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A Comparitive Study of Suturing And Sutureless/ Glue Free Limbal Conjunctival Autograft for Primary Pterygium Surgery - A Hospital Based Study

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Abstract:
Purpose: To compare and evaluate the safety and efficacy of suture less glue free limbal conjunctival autograft and conventional sutured autograft for the management of primary pterygium.
Methods: *The Randomized clinical trial was done with 100 male and female patients with diagnosis of primary/ Progressive pterygium from October 2014 to September 2016. The study groups randomly selected into 2 groups using simple randomization technique. Experimental group underwent autologous conjunctival graft fixation without sutures (sutureless) and control group underwent autologous conjunctival graft fixation with sutures.*
Results: *Early graft retraction occurred 6% in Experimental group whereas it was present among 14% in control group. Conjunctival granuloma occurred in 2% and 6% cases, corneal scar in 4% and 8% cases, graft dehiscence in 8% and 0% cases in each group respectively. Recurrence rate was almost 6% and 8% respectively in both groups.*
Conclusion: *In recent times, the autologous conjunctival graft fixation without sutures is a simpler, quicker and more comfortable surgical procedure. Replacing sutures with tissue adhesives may shorten the operating time, improve postoperative comfort, and avoid suture related complications*
Keywords: *Autologous conjunctival graft, limbal conjunctival autograft, Pterygium,*

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I. Introduction

The term pterygium comes from the ancient Greek word (pteryx) = wing and (gion) = fin. It is a degenerative ocular surface disorder characterized by fibrovascular growth of the subconjuctival tissue on to the cornea. A slightly higher incidence in males is reported which may be attributed to different life-styles between genders (with males spending more time out-doors) in many countries [1,2]. It is caused by chronic Ultraviolet exposure and is characterized by proliferation, inflammatory infiltrates, fibrosis and angiogenesis and extracellular matrix breakdown. Limbal stem cell disturbances resulting from conjunctival exposure to ultraviolet light are most commonly accepted explanations for its occurrence. [3-5] There are evidence implicating that stem cell failure, genetic component, anti- apoptotic mechanisms, cytokines, growth factors, extracellular matrix remodeling, immunological mechanisms and viral infections also contribute to the pathogenesis of the disease. [6]

Pterygium is a wing like encroachment of the conjunctiva over the cornea mostly on the nasal side. The possible explanation is the increased actinic exposure in this region secondary to ultraviolet light reflection from the nose. Also, the anterior part of the eye act as a lens, with light incident on the temporal cornea being focused across the anterior chamber onto the nasal limbus. [7,8].

Symptoms associated with pterygium development include chronic ocular surface inflammation, tearing, astigmatism and blurred vision due to optical axis involvement on the corneal surface. Pterygium is mostly an asymptomatic condition. Conditions like proximity to the visual axis resulting in diminution of vision, significant astigmatim, Restricted of ocular movements, Diplopia , Cosmetic concern dictates for surgical intervention[13].It can be easily excised but has a high rate of recurrence rate ranging from 24% to 89% [14]. Numerous adjunctive measures have been described to reduce the recurrence rates after its excision. These maybe broadly classified as medical methods, beta irradiation and surgical methods. Limbal -conjunctival auto graft is currently the most popular surgical procedure as it has been suggested that including the limbal stem cells act as a barrier to the conjunctival cells migrating onto the corneal surface. Conjunctival auto graft surgery gained popularity in the 1980s. It involves the removal of the pterygium, essentially leaving an area of bare sclera that is closed by the movement of a free conjunctival transplant from another part of the ocular surface, usually from the supero-temporal limbus. This method of removal appears to reconstruct a more normal limbal anatomy with a better cosmetic result with respect to vascularisation of conjunctiva [15]. The most common

method of autograft fixation is suturing. Fibrin glue is the most recent among all adhesives and is gaining acceptance world over for use in treatment of various ocular conditions. However, the major concern of the commercial fibrin glue is the cost and the potential risk of transmitted infection. [16]. Suture less and glue-free conjunctival autograft is a new, easy and cheaper technique for the management of pterygium. In this study, we describe a cost-effective method of achieving conjunctival autograft adherence in pterygium surgery using autologous fibrin derived from blood, without the use of sutures or commercially available fibrin glue. Further , we compared and evaluate the safety and efficacy of suture less glue free limbal conjunctival autograft and conventional sutured autograft for the management of primary pterygium.

