

## Conjunctival Auto transplantation in Pterygium Excision Using a releasable three suture technique: a Follow-up Study of 100 Cases

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**Abstract:** The study was conducted in District Hospital Baramulla from January 1, 2015, to December 31, 2016. It was a post-operative interventional study. In this study, 100 eyes of 100 patients with primary nasal pterygium were operated, 65 males and 35 females. Simple excision under local anesthesia was performed followed by closure of bare sclera by conjunctival autograft. The conjunctival autograft was sutured by three releasable (10-0 Nylon) sutures, single pass three throw loop knot with long ends, one each at upper and lower limbal corner, third one at middle of graft on nasal side. The three sutures were removed on third postoperative day by pulling the long end of the knot. Follow up period was six months. Recurrence occurred in one patient (1%), other complications include subconjunctival hemorrhage/ sub graft hemorrhage in twelve patients (12%), conjunctival chemosis in nine patients (9%), graft retraction from nasal side in four patients (4%), overriding of graft on cornea in three patients (3%) and granuloma in donor site in one patient (1%)

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### I. Introduction

Pterygium is a common ocular surface lesion originating in the limbal conjunctiva within the palpebral fissure with progressive involvement of the cornea. The lesion occurs more frequently at the nasal limbus than the temporal with a characteristic wing-like appearance.

The etiology is unknown. An increased incidence is noted in latitudes nearer the equator and individuals with a history of increased UV exposure.

Risk factors include UV radiation, dry climate, and outdoor lifestyle.

The pathophysiology of pterygium is characterized by elastotic degeneration of collagen and fibrovascular proliferation with an overlying covering of epithelium. Histopathology of the abnormal collagen in the area of elastotic degeneration shows basophilia with hematoxylin and eosin stain. Destruction of Bowman's layer by fibrovascular growth is typical.

The main problems with pterygium surgery are the problems with post-operative recurrence and scarring.

In the bare scleral technique, an exposed area of sclera is left. However, the recurrence rate is very high ranging from 30% to 80%. To reduce recurrence rate, antimetabolites like mitomycin-C have been used intraoperatively and postoperatively. However, mitomycin C is associated with serious complications like scleral thinning with uveal tissue show through. Others include photophobia, secondary glaucoma, sudden onset mature cataracts, corneal melt, iridocyclitis, symblepharon formation, and punctal occlusion.

Conjunctival autograft remains the gold standard for the treatment of pterygium. These techniques involve the use of sutures or fibrin glue<sup>1-5</sup> and are vulnerable to associated complications.

The use of sutures<sup>2,4,5,6</sup> may lead to local complication such as discomfort, scarring, or infection. Fibrin glue<sup>7-9</sup> may produce possible hypersensitivity reactions, whereas the risk of viral transmission remains. Pterygium excision by sutureless and glue free technique<sup>10,11,12</sup> where autologous blood<sup>13,14</sup> is used to adhere the graft to the recipient scleral bed. This technique is good but there remains some problem with regard to graft displacement in the post-operative period.

We have evolved a special glue free technique with three releasable suture with long ends<sup>15</sup>.

## II. Materials and Methods

Peribulbar anesthesia was given with 2% lignocaine. Body of pterygium was dissected 4 mm from limbus in two layers. Superficial layer included only conjunctiva and deep layer of Tenon's capsule included immediate subjacent and adjacent Tenon's capsule. Pterygium was removed from cornea by avulsion.

Remnants on cornea were scrapped by crescent blade and sclera bed was also cleared of remnants by scraping of bed by crescent blade. Hemorrhages were controlled by direct compression. The defect was measured by Castroviejo caliper in mm.

An oversized graft by 1 mm was taken from superior 12 O'clock position. Saline was injected by 26 G needle and a thin graft<sup>16</sup> was fashioned between conjunctiva and Tenon's capsule. Care was taken to include as little Tenon's capsule as possible. The graft was dissected anteriorly to include stem cells in limbus and graft was resected with conjunctival scissors. The graft was placed on bare scleral and positioned so as to maintain the limbus-limbus orientation with epithelial surface up. The edge of the graft and free conjunctival margin (left after excision of pterygium) is apposed with toothed forceps at multiple spots. Three releasable sutures with 10-0 Nylon (single pass three throw) loop knot with long ends were given, one each at upper and lower limbal corner, third one at middle of graft on nasal side. The graft is opposed to scleral bed for a period of 5-6 minutes and the eye was bandaged for 24 hours. The patient was followed on the 1st day, 3rd day, 1 week, 2 weeks, 3 weeks, 6 weeks, 3 months, and 6 months<sup>17</sup> postoperatively. The releasable sutures were removed on third post operative day on slit lamp by pulling the long ends of suture. Patients were put on antibiotic steroid (moxifloxacin-dexamethasone) eye drop and lubricant eye drops (1% carboxymethyl cellulose) postoperatively 4 times daily initially, then antibiotic-steroid eye drops were tapered over a period of 4 weeks.

## III. Results and Discussion

The study included 100 eyes of 100 patients with primary nasal pterygium only. It was a prospective interventional study, 100 eyes of 100 patients with primary nasal pterygium were included in the study. Of 100 eyes, 60 were left and 40 were right. There were 65 males and 35 females. The following complications took place [Table 1].

The total number of complications exceeds total number of cases as more than one complication was noticed in some cases.

Two cases of overriding of graft on cornea were taken to theater and excess graft was trimmed off postoperatively. The patients behaved nicely.

In 1 case of granuloma at donor conjunctival site, patient was taken to theater and granuloma was excised.

## IV. Conclusion

It was concluded that glue-free and releasable suture technique for conjunctival autografting is a cheap technique with excellent results. Fibrin Glue is costly and there is risk of viral transmission. Multiple sutures is time consuming technique and causes irritable eye

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