Original Research Article

Pterygium excision with sutureless glueless conjunctival autografting

B S Joshi[1], V H Karambelkar[2*], Vinit Rewanwar[3], D K Sindal[4]

[1]Associate Professor, [2]Professor, [3]Junior Resident, [4]Professor and HOD, Department of Ophthalmology, Krishna Institute of Medical Sciences, Karad, Maharashtra, INDIA.
Email: v.rewanvar@gmail.com

Abstract

Background: Sutureless glueless conjunctival autografting in pterygium surgery is gaining popularity due to short surgical time, no recurrence and good cosmetic outcome. **Aim:** To see the outcome of pterygium excision with sutureless glueless conjunctival autografting. **Methods:** 20 cases of uncomplicated pterygia irrespective of eyes, age and sex were examined with slit lamp. All were nasal pterygia. Pterygium mass was excised and autologous conjunctival graft without suture or glue were performed. Grafts were taken from supero-temporal area. Follow up was done on 48 hour,1 weak, 1 month and 6 month. **Result:** The grafts were intact on each follow up. Graft retraction was present in six cases from nasal side of graft. No recurrence was found till 6th month follow up. **Conclusion:** No glue, no suture conjunctival grafting in pterygium surgery takes short surgical time, easy to perform, excellent cosmetic outcome with no recurrence.
Key Words: Pterygium surgery, Sutureless Glueless Conjunctival autografting.

[*]**Address for Correspondence:**
Dr. V H Karambelkar, Professor, Department of Ophthalmology, Krishna Institute of Medical Sciences, Karad, Maharashtra, INDIA.
Email: v.rewanvar@gmail.com
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INTRODUCTION

The term pterygium comes from the ancient Greek word (pteryx: wing andgeon: fin). Pterygium is characterized by a triangular portion of bulbar conjunctiva encroaching upon the cornea[1]. Pterygium is most common in the so called "Pterygium area" which is defined by geographical altitude of 40 degree north and south of equator[1]. It is more common in adult male involving in outdoor activities[2]. The exact cause of pterygium is still unknown but UV radiation is supposed to be the most important cause. Other causes include exposure to dry and dusty environment. Pterygium is most often seen from nasal side in the inter-palpebral area. The nasal affinity of pterygium is attributed to the fact that a greater portion of bulbar conjunctiva is exposed to the UV radiation. Secondly there is sparseness of subconjunctival tissue in the temporal region and the temporal region is exposed to a lesser extent to UV radiation due to a greater amount of bowing of outer 2/3rd of upper lids. The prevalence rate of primary pterygium varies from 0.7 to 3.1% in various populations around the world[3]. Patient may have foreign body sensation, redness, irritation and is controlled by lubricating eye drops. Cosmetic disfigurement, recurrent inflammation, visual impairment and difficult to wear contact lens are the main indications of surgery (i.e., pterygium excision)[4].Risk factors for the recurrence are geographic location, age, gender, morphology and grade of pterygium, and the type of surgical technique.[5,6] Most of the recurrence takes place within first 6 months postoperatively, and it has been attributed to the upregulation of the inflammatory process[7]. Conventional surgical procedure(s) practiced nowadays to prevent recurrence, alone or in combination, are conjunctival flap, conjunctival rotational autograft, amniotic membrane graft (AMG), or free conjunctival autograft (CAG) or limbal CAG (LCAG) with surgical adjunct (e.g., suture, commercial fibrin glue, intra or post operative 0.02% mitomycin C [MMC]), with variable postoperative recurrence and/or success rate(s)[8].In bare sclera

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technique, pterygium mass is excised and the underlying sclera is left exposed, unfortunately recurrence rate is up to 50% of cases. To prevent the recurrence, conjunctival autografting by the use of sutures are being done but this technique takes more time for stitches and produces ocular discomfort for several weeks. These complications led to the development of no stitch technique using fibrin glue as adhesive to secure the graft[9,10]. The fibrin glue causes the risk of transmitting reactions and infections. All these lead to the development of sutureless and glueless conjunctival autografting for covering bare sclera. Pterygium excision with sutureless glueless conjunctival autografting is gaining popularity due to its simple technique and lesser recurrence rate. Postoperative follow up was done on second day, seventh day, first month and sixth month. Patients were enquired about pain and discomfort and examined for haemorrhage, graft dislocation, graft retraction and recurrences and other postoperative complications.

MATERIAL AND METHODS

A retrospective study of 20 cases [16 male and 4 female] don between January 2015 to January 2017. All the patients of pterygium at KIMSDU were randomly selected irrespective of eyes, age and gender. Preoperative ocular examination included refraction and assessment of best-corrected visual acuity, slit lamp biomicroscopy, baseline intraocular pressure (IOP)-measurement by Goldmann applanation tonometer, fundus examination, and photographic documentation of the pterygium. Blood sugar, bleeding time, clotting time and xylocaine sensitivity test was performed. Informed consent was obtained from all patients before surgery.

Patients were anesthetized by giving 3cc peribulbar anaesthesia with 2% preservative free xylocaine and then eyes were painted and draped. Conjunctival incision taken over the neck of the pterygium which was extended superiorly as well as inferiorly and the underlying tenon's capsule was dissected up to medial rectus. The pterygium mass was cut and removed. The head of pterygium was dissected. Pterygium mass was carefully dissected out from the cornea with 15 no blade, the subconjunctival fibrovascular tissue including Tenon's capsule was thoroughly removed to provide clear sclera bed. Mild wet field cautery was done to control bleeding. The size of the defect was measured with Vernier caliper. At supero-temporal position conjunctiva was marked in such a way the graft become 0.5mm larger than bare sclera. A thin Tenon free conjunctival autograft with limbal stem cell was excised. Autograft was placed over the bare sclera and orientation was kept limbus to limbus. Then waited for 5 min for graft to get attached. It was slipped over with draping motion to ensure epithelial side was up. Eye pad was given for 48 hours, Post-operatively moxifloxacin and dexamethasone combination eye drops were initially given six times a day and tapered over four weeks period. Lubricating eye drops (CMC 1%) 2hourly were given. Along with oral NSAIDS twice a day for five days. And patients was followed up after 48 hour, 1weak, 1month and 6month.

RESULTS

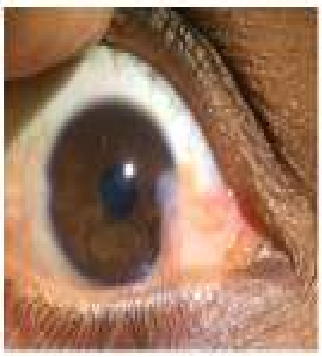

Figure 1: Preoperative

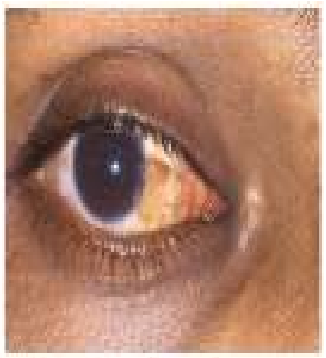

Figure 2: Postoperative 1 Month

Pre-operative and post-operative visual acuities were recorded. Post-operative complications (immediate and late) were recorded. Final cosmetic outcome was evaluated after 6 month A total of 20 patients underwent primary pterygium surgery with sutureless and glueless conjunctival autografting. There were 16 male (80%) and 4 females (20%). The mean age group was 40.5 years. All patients had nasal pterygium pterygium.

Table 1: Gender of patients and the operative time taken

Variables	Sub-groups	Number	Percentage
Gender	Male	16	80
	Female	4	20
Operative time	15 minutes	1	5
	20 minutes	17	85
	25 minutes	2	10

Table 2: The outcome following pterygium surgery

Variables	Sub-groups	Number	Percentage
Graft dislocations	Present	0	0
	Absent	20	100
Graft retraction	Present	6	30
	Absent	14	70
Post-operative pain	Mild pain	19	95
	Moderate pain	1	5
	No pain	0	0
Cosmetic outcome	Poor	0	0
	Good	20	100

DISCUSSION

Currently practiced surgical methods of pterygium excision include conjunctival autografting using suture or glue and sutureless glueless autografting. A recently

reported meta-analysis by Kaufman *et al*. indicated the superiority of CAG and LCAG over AMG, as well as the associated risk of vision-threatening complications with MMC[11]. Other studies although reported LCAG to have very few recurrence and complication rate but seems to be more technically demanding, more complex, and time-consuming, may even worriedly result in limbal stem cell deficiency of the donor site[12,13]. The presence of sutures may lead to prolong wound healing and fibrosis[10,14], subsequent complications such as pyogenic granuloma formation are easily treated. Others such as symblepharon, forniceal contracture, ocular motility restrictions, diplopia and sclera necrosis and infections are much more difficult to manage and may be sight threatening[15,16]. As the fibrin glue is manufactured from human plasma, it carries the risk of transmitting diseases[17]. Most commonly Hepatitis A and Parvovirus B19 are prone to get transmitted through fibrin glue. The fibrinogen compounds may also be susceptible to inactivation by iodine preparations such as those used for conjunctival disinfection before pterygium surgery[18]. Sutureless glueless conjunctival autografting in pterygium surgery is a simple technique with excellent results. In our study, the mean surgical time was 20 minutes.

CONCLUSION

No suture no glue conjunctival autografting in pterygium surgery is excellent because of its simple technique, short surgical time, lesser complication, excellent cosmetic outcome, almost no recurrence and minimal pain.

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