II. Materials And Method

The Randomized clinical trial was done with 100 male and female patients with diagnosis of primary/ Progressive pterygium attending at OPD clinics and admitted at Department of Ophthalmology, Agartala Government Medical College from October 2014 to September 2016. Patients over 18 year with diminution of vision either because of astigmatism or encroachment on papillary area and/or with Rapid growth with cosmetic concern are included in the study. While patients with Recurrent /atrophic pterygium, ocular surface disease, Sjogren syndrome , Dry eye disease, Pseudo-pterygium , History of anticoagulants intake and History of previous ocular surgery were excluded from the study. These patients were assigned to receive conjunctival auto graft. Preoperatively, each patient underwent complete ocular examination.

The study groups randomly selected into 2 groups using simple randomization technique. In this study randomization technique used is coin toss. For each group equal number of subjects were enrolled. In group A i.e Experimental group total 50 Subjects were enrolled and group B i.e. Control group same number of subjects were enrolled. Experimental group underwent autologous conjunctival graft fixation without sutures (sutureless) and control group underwent autologous conjunctival graft fixation with sutures. Preoperative investigations like complete haemogram, Random blood sugar, Bleeding time, Clotting time were performed. All the patients were informed about the advantages and disadvantages of both the procedures. Written consent was taken and preparation of local parts was done. All the patients were advised to apply Moxifloxacin 0.5% eye drops to apply 1 drop 4 times/day 3 days prior to the surgery.

Autologous Conjunctival Graft Fixation Without Sutures (Sutureless):

Pterygium excision was done under peribulbar aneasthesia. Excision consisted of detachment of the pterygium head and dissection the body from the overlying conjunctiva in a smooth clear plane as possible using blunt and sharp dissection. The body of the pterygium was dissected 4 mm from the limbus, down to the bare sclera. Blunt and sharp dissection was done for separating the fibrovascular tissue from the surrounding conjunctiva. Subsequently, the sub conjunctival pterygium tissue and the thickened segment of conjunctiva and tenon's capsule was excised leaving bare sclera. Then the size of bare sclera was measured with calipers and the area was documented in square meters.

For harvesting the conjunctival autograft, the globe was be rotated downwards. The superotemporal area was irrigated with tryphan blue. It has two advantages. Trypan blue stains the epithelial surface and hence allows easier identification of the graft side. Furthermore, incisions can be made out easily due to conjunctival surface staining. The size and extent of the autograft was measured and four points were marked over the stained conjunctiva, two at the posterior limbus and two corresponding points behind the limbus at precalculated distances based on the grade of the pterygium. The graft was rectangular in shape, and the average size of the graft was 5 mm ×7 mm. Tenon's free limbal based conjunctival autograft was prepared.

A thin layer of fresh blood is required over the bare sclera to provide autologous fibrin. After pterygium excision, if no blood was evident at the recipient bed, small perforating veins or capillaries were deliberately ruptured. Any excess bleeding was cauterized. At this stage , the graft was gently slided to the recipient bed with the epithelial side up and keeping the limbal edge toward the limbus . Haemostasis was allowed to occur spontaneously without use of cautery to provide autologus fibrin to glue the conjunctival autograft naturally in position without tension . The graft was kept in position for 10 minutes by application of gentle pressure over the graft. A subconjunctival injection of gentamycin and dexamethasone was given. A drop of povidone iodine was instilled at the end of surgery and the speculum was gently removed. Eyelids were closed taking care not to dislodge the graft. An eye pad was placed for 24 hours. [17, 18, 19]

Autologous Conjunctival Graft Fixation With Sutures:

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done to stop the bledding. Then the size of bare sclera was measured with calipers and the area will be documented in $mm^{2.}$

