Outcome of Sutureless, Glue Free Conjunctival Autograft in Pterygium Surgery - A Prospective Study

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Abstract:

Background: Conjunctival graft with limbal stem cell from patient's own eye is used as a popular practice to avoid recurrence after excision of pterygium. Suture materials used to secure the graft have some local complications and also time consuming. Plasma derived fibrin glue is used, but has risks of hypersensitivity reaction, transmission of blood borne diseases. In the present study we use no suture, no glue to adhere the graft in position, natural homeostosis is achieved here. Now a days natural homeostasis is allowed to achieve a better result. Purpose of the study was to determine the outcome of sutureless, glue free conjunctival autograft as a safe, economic and effective procedure on pterygium surgery. **Method:** This study was a hospital based prospective study and carried out on Rangpur Medical College Hospital. 32 patients of primary single head nasal pterygium were selected for study who admitted from July'2018 to December'2018. Study population was chosen by purposive sampling. The patients were non diabetic, convinced not to rub eye postoperatively. Excision of pterygium and limbal conjunctival autograft was performed without using suture or fibrin glue in all patients. Follow up was done on 1st POD, after one week, two weeks, one month and after three months. **Result:** Among the 32 patients 21(66%) were male and 11(34%) female, age range was 29 to 66 years. Maximum size of pterygium was 8mm and minimum size was 4mm. 5(15.6%) patients had foreign body sensation, 8(25%) watering on immediate postoperative days, mild subconjunctival hemorrhage in 2(6.25%) patients and Inferior graft dislocation in 5(15.6%) patient probably due to frequent blinking. There was no graft retraction and no recurrence was recorded among these study population. Surgeries were performed by single surgeon, and mean surgery time was 29.52 minutes. **Conclusion:** Sutureless, glue free procedure is safe, convenient, and effective for management of primary nasal pterygium with excision followed by conjunctival autograft.

Indexing words: Sutureless, Glue free, Cojunctival autograft, Pterygium surgery

Introduction:

Pterygium arises from Greek word Pterygion, means wing .Pterygium is a triangular wing shaped fibrovascular subepithelial ingrowth of degenerative bulbar conjunctival tissue over the limbus onto the cornea. It is a common ocular disease, especially in hot and windy areas. Pterygium causes visual disturbance by producing astigmatism, visual problem is severe when it invades the pupillary area. Permanent deterioration of vision may occur if still remains untreated.

Pterygium is common ocular disorder worldwide. Global prevalence varies from 0.3 to 29%.[1,2] The prevalence is high in Bangladesh, and it is 3.77%.[3]

There are various surgical techniques for treatment of pterygium. They are bare sclera techniques, transposition of pterygium to fornix, excision with simple closure, conjunctival autograft, limbal stem cell transplant, amniotic membrane graft, buccal mucosal graft and adjuvant therapy with beta irradiation, mitomycin-C and 5-flourouracil.

Superior limbal conjunctival autograft is the most popular modality now a day, has a long time benefit with low recurrence rate.[4] The graft can be attached with suture or fibrin glue. But suture

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less glue free conjunctival autograft is a newly emerging procedure.

Sutures have been traditionally used to adhere graft in position but it requires longer operating time, surgical expertise, post-operative discomfort, local complications like suture abscesses, button holes and granuloma formation.[5,6]

Graft fixation with fibrin glue is another technique which is convenient as it is less time consuming and needs less surgical expertise. But it carries risks of infection and foreign body reaction. Fibrin glue is expensive and it is not available everywhere. Autologous fibrin is an alternative method. In developing countries it is preferred as safe, effective and economic.

Methods:

This was a hospital based prospective study. It was carried out among the patients admitted in Ophthalmology department of Rangpur Medical College Hospital, Rangpur with primary pterygium, from July 2018 to December 2018. Cases of nasal pterygium were selected for the study. Method of sampling was purposive sampling. Total study population was 32 and their age range was 29 to 66 years. Patients with recurrent and primary temporal or bi-head pterygium were excluded. We excluded diabetic patients from the study. The patients gave consent to be sample of the study and was committed for periodic follow up and avoiding eye rubbing on immediate post operative days. Routine preoperative evaluation, including systemic and ocular were done. Surgeries were performed by single surgeon. Excision of pterygium followed by superior limbal conjunctival autograft was done in all patients. The graft tissue was left there for 10 minutes, then pad bandage was given. Patients were instructed to avoid eye rubbing. After 24 hours bandage was removed and dressing was done gently. Steroid and antibiotic drops were instilled and pad bandage was given again for another 24 hours. After 48 hours of surgery pad bandage was removed. All the patients were prescribed steroid eye drop it tapering dose and antibiotic drop also. Follow up was done on 1st POD, after one week, two weeks, one month and after three months. On each follow up they were examined for subconjunctival hemorrhage, graft displacement, graft rejection, recurrence or any other complications.

Results:

Table 1: Distribution according to age

Age Range(Years)	Number	Percentage
29-40	11	34
41-50	14	44
51-66	07	22

Table 2: Distribution according to sex/gender

Sex	Number	Percentage
Male	21	66
Female	11	34

Table 3: Size of pterygium

Size of pterygium (In mm)	Number	Percentage
4-6	13	40.62
7-8	19	59.37

Table 4: Different Postoperative complaints

Symptoms	Number of patients	Percentage
No complaint	13	40.63%
Photophobia	9	28.13%
Watering	8	25%
FB Sensation	5	15.6%
Eye ache	4	12.5%
Ocular Itching	3	9.38%

Table 5: Postoperative complications

Complications	Number	Percentage
Subconjunctival hemorrhage	2	6.25%
Graft displacement	5	15.6%
Graft rejection	0	0%
Recurrence	0	0%

Discussion:

Pterygium is not an uncommon ocular problem in Bangladesh, especially in north Bengal. Age range of the patients was 29 to 66, mean age 47.2. Among them 32 patients 21(66%) were male and 11(34%) female. Mean operation time was 29.52 minutes. Bhatia (2017) in a study found mean age 47.7 and mean operation time 35 minutes.[7] In the present study no change of visual acuity was observed like other workers. The present study found no change in visual acuity postoperatively which is consistent with the study of Bhatia.

In the current study sutureless, glueless method was adopted to improve patient's postoperative complaints, reduce operation cost, time and recurrence. Out of 32 patients 5 (15.6%) patients reported foreign body sensation, 8 (25%)

patients had watering, 4(12.5%) complained of postoperative ocular pain, 3(9.38%), itching, 9(28.13%), photophobia on immediate postoperative days which disappeared on subsequent follow up. Subconjunctival hemorrhage was seen in two patients, graft displacement was seen in 5 patients who healed spontaneously without any surgical intervention. No sign of recurrence were seen within 3 month follow up period. Kumar and Singh (2018) in a comparative study found patients in whom autologous blood was used to adhere the graft material had less post operative complaints for few days in comparison to which suture or fibrin glue was used.[8] In our study we also found that major fraction of the patients, that was 13(40.63%) had no complaints.

Conclusions:

The study concluded that sutureless, glueless conjunctival autograft after excision of primary pterygium was safe, effective and economic.

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