



STUDY OF POST OPERATIVE SURGICAL OUTCOME OF CONJUNCTIVAL LIMBAL AUTOGRAFT TRANSPLANTATION TECHNIQUE BY NO SUTURE NO GLUE FIXATION FOLLOWING PTERYGIUM EXCISION.

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ABSTRACT

Aim: The present study was undertaken to study post operative surgical outcome of Conjunctival Limbal Autograft Transplant (CLAT) by no suture no glue technique. The natural activation of clotting factors allow formation of fibrin which acts as natural glue in adhering the graft to dry surface of bare sclera.

Material And Methods: In this retrospective study, 80 patients were enrolled. Patients were examined for changes in autograft as regards to post operative surgical outcome such as graft position, edema, graft hemorrhage, infection and retraction of graft.

Results : Mean age of the patients was 48.4 years and 55% were male. Out of 80 patients operated 62(77.5%) were found to have uneventful postoperative outcome. Sixteen (20%) patients were found to have graft edema which manifested on 2nd to 4th post operative day, which resolved by post-operative day 7 with use of topical steroids. Ten (12.5%) patients were found to have graft retraction. Graft haemorrhage was seen in Two (2.5%) patient, which resolved in 2 weeks. Graft loss with recurrence was seen in only one patient (1.25%).

Conclusion: Surgical outcome in the form of graft behaviour by no suture, no glue technique is excellent with low recurrence rate.

KEYWORDS :

INTRODUCTION:

Pterygium, a word derived from 'Pterygion' (ancient Greek for wing) is a wing shaped triangular fibrovascular growth arising from the subconjunctival tissue extending onto the cornea. It is a degenerative condition of conjunctiva, commonly situated on the nasal side. It is common in dry dusty sunny environment currently believed to be a growth disorder caused by a localized UV rays induced damage to the limbal stem cells. The characteristic pathological changes include, elastoid collagen degeneration, destruction of Bowman's membrane and conjunctival epithelial ingrowth with vascularization and inflammation. Genetic predisposition also plays role as one of the important risk factors.

Prevalence of primary pterygium varies from 0.7 to 31 % in various parts of the world.² A study from rural agrarian central India claims it to be 11%, whereas another population based assessment of prevalence from south India has quoted it to be 13%.^{12,13} In addition to its cosmetic blemish, it also causes discomfort, pain in eyes and blurring of vision due to induced astigmatism. Diplopia due to restriction of eyeball movements is also a presenting symptom especially in recurrent pterygia.

Surgical removal is the only treatment of pterygium. Simple excision with bare sclera technique was commonly performed in the past, with which, recurrence of pterygium was seen in most patients within 6 months or sometimes later upto 1 year. Reports of recurrence rate vary from 25 % to 45 % after simple excision of pterygium.³

Post operative adjunctive treatments like application of beta radiation, thiotepa eye drops, intraoperative use of 5Fluorouacil and mitomycin C were known to cause damage to surrounding tissues. Speath et al introduced the surgical technique of using conjunctival autograft for covering bare sclera after pterygium excision.⁴ A meta-analysis of various surgical techniques have shown that possibility recurrence increases 6 to 25 times if conjunctival autograft is not placed.

Traditionally, during surgery, conjunctival graft is secured in

place with either absorbable or non absorbable sutures, which causes discomfort to the patient and is associated with increased inflammation. Tissue adhesives mimicking natural fibrin also have been tried to glue the edges of graft. This technique has reduced postoperative inflammation and thereby patient discomfort but glue is more expensive than sutures. Although considered safe, fibrin glues are currently manufactured from human plasma and carry theoretical risk of transmissible diseases and hypersensitivity reactions.

The present study was undertaken to study post operative surgical outcome of CLAT by no suture no glue technique. The graft does not require either sutures or glue for fixing it onto bare sclera. The natural activation of clotting factors allow formation of fibrin which acts as natural glue in adhering the graft to the dry surface of bare sclera. The technique is cost effective without any post operative discomfort and low rate of recurrence.

MATERIAL AND METHODS:

In this retrospective study, 80 patients who have undergone no suture, no glue technique by single surgeon in 2 years were enrolled. Informed consent was taken from all patients. Study was started after clearance from Institutional ethical committee.