For harvesting the conjunctival autograft, the globe was rotated downwards. The superotemporal area was irrigated with tryphan blue. The size and extent of the autograft was measured .The graft was rectangular in shape, the size of the graft was 0.5 mm more than the size of the defect. Tenon's free limbal based conjunctival autograft was prepared. Forceps is used to gently slide the graft to the recipient bed with the epithelial side up and keeping the limbal edge toward the limbus. The graft was sutured in position with 8-0 nylon. First the two limbal corners were sutured into the episclera and then into the conjunctiva keeping the limbal edge of the graft on gentle stretch then the posterior corners of the graft were sutured to the bulbar conjunctiva and additional sutures were placed to close the wound edges. A subconjunctival injection of gentamycin and dexamethasone was given. A drop of povidone iodine was instilled at the end of surgery and the speculum was gently removed. Eyelids were closed while taking care not to dislodge the graft. An eye pad was placed for 24 hours [17, 18, 19]

Post-operative period:

Antibiotic drops Moxifloxacin 0.5% eye drops were prescribed 4 times daily for 2 week, and then topical steroid Prednisolone Acetate 1% eye drop was given in tapering doses over the 3-4 weeks. Anti-inflammatory drugs were given to all the patients. Patients were instructed not to rub the eye and to wear sun glasses to reduce ultra violet exposure.

Post-operative follow up :

Patients were followed up postoperatively on day1, 1 week, 1month, 2months and 6 months for ocular discomfort like pain, foreign body sensation, itching, hyperemia and chemosis. The main postoperative outcomes noted were the recurrence rate which was defined as fibrovascular proliferation invading the cornea more than 1.5 mm at the site of previously excised pterygium, graft dehiscence, graft retraction and the gain in uncorrected visual acuity (UCVA). The secondary outcomes were duration of surgery, postoperative pain, foreign body sensation, photophobia, hyperemia, chemosis, overall satisfaction and the complications as, persistent epithelial defect, Dellen formation, Inclusion cyst, Pyogenic granuloma, conjunctival edema, corneo-scleral necrosis, infective scleritis, keratitis and endophthalmitis.

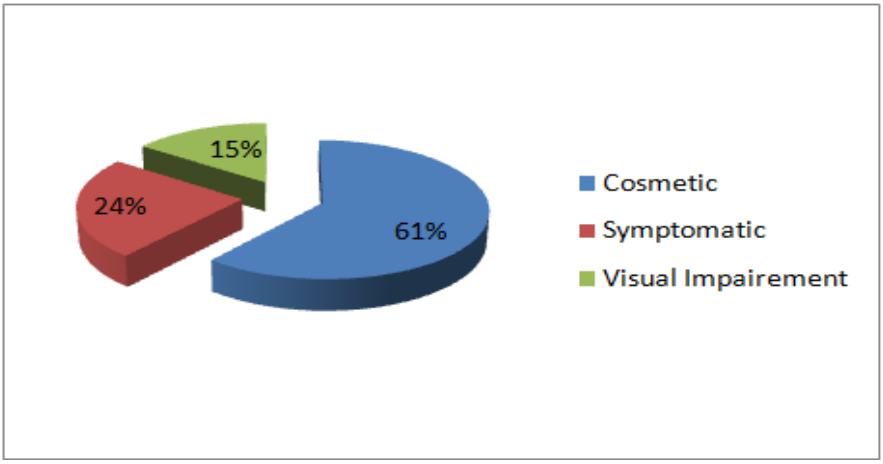
III. Data Analysis

The data collected entered in Microsoft Excel and analyzed using statistical package of social science (SPSS) version 15. The association between two variable tested using chi-square test, Fisher's exact test. P value set as 0.05% to consider statistical significance.

IV. Result

The present study enrolled 100 subjects, of which 50 were in autologous conjunctival graft fixation without suturesand 50 were in autologous conjunctival graft fixation with suturesgroup. Total 124 subjects attended in the inpatient or outpatient department of ophthalmology, of them 100 were included .The age ranges of the subjects were 18 - 75 years with mean (SD) age 39.64 (±15.45) years of which the study subjects were 60% male and 40% female with primary pterygium. most of the experimental and control groups individuals were field worker or daily labourer 64% and 54% respectively. Right eye involvement was more in the study subjects. Both the eye was involved in 6% patients.

