

AN OBSERVATIONAL STUDY ON EXTENDED EXCISION OF PTERYGIUM WITH SUTURE-LESS AND GLUE-LESS CONJUNCTIVAL AUTOGRAFT IN PTERYGIUM SURGERY

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Received : 25/10/2022
Received in revised form : 21/11/2022
Accepted : 04/12/2022

Keywords:

Pterygium, Surgery, Autograft, Suture-less, Glue-less.

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DOI: 10.47009/jamp.2023.5.1.60

Source of Support: Nil,

Conflict of Interest: None declared

Int J Acad Med Pharm
2023; 5 (1); 291-294



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Abstract

Background: Pterygium is a common ocular disease in humid and subtropical regions. Despite being recognized for many years, very little is known about its pathogenesis. Thus, we have evaluated and analyzed the surgical outcome of extended excision along with suture-less and glue-less conjunctival autograft to manage pterygium effectively. **Materials and Methods:** The present study was a prospective, observational study. We have included 60 Patients (60 eyes) with pterygium presenting to the outpatient department and residing as inpatients in the Ophthalmology ward of Government Rajaji Hospital, Madurai. Routine pre-operative evaluations were done using standard techniques, including essential ocular history, uncorrected and best-corrected visual acuity, slit lamp examination, sciascopy, and retina examination. **Result:** In our study, the major affected persons were in the fifth decade in the age group of 56-60. Most patients were farmers, 23.3% and coolie 21.7% working outdoors. As the number of hours spent outdoors increases, the severity of the pterygium also increases—most patients who spent more than 8 hours per day presented with a T3 grade. Pre-operatively, astigmatism was present in 90% of the cases, while post-operatively amount of astigmatism was greatly reduced. In the present study, pterygium recurred in one patient (1.67%). **Conclusion:** Pterygium was more common among males, as a higher incidence of pterygium was noticed in individuals involved in outdoor work.

INTRODUCTION

Pterygium is a common ocular disease seen principally in humid and subtropical regions. Despite being recognized for many years, very little is known about its pathogenesis. Pterygium is a triangular encroachment of epithelial-covered, subconjunctival fibrovascular tissue towards the cornea, usually in the palpebral fissure, commonly on the nasal side rather than the temporal side. A higher incidence of pterygium occurs in the eyes exposed to high ultraviolet rays, dryness, heat, dust, and wind.^[1,2]

Surgical excision remains the principal mode of treatment for pterygium. Various techniques have been tried, like simple excision, the Bare sclera method, transplantation of the pterygium head, mucous membrane or conjunctival graft or flap to cover bare sclera, and lamellar keratoplasty. Recently, for advanced and recurrent pterygium, the focus has shifted to the use of planned surgical repair with normal conjunctiva or limbus flap.^[1,2,3,4]

Aim

The present study focused on evaluating and analyzing the surgical outcome of extended excision along with suture-less and glue-less conjunctival autograft in the effective management of pterygium.

MATERIALS AND METHODS

The present study was a prospective, observational study. We have included 60 Patients (60 eyes) with pterygium presenting to the outpatient department and residing as inpatients in the Ophthalmology ward of Government Rajaji Hospital, Madurai.

Inclusion Criteria

Patients above 20 years of age of both sexes, progressive nasal or temporal pterygium, diminution of vision either because of astigmatism or encroachment on the pupillary area, and pterygium crossