

To Study the Management of Double Headed Pterygium with Split Conjunctival Autograft

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Introduction: Pterygium is a common disease of ocular surface. If it is surgically removed resulting in a bare sclera, the recurrence rate is found to be high. The excision of a double headed pterygium results in a large area of bare sclera. In this study a technique of split conjunctival graft has been described and its surgical outcome has been studied.

Material and Methods: This is a hospital based prospective interventional study, conducted over a period of 6 months. 20 patients with double headed pterygium were included in the study. A split conjunctival graft just large enough to cover the bare scleral defect was placed after removal of the double headed pterygium. Follow up as conducted on day 1, 2 weeks, 1 month and 3 months.

Result: There was recurrence seen in 2 patients on temporal side on the 3rd month follow-up. Rest patients showed no recurrence.

Conclusion: Management of double headed pterygium with split conjunctival graft is an efficient technique in preventing recurrence of di headed pterygium.

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I. Introduction

Pterygium (meaning ;' a wing ') is a triangular encroachment of the vascularized granulation tissue covered by conjunctiva in the interpalpebral area.

The subconjunctival tissue proliferates as vascularized granulation tissue. This destroys the superficial layer of stroma and the Bowman's membrane as it invades the cornea. (1)

Exposure to environmental factors such as sun, dry heat, high wind and abundance of dust, for a long period of time contributes to the development of pterygium.

Its symptoms start with cosmetic intolerance in the early stages. Later on, the patient experiences foreign body sensation and defective vision by obscuring visual axis or causing astigmatism. Limitation of ocular movements can cause diplopia.

India is part of the pterygium belt. Double-head pterygia are frequently encountered in central India. Simple excision is associated with a high rate of recurrence (around 80%), which is more aggressive than the original lesion.

Conjunctival autografts are reportedly safe and effective in treating pterygium.[2]-[5]

AIMS

To study the surgical outcome following split conjunctival autograftin double headed pterygium.

OBJECTIVES

To describe the technique of split-conjunctival grafts (SCG) for double-head pterygia

To evaluate postoperative outcome of split-conjunctival grafts (SCG)

II. Material And Methods:

- **SETTINGS:**The study will be conducted in the Ophthalmology Department at Acharya VinobhaBhave Rural Hospital, Sawangi, Wardha, Maharashtra. All the surgeries will be conducted by an experienced surgeon.
- **RESEARCH DESIGN:** This is a hospital based prospective interventional study.
- **DURATION OF STUDY:** This will be a 6 months long study from April 2018 to October 2018.

- **PARTICIPANTS:**All patients with double headed pterygium, attending the Ophthalmology Outpatient Department at Acharya VinobhaBhave Rural Hospital will be selected for the study after taking the inclusion and exclusion criteria into consideration.

INCLUSION CRITERIA:

Patients presenting with double headed pterygium during study period.

EXCLUSION CRITERIA:

1. Patients with cataract in the operating eye
2. Patients with pterygium grading higher than Grade 2
3. Subjects having other adnexal diseases.
4. Anterior or posterior segment diseases which decreases visual acuity.
5. Patients having recent ocular surgery (Eg: cataract surgery)
6. Recurrent pterygium
7. Patients with ocular surface disorder.
8. Those who did not give consent.

SAMPLING PROCEDURE:

All patients presenting with double headed pterygium to the Ophthalmology Outpatient department will be screened. After taking the inclusion and exclusion criteria into consideration, patients will be admitted to the Ophthalmology ward. Patients will be counselled and explained the details of the study. A written informed consent will be obtained from the patient. Those consenting for participation in the study will be enrolled in the study.

- **SAMPLE SIZE:**20 patients.

- **DATA COLLECTION TOOLS AND PROCESS:**

The study will be adhered to the tenets of the Declaration of Helsinki, and it will be approved by an Institutional Ethic Committee.

1. Data collected included patient's age, sex, ocular medical and surgical history, visual acuity before and after surgery and complications. Pterygium was graded according to the corneal involvement (Grade 1: crossing limbus; Grade 2: midway between limbus and pupil; Grade 3: reaching up to pupillary margin; and Grade 4: crossing pupillary margin).
2. After taking consent from these patients, pterygium excision surgery was done by split conjunctival technique with limbal conjunctival autograft transplantation using autologous blood.

Surgical Procedure:

2% Xylocaine was used as local peribulbar anaesthesia, after painting and draping, a wire speculum was used to separate the lids. Toothed forceps and Iris repository was used to avulse the head of the nasal pterygium from the corneal surface. Conjunctival forceps were used to excise the pterygium body and the underlying fibrovascular tissue. A crescent blade was used to scrape the residual tissue from the corneal and limbal areas. A similar procedure was performed for the temporal pterygium.

The size of the conjunctival graft required to resurface the exposed scleral surface was measured in three directions – extent across the limbus, maximum circumferential extent and the distance from the limbus on both nasal and temporal sides.

Balanced salt solution was injected beneath the conjunctiva with a 26G needle which helped in good conjunctival dissection from the Tenon's Capsule. This helps in a successful graft take up.

The conjunctival graft was excised starting from the forniceal end using conjunctival scissors. The graft was split for the dimensions marked for the temporal bed. The limbal side was left attached. The graft was placed on the temporal side and secured with 10.0 vicryl suture with 4 episcleral bites to maintain the position and the edges were sutured. Limbal orientation was maintained on the nasal side. The eye was patched.

Post-Operative Care:Topical instillation of antibiotic & steroid combination (moxifloxacin & dexamethasone) eye drops were used four times a day for 2 weeks and then tapered over the next 4 weeks & then stopped. Topical lubricant drops (0.5% methyl cellulose) instilled ever four times a day for one month. Any retained suture was removed at four weeks. All patients were followed up on - 1st post operative day, 2 weeks, 1 month and 3 months. Visual acuity was recorded by Snellen's chart and illiterate c chart on follow up.

III. Results

Out of the 20 patients, 12 were male. The mean age of the patients was 57.35 ± 1.23 years.

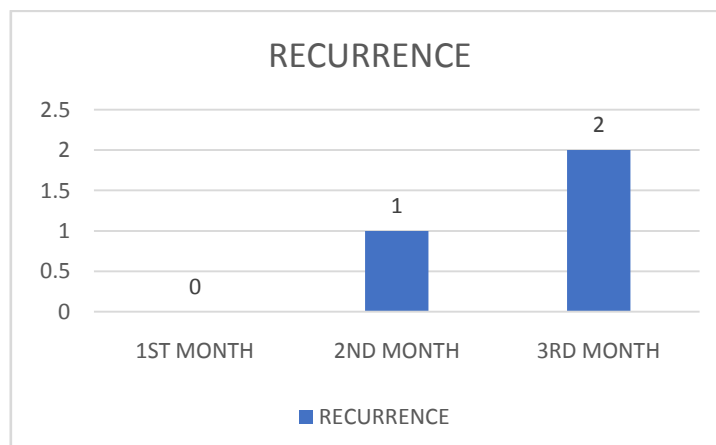
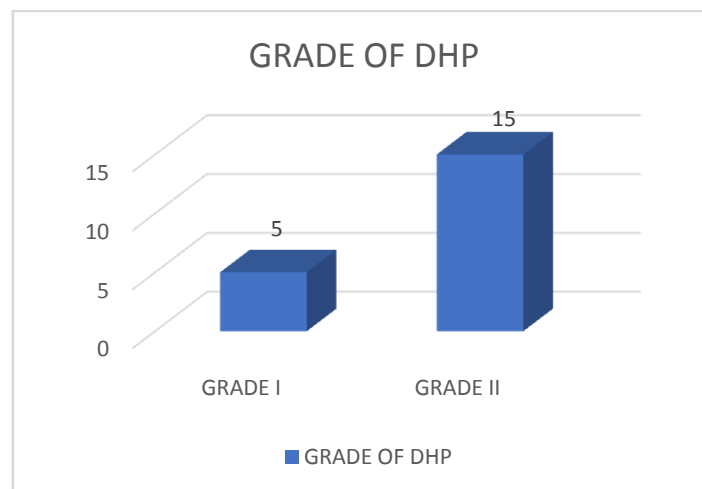
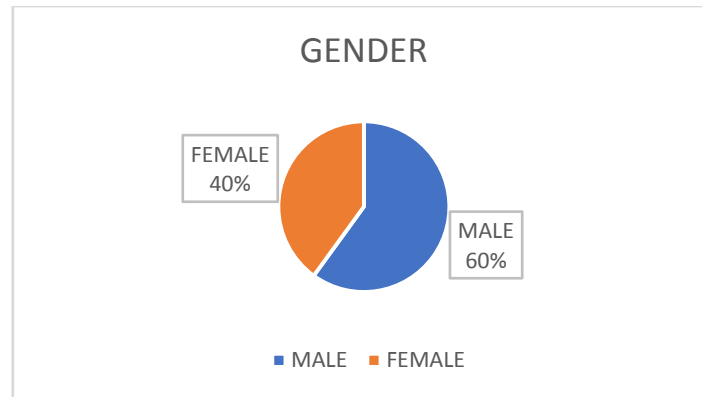
5 patients had Grade I double headed pterygium and 15 had Grade II.

Out of the 20 patients, 8 (40%) had reduced visual acuity pre operatively (4 with 6/12, 3 with 6/18 and 1 with 6/24) and showed improvement to 6/9 post operatively.

No recurrence of fibrovascular tissue from the conjunctiva crossing over to the cornea was noted in 18 patients.

Only 2 patients showed recurrence on the temporal side at 3 months follow up.

Intra or post-operative complications were not noted.



IV. Discussion

One of the major complication post pterygium surgery is the recurrence of the pterygium. The major goals of pterygium excision surgery are – satisfactory cosmesis and low recurrence rate. In our study, we used split conjunctival autograft from superior quadrant and secured the graft with sutures without maintaining limbus-limbus orientation on bare scleral defects.

In general, the pterygium recurrence occurs within the first 6 months after surgery[6]. In view of this our study has certain limitations like its small sample size and short follow up period.

In a study by Solomon *et al.* with technique of pterygium excision with AMT, the recurrence rate was 9% (1 eye out of 11).^[7] Similarly, double-head pterygium excision using bare sclera technique with 0.02% MMC (5 min) was published by Avisar *et al.* which showed recurrence rate of 0%(0 out of 10 eyes) in primary pterygium and 33.33% (1 eye out of 3) in recurrent double-head pterygium.^[8] Using different procedures, previously published studies have shown varying degrees of recurrence that ranged from 0% to 71.42%.^[6,7,8,9,10] Previous studies reported that, limbal stem cells act as a barrier between the conjunctiva and corneal epithelium and destruction of this barrier leads to growth of conjunctival tissue on to the cornea.^[11,12]

V. Conclusion

Although we are not maintaining limbal- limbal orientation in our study, taking an adequate size graft enough to cover the bare sclera defect on both the nasal and temporal side shows a reduced rate of recurrence and better visual outcome.

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