Fig no- 1: Pie chart showing Indication of surgery (n=100)



The above pie chart shows most common indication of surgery in this study was cosmetic reason, 61% followed by symptomatic causes (Redness, foreign body sensation, itching, watering etc), 24% and visual disturbance in 15% cases.Mean duration of operation time in experimental group was 12.16 (SD ± 3.06) minutes and in control group was 20.36 (SD ± 3.84) minutes.

Table no-1:Association Of Post-Operative Discomfort Between Autologous Conjunctival Graft Fixation Without Sutures And With Sutures Group At Day 1 Of Post-Operative Follow Up (N=100).

Variable		Group (N=100)		Significance
		Autologous conjunctival graft fixation without sutures, n= 50 (%)	**Autologous conjunctival graft fixation by sutures group, n=50 (%)**	
Pain	Present	8 (16%)	18 (36%)	**P= 0.03** *
	Absent	42 (84%)	32 (64%)	
Total		50 (100%)	50 (100%)	100
Foreign Body sensation	Present	10 (20%)	21 (42%)	**P= 0.03 ***
	Absent	40 (80%)	29 (58%)	
Total		50 (100%)	50 (100%)	100
Itching	Present	7 (14%)	18 (36%)	**P= 0.02 ***
	Absent	43 (86%)	32 (64%)	
Total		50 (100%)	50 (100%)	100
Hyperemia	Present	15 (30%)	24 (48%)	P= 0.10 *
	Absent	35 (70%)	26 (52%)	
Total		50 (100%)	50(100%)	100
Chemosis	Present	9 (18%)	15 (30%)	P= 0.24 *
	Absent	41 (82%)	35 (70%)	
Total		50 (100%)	50 (100%)	100

*p value calculated using Chi-square Test.

The above table shows association of post-operative discomfort between autologous conjunctival graft fixation without sutures and autologous conjunctival graft fixation by sutures group. It is seen that pain was more common (36%) in second group compared to first group (16%). This difference is statistically significant (p= 0.03). Foreign body sensation was perceived by 42% patients in second group and 20% in first group. This difference is also statistically significant (p= 0.03). Itching of operative eye was seen in 36% and 14% of cases and this difference is significant statistically (p= 0.02). Other post-operative symptoms like hyperemia and chemosis were also commoner in autologous conjunctival graft fixation by sutures group and these are not statistically significant.

Table no- 2: Association Between Post-Operative Discomfort In Autologous Conjunctival Graft Fixation Without Sutures And With Sutures Group At Day 7 Of Post-Operative Follow Up (N=100).

Variable		Group (N=100)		Significance
		Autologous conjunctival graft fixation without sutures, n= 50 (%)	**Autologous conjunctival graft fixation with sutures group, n=50 (%)**	
Pain	Present	3 (6%)	4 (8%)	**P= 1.0**#
	Absent	47 (94%)	46 (92%)	
Total		50 (100%)	50 (100%)	100
Foreign Body sensation	Present	6 (12%)	15 (30%)	**P= 0.04***
	Absent	44 (88%)	35 (70%)	
Total		50 (100%)	50 (100%)	100
Itching	Present	3 (6%)	9 (18%)	**P= 0.12 ***
	Absent	47 (94%)	41 (82%)	
Total		50 (100%)	50 (100%)	100
Hyperemia	Present	8 (16%)	11 (22%)	P= 0.61 *
	Absent	42 (84%)	39 (200%)	
Total		50 (100%)	50 (100%)	100
Chemosis	Present	6 (12%)	10 (20%)	P= 0.41 *
	Absent	44 (88%)	40 (80%)	
Total		50 (100%)	50 (100%)	100

#p value calculated using Fisher's Exact Test, p value calculated using Chi-square Test.