Patients having primary progressive nasal pterygium irrespective of the grades and recurrent pterygium were included in the study. Patients with history of previous graft failure, atrophic pterygium, severe dry eye, ocular adnexal infections, haematological disorders or on anticoagulants were excluded. Patients were examined on slit lamp biomicroscope for various changes in the autograft as regards to post operative surgical outcome such as graft position, oedema, infection, retraction during that period.

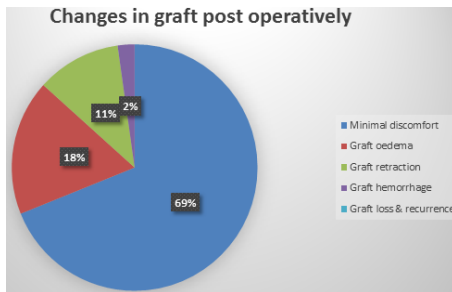
Surgical Procedure :

Patients were operated under peribulbar anaesthesia. Superior rectus bridle suture was taken, pterygium tissue was infiltrated with inj. Xylocaine 2% with adrenaline. Pterygium

tissue was dissected and then reflected over the cornea and was removed by avulsion from the corneal surface. Superficial Keratectomy was done to clear fibrovascular adhesions on cornea to make it smooth. Bare sclera area was measured with caliper to decide the size of the conjunctival graft. Supero temporal part of Conjunctiva was infiltrated with inj xylocaine 2% with adrenaline. The conjunctival graft of desired size was dissected and reflected over the cornea. Limbal tissue upto 1 mm was included in the graft. The graft was detached from the limbus and was placed over the bare sclera with limbus to limbus orientation. With the help of iris reposer graft was uniformly spread to cover the bare sclera and edges were secured with the help of Mcpherson's forceps.

RESULTS :

Mean age of the patients was 48.4 years (Range 28-64) and 55% were male. Out of 80 cases operated 62(77.5%) were found to have uneventful postoperative outcome with minimal discomfort. Sixteen (20%) patients were found to have graft oedema which manifested on 2nd to 4th post operative day and in all such cases, graft oedema resolved by post-operative day 7 with the use of topical steroids. Ten (12.5%) patients were found to have graft retraction near the medial canthus. Two (2.5%) patients of graft haemorrhage were seen manifesting on post operative Day 2 and they took up to post operative day 10 and 12 respectively to resolve. They were treated with topical steroids along with T. Vitamin C for 7 days. One (1.25%) case of graft loss was seen which was also the only case in which recurrence was observed.



DISCUSSION :

There have been many attempts to optimize pterygium surgery. The aim is to excise pterygium and prevent its recurrence. In this paper, we have shown that the use of no sutures, no glue technique when securing autologous conjunctival graft in pterygium surgery causes significantly less pain than using sutures. Conjunctival sutures used in pterygium surgery are not only time-consuming but also may lead to local complications such as discomfort, scarring, granuloma, or infection. Plasma-derived products such as fibrin glue may produce possible hypersensitivity reactions whereas the risk of viral transmission remains theoretically possible. The cost of surgery is another very important factor to be considered. The cost of fibrin glue is quite high. Another problem is its availability. Fibrin glue is not easily available to various eye clinics. Thus, the material cost of the no glue and no suture method became significantly lower than that of the sutures or using fibrin glue.

In this study we observed and studied the postoperative graft behavior and recurrence of pterygium after no suture no glue technique. In our study, ten patients (12.5%) were found to have graft retraction on the nasal side near the medial canthus. Malik et al in their study by sutureless gluefree technique, reported that the only complication occurred was medial edge recession of the graft that developed to one patient (3.7%) due to a wrong measurement of the size of the graft¹¹ In the study by Ashok K Sharma, 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%), and 2 patients had graft retraction on nasal side, 1

patient had tenon's granuloma.¹² Rathi et al reported that out of 50 eyes of 50 patients, one eye (2%) demonstrated recurrence, graft loss occurred in 1 eyes (2%) and chemosis in 2 eyes (4%).¹³ There was only a single case of graft loss in our study. In our study, cosmesis was excellent in all cases and recurrence was noted in only one case due to graft loss (1.25%). No suture no glue technique of conjunctival autograft is an easier and cost effective technique for the management of pterygium.

CONCLUSION:

Changes in the graft in the form of edema, graft retraction and and graft hemorrhage were the main postoperative observations in early postoperative period which got resolved in two weeks. Graft stability was excellent low recurrence rate where the graft was lost. The no suture, no glue technique is promising in management of all grades of pterygia.

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