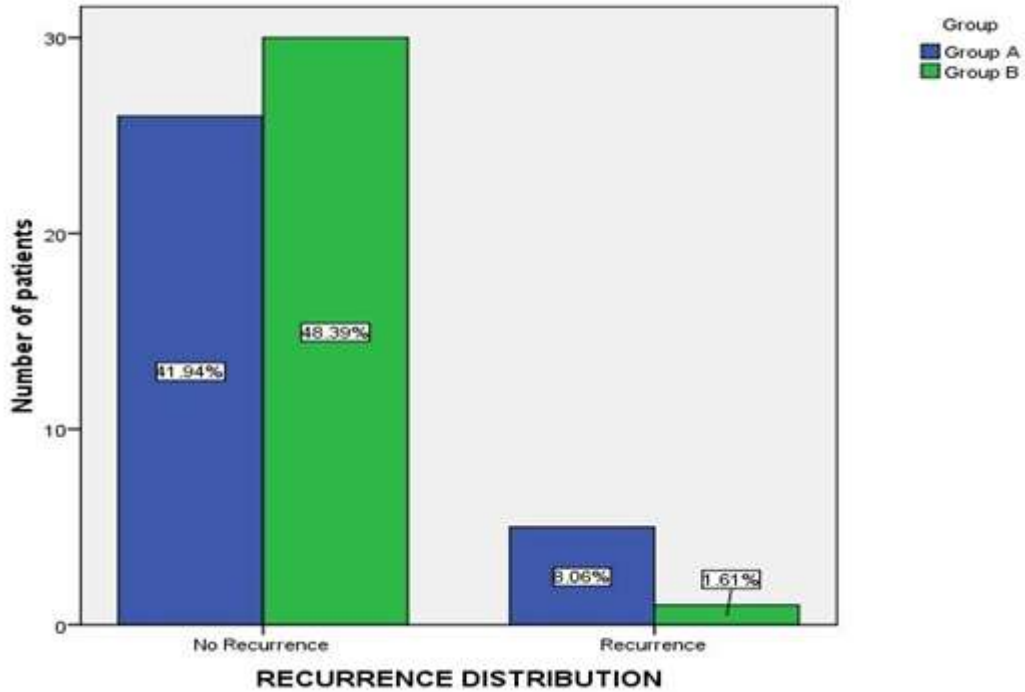


Figure 11 shows recurrence in both group A and B

Chi-square test showing history of recurrence in both groups

| | | GROUP | | Total |
|------------|---|-------------|-------------|--------------|
| | | A | B | |
| RECURRENCE | No | 26 | 30 | 56 |
| | Number of patients % within RECURRENCE | 46.4% | 53.6% | 100.0% |
| | Yes | 5 | 1 | 6 |
| | Number of patients % within RECURRENCE | 83.3% | 16.7% | 100.0% |
| Total | Number of patients % within RECURRENCE | 31 50.0% | 31 50.0% | 62 100.0% |

Table 12 shows recurrence in both group A and B

5 patients of group A had recurrence and 1 patient of group B had recurrence. Recurrence was higher in group A but difference is not statistically significant.

VI. SUMMERY AND CONCLUSION

This present study was institute based and conducted in outpatient dept of RG Kar Medical College. The aim of the study was to compare results of pterygium surgery using 10-0 nylon suture and no suture no glue technique.

All patients were selected after proper

screening procedure. They underwent a thorough relevant systemic examination preoperatively. After randomisation in half of the operated eyes the conjunctival graft was attached to sclera by 10-0 nylon suture. In other half graft attached by suture less glue free method. All surgical procedure were performed by same surgeon. A follow up after 3 months postoperatively was done.

The study result suggest suture less glue free technique reduces operative time post operative discomfort pain than use of 10-0 nylon suture. No significant statistical difference was found in graft related complication.

It is a new emerging method and needs long term follow up to determine recurrence rate.

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