The above table shows association of post-operative discomfort between autologous conjunctival graft fixation without sutures and autologous conjunctival graft fixation by sutures group. Foreign body sensation was perceived by 30% patients in second group and 12% in first group. This difference is also statistically significant (p= 0.03). Other post-operative symptoms like Pain, itching, hyperemia and chemosis were also commoner in autologous conjunctival graft fixation by sutures group and these are not statistically significant.

Table no- 3:Association between post-operative discomfort in autologous conjunctival graft fixation without sutures and sutures group at day 30 of post-operative follow up.

Variable		Group		Significance
		Autologous conjunctival graft fixation without sutures, n= 50 (%)	**Autologous conjunctival graft fixation with sutures group, n=50 (%)**	
Pain	Present	1 (2%)	4 (8%)	P= 0.36 #
	Absent	49 (98%)	46 (92%)	
Total		50 (100%)	50 (100%)	100
Foreign Body sensation	Present	1 (2%)	2 (4%)	P= 0.61 *
	Absent	49 (98%)	48 (96%)	
Total		50 (100%)	50 (100%)	100
Itching	Present	2 (4%)	3 (6%)	P= 1.0 #
	Absent	48 (96%)	47 (94%)	
Total		50 (100%)	50 (100%)	100
Hyperemia	Present	2 (4%)	3 (6%)	P= 1.0 #
	Absent	48 (96%)	47 (94%)	
Total		50 (100%)	50 (100%)	100
Chemosis	Present	0 (0%)	2 (4%)	P= 0.49 #
	Absent	50 (100%)	48 (96%)	
Total		50 (100%)	50 (100%)	100

#p value calculated using Fisher's Exact Test, *p value calculated using Chi-square Test

The above table shows association of post-operative discomfort between autologous conjunctival graft fixation without sutures and autologous conjunctival graft fixation by sutures group. All post-operative symptoms like Pain, foreign Body sensation, itching, hyperemia and chemosis also commoner in autologous conjunctival graft fixation by sutures group and these are not statistically significant.

Table no-4: Association between post-operative complication in autologous conjunctival graft fixation without sutures and with sutures group in post-operative followup (n=100).

Variable	Group (N= 100)	
	Autologous conjunctival graft fixation without sutures, n= 50 (%)	**Autologous conjunctival graft fixation with sutures group, n=50 (%)**
Early Graft Retraction	3 (6%)	7 (14%)
Conjunctival Granuloma	1 (2%)	3 (6%)
Corneal Scar	2 (4%)	4 (8%)
Scleral Necrosis	0 (0%)	0 (0%)
ScleralThinning	0 (0%)	0 (0%)
Graft Dehiscence (failure)	4 (8%)	0 (0%)
Graft Necrosis	0 (0%)	0 (0%)
Symblepheron	0 (0%)	0(0%)
Recurrence	3 (6%)	4(8%)

The above table compared occurrence of post-operative complications among the autologous conjunctival graft fixation without sutures and autologous conjunctival graft fixation with suture groups. Early graft retraction occurred 6% in first group whereas it was present among 14% in second group. Conjunctival granuloma occurred in 2% and 6% cases, corneal scar in 4% and 8% cases, graft dehiscence in 8% and 0% cases in each group respectively. In one patient graft dehiscence developed with eye trauma on the third postoperative day. In another patient it occurred following vigorous rubbing of the eye on the fourth postoperative day. In two

patients it occurred due to inclusion of Tenons capsule leading to lack of adhesion, graft edema and thickening, which was seen on the fifth post-operative day in one patient and the seventh post-operative day in the other patient. All four patients were treated by suturing the same graft with 8-0 nylon .

Early graft retraction with exposure of scleral bed occurred in 3 eyes (6%) in group 1 and in 7 eyes (14%) in group 2 within the first postoperative week due to conjunctival edema and chemosis. All cases were resolved with conservative management except one patient from group 1 who was managed with (8-0 nylon) sutures. Both the graft dehiscence occurred in 2nd post-operative day. Reposition of both the grafts were done by iris spatula andbandage was given for 48 hours. After 48 hours both the patients recovered. The rate of recurrence in autologous conjunctival graft fixation without sutures group was 6% but in autologous conjunctival graft fixation by sutures group was 8%.

V. Discussion

The aim of the present study is to see the outcome of suture less and glue free technique with suturing usage in fixation of conjunctival autograft in the management of primary pterygium. In this study out of hundred subjects were enrolled majority of the subjects were in the age group of 21 to 40 years of age, 51% with mean (SD) age 39.64 (±15.45) years. Sharma Ashok et al(2015) in a similar study enrolled 80 patients, mean age of the study population was 40.78 years (range, 19-80 years).[20,21,22].In this study 60% of the participants were male and 40% were female. Kumar Nishant et al found similar finding in their study 66.67% male and 33.33% female**.** [23,24].There were varieties of occupational participants in this study with predominant occupation being field worker or daily labourer; 64% and 54% in experimental group and control group respectively. Similar finding were present in another study by Kumar Pankaj et al (2016)which showed that predominant occupation of the study subjects were field worker or daily labourer, 59.37% [25]. Our study found right eye involvement was more in the subjects. The right eye was involved in 59% patients whereas left eye was involved in 41% and 6% cases had bilateral eye involvement. A study conducted by Sharma A et al found right eye involvement in 43.75% and left eye involvement 56.25% cases.

This study revealed mean duration of surgical time required in autologous conjunctival graft fixation without sutures 12.16 minutes and that of Autologous conjunctival graft fixation by sutures was 20.36 minutes. Study conducted by *Dr. H. Koc* explained mean surgical timein Tisseel fibrin glue group was 23.95 min (between 18-21 min) and 30.55 min (between 25-38 min) in suture group. [26,27].The most common indication of surgery in this study was cosmetic reason, 61% followed by symptomatic causes (Redness, foreign body sensation, itching, watering etc), 24% and visual disturbance in 15% cases. A study conducted by Kubrey Sooraj Singh et alfound most common cause of pterygium surgery was Cosmetic, followed by visual disturbance, 18.2% and recurrence 9%. Therefore, the results of the our study in respect to indication of surgery are comparable to studies cited above.[28].Post-operative pain was present in experimental and control groups at day 1, 16% and 36% respectively then gradually decreased on day 7,(6% and 4% respectively), day 30, (2% and 8%) respectively and finally subsided on day 60. Study conducted by Lt Col Nitin Vichare et al showed Pain was present in fibrin group in day 1(46.6%) and then gradually decreased over day 3, (16.6%), day 7, (8%) and finally subsided on day 7. In suture group all the patients experienced pain on day 1 and subsided on day 14. A study by Shaaban A.M. Elwan showed postoperative pain in sutureless and glue free conjunctival limbal autograft group was significantly lower ($P<0.003$) than sutured group on day 3, 1st, 2nd and 3rd of post operative week follow up period. A similar study conducted by P. Peeush et al showed postoperative pain in autologous blood group on day 1 , day 7 and day 30 was 60%, 32% and 32% respectively. [29, 30],

The present study denotes foreign body sensation on post-operative follow up was higher in autologous conjunctival graft fixation by sutures than in autologous conjunctival graft fixation without sutures. At day 1,foreign body sensation was present in autologous conjunctival graft fixation by sutures (42%), then it gradually decreased at day 7 (30%), day 30 (4%) and day 60 (2%) over post-operative follow up days. In autologous conjunctival graft fixation without sutures it was present in 20% cases in day 1, 12% cases in day 7, 2% cases in day 30 and at day 60 none of the cases had foreign body sensation. Our study showed all the post-operative discomfort i.e. pain, foreign body sensation, itching, hyperemia, chemosis were more in autologous conjunctival graft fixation by sutures group than autologous conjunctival graft fixation without sutures group during 60 days post-operative follow ups. Difference in the occurrence of pain, foreign body sensation, itching at day 1 and foreign body sensation at day 7 in in autologous conjunctival graft fixation without sutures and autologous conjunctival graft fixation with suturesgroup was statistically significant. No other signs or symptoms occurrence was statistically significant. A study conducted by Goswami S et al , Koranyi G et al,Harvey S et aland Irit Bahar et alPost-operative symptoms of pain, foreign body sensation, stinging and epiphora were significantly lower with fibrin glue on the 1st and 7th postoperative days compared with Mann-Whitney U test. [31, 32].

