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BLOOD AS BIOADHESIVE - PTERYGIUM EXCISION WITH CONJUNCTIVAL AUTOGRAFT

Ophthalmology

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ABSTRACT

Introduction :- The **GOAL** of our study is to evaluate and analyze the surgical outcome, safety and efficacy of suture free, glue free conjunctival autograft (SFGF-CAG) after pterygium excision.

Materials & Methods :-This study was conducted in ASRAMS hospital, West Godavari over a period of 6 months i.e from 20/09/2017 – 20/03/2018. Total of 75 patients were operated using blood oozed at local pterygium excision site as adhesive instead of sutures and glue and postoperative results were noted.Preoperative & postoperative visual acuity were noted using snellens chart. Slitlamp biomicroscopy and grading of the pterygium was done.

Results :- A total of 75 patients were operated for pterygium excision with conjuntival autograft using blood as bioadhesive. Graft related complications were noted in 2 patients along with recurrence in one patient.

Conclusion :- The above results suggest that this modality is a simple, fast, cost effective procedure alternative to pterygium excision with conjuntival autograft using sutures and glue.

KEYWORDS

BIOADHESIVE, PTERYGIUM, SUTURE, GLUEFREE, CONJUNCTIVAL AUTOGRAFT(CAG)

INTRODUCTION :-

The prevalence rate of primary pterygium varies from 0.7 to 31% in various populations around the world.[1,2]Recent immunohistochemical studies are in favour of the theory that p53-mutated limbal epithelial basal stem cells lead to the development of pterygium.[3] Several surgical techniques have been described so far for its management of pterygium.[4] Kenyon et al introduced the surgical technique of using conjunctival autograft in the management of primary advanced and recurrent pterygium.[5] Although more time-consuming, this technique was found to be safe and effective in reducing the number of recurrences while avoiding the risk of potentially serious complications.[6,7] A meta-analysis on the surgical techniques for pterygium excision showed that the odds for pterygium recurrence following surgical treatment of primary pterygium are close to six and 25 times higher if no conjunctival autograft placement is performed.[8]

Traditionally, during pterygium surgery the conjunctival autografts are secured in place with either absorbable or non-absorbable sutures. The use of fibrin glue (FG) during pterygium surgery was first described by Cohen et al in 1993.[9] Since then there have been several reports on the safety and efficacy of FG during pterygium surgery.[10–12]

A recent retrospective study on a large cohort suggested that pterygium surgery with FG leads to significantly lower recurrence rate when compared with the use of sutures.[13]

It is conceptualised that pterygium excision with conjunctival autograft using fibrin glue carries better results compared to sutures for reason to the best of our knowledge being, decreased localized fibrosis and inflammation and edema secondary to sutures which is avoided in technique using fibrin glue. However fibrin glue carries its own set of disadvantages like cost. This can be avoided if the patients own blood can be used as adhesive for conjunctival autograft. Hence this study is done to evaluate the safety and efficacy of pterygium excision with conjunctival autograft using blood as bioadhesive.

MATERIALS :-

Patients attending ASRAMS hospital for pterygium surgery willing to give valid consent for the study after explaining about the procedure.

Selection of Patients :

Inclusion criteria :

1. Patients between 20 to 50 years of age willing to give valid consent for surgery.
2. Patients with all grades of pterygium.
3. Patients with only nasal pterygium will be included for the study.

Exclusion criteria :

1. Eyes with any pathology which would hamper wound healing such as active infection or inflammation, symblepharon, past ocular surgery within last 6 months, trauma, and systemic diseases such as diabetes mellitus, collagen vascular disease, pregnancy, and bleeding disorders were excluded.
2. Eyes with other ocular conditions that would contribute to visual morbidity like cataract and corneal opacity etc. were excluded from the study.

METHODS :

1. A valid written consent will be taken from all the Patients.
2. Snellens chart for visual acuity.
3. Refraction for BCVA preoperatively and postoperatively.
4. Slit lamp biomicroscopy.
5. All patients are operated with graft taken from the superior aspect of same eye.
6. All the postperative complications will be noted.

Procedure of surgery :

1. All patients were anaesthetized with a peribulbar block and eyes were painted and draped.
2. The fibrotic tissue was extensively dissected to expose the sclera and corneal stroma.
3. The subconjuctival fibrovascular tissue, including tenon's capsule, were thoroughly removed to provide clean scleral bed.
4. The size of the defect is measured with calipers.
5. Around 0.5mm more than the measured defect marking is done on superotemporal conjunctiva.
6. A thin film of blood clot is allowed to form over the bare sclera.
7. Any active bleeding is stopped by direct tamponade.
8. A thin tenon free conjunctival auto graft with limbal stem cell is excised.
9. Auto graft is slided over the cornea, orientation is kept limbus to limbus.
10. It is slipped over with draping motion to ensure epithelial side is up.
11. After placement of graft over the bare sclera with oozed blood during excision gently press for 3-5 minutes.
12. The stabilization of graft is tested centrally and on each free edge to ensure firm adherence to sclera.
13. Eye is patched for 24 hours.

Routine post op instructions like tapered 1% Prednisolone acetate eye drops 4-6 time daily for 3-4 weeks,Moxifloxacin eye drops for 7 days. Lubricating eye drops for 6-8 weeks were used .Patients were followed

up for 1st day ,1 week and 1 month and 3 months.

STATISTICALANALYSIS :-
Microsoft office 2007 was used to make tables. Descriptive statistics using mean and percentage were used to interpret results of the study.

RESULTS :-

GENDER

Males	Females
56% (42)	44% (33)

AGE :

Age group	Percentage (No. of patients)
20-30	8% (6)
31-40	25.3% (19)
41-50	41.3% (31)
>50	25.3% (19)

The mean age of 75 patients who underwent procedure is 47 years

VISUAL ACUITY :

Group	Preoperative Vision	Postoperative Vision - 3 Months
6/6	45.3% (34)	42.60% (32)
6/9-6/12	36% (27)	38.60% (29)
6/18-6/24	12%(9)	13.30% (10)
6/36-6/60	6.6%(5)	5.30% (4)
<6/60	NIL	NIL

GRADE OF PTERYGIUM

GRADE	PERCENTAGE (No. of patients)
1	41.3% (31)
2	45.3% (34)
3	13.3% (10)
4	Nil

POSTOPERATIVE COMPLICATIONS - MAJOR

FOLLOW-UP	DISLODGEMENT	RECURRENCE
DAY -1	1.3% (1)	NIL
1 WEEK	NIL	NIL
1 MONTH	NIL	1.3% (1)
3 MONTH	NIL	NIL

MINOR

FOLLOW-UP	SUB-CONJUNTIVAL HEMORRHAGE	GRAFT REJECTION	GRAFT EDEMA
DAY -1	94.6% (71)	NIL	12% (9)
1 WEEK	74.60%(56)	NIL	NIL
1 MONTH	NIL	NIL	NIL
3 MONTHS	NIL	NIL	NIL

DISCUSSION :-
Currently there are various types of surgery done for pterygium and an ideal surgery for pterygium excision necessitates less pain, faster healing, good cosmesis and least possible recurrence. Among current choices mostly commonly practised types are with sutures and the usage of glue.

In our study we allowed blood to ooze in the local pterygium excision site and the conjuntival graft is placed over the blood. Only 3-5% of the patients had change in visual acuity following surgery which was insignificant to be noticed by the patient.

2.6% (2) patients had major complications i.e 1.3%(1) patients with postoperative graft dislodgement which was noticed on day 1 after surgery and 1.3% (1) patients had recurrence within 3 months of followup. Other minor complications like subconjunctival hemorrhage was noted in 94.66%(71) patients of which 8%(6) had oozing of thick blood flim underneath the graft, graft edema was noted postoperatively in 5.3% (4) patients and graft recession was noted in 13.3%(10). Patients with minor complications (graft edema, recession) during early postoperative period did not have any major complications like dislodgment and recurrence in their subsequent followups.

Suture related fibrosis and other complaints like foreign body sensation, pain were avoided using this procedure. Glue related complications were also avoided in this type of surgery with additional advantage of cosmetical acceptibility. The mean surgical time was 19 minutes which is definitely time saving procedure and reduces patient discomfort.

Conclusion :-
Pterygium excision with conjuntival autograft using blood as adhesive for graft is costeffective, simple, fast and cosmetically acceptible alternative for techniques using sutures and glue with minimum complications and reduced recurrence.

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