Sangole AM et al found post-operative symptoms i.e. Pain, redness, watering, irritation was more in 10-0 nylon group than autologous blood group and it was statistically significant with pain (p= 0.0134), watering (p= 0.0058), irritation (p = 0.0006) in day 1 and pain (p= 0.0372), redness (p= 0.0134), watering (p= 0.0017), irritation (p= 0.0017) in day 7.

The present study shows patients who underwent pterygium surgery faced some complications during post-operative follow up. The most common among the different complications is early graft retraction, (10%). Among them 7% patients also had recurrence attack during the post-operative period. 4%, 4%, 6% patients also have conjunctival granuloma, graft dehiscence, corneal scarring complication respectively. Study conducted in different settings also found different post-operative complications in pterygium surgery. A study conducted by Kubrey Sooraj Singh et al showedgraft displacement was 9%, wound retraction 31%, recurrence 0% in post-operative patients. Similarly P. Subhajit Singhet al found graft retraction 11%, graft edema 55.5%, recurrence 2.2% and granuloma 2.2% in post-operative patients in their study. In Rupali Venukumar Rangu's study, graft edema was 10%, graft retraction 10%, recurrence 0% seen.In Malik KPS's study, graft dehiscence was 5%, graft retraction 7.5% and recurrence 2.5%seen. In one more study byGunjan Rathi ,recurrence was 2%, graft loss 2%, chemosis 4% seen **.** In Sharma Ashok K et al study among 15 out of 150 cases, who underwent graft fixation with autologous blood, recurrence during the follow up period was seen in 4 patients 2.6%[33, 34] **.**Our study showed graft dehiscence was present in 8% cases of Autologous conjunctival graft fixation without sutures group. Froutan et al reported13.33% rate of graft dehiscence using autologous fibrin[35] . Sangole AM et al found post-operativecomplications i.e. Graft displacement was 18.8% and 3.1% in conjunctival autografting by patients own blood group whereas 12.9% and 0% in 10-0 Nylon suture group at day 1 and day 7. Graft loss was found to be 6.3% and 0% in conjunctival autografting by patients own blood group whereas 3.2%and 0% in 10-0 Nylon suture group at day 1 and day 7. The finding at day 7 was statistically significant (p= 0.0086). Sharma Ashok et alshowed4% cases of Conjunctival granuloma and recurrence in sutured group in comparison with 0% in sutureless group and this finding was not significant (p > 0.05). [36 ,37] Kumar Nishant et al showed Group A (Fibrin group)had a graft failure rate of 3.3% while group B (Sutured group) showed graft failure rate of13.2%. The difference was not statistically significant (p= >0.05). [38]

Kumar Pankaj et al explained recurrence at 6 month of follow-up, was slightly higher in suture group (5.28) in comparison to autologous blood group 1 patient(3.33%) whereas graft displacement was higher in autologous blood group, 3.33% than sutured group. [39] Most of the studies found that success rate of pterygium excision with sutureless gluefree conjunctival autograft was superior than that of pterygium excision with conjunctival autograft with suture. All of them concluded that graft without suture required less surgical time, had less complications, less recurrences, andless ocular discomfort was much less. They also concluded that although it is a relatively new procedure, but it is a very safe and cost effective technique for primary pterygium surgery.

VI. Conclusion

Pterygium excision with conjunctival autograft with autologous blood can be a good alternative procedure to with suture and with glue in terms of less surgical time, post-operative outcomes. The autograft attached to bare sclera with the help of 8-0 Nylon suture have drawbacks like prolonged operating time, postoperative discomfort, suture abscesses, buttonholes, and granuloma formation which usually requires a second operation for removal. In recent times, the universal trend toward simpler, quicker and more comfortable surgical procedures have fostered the development of sutureless techniques and hence use of tissue adhesives for attaching conjunctival autograft. Replacing sutures with tissue adhesives may shorten the operating time, improve postoperative comfort, and avoid suture related complications[49]. However, a good prospective randomized trial of long duration is necessary to validate these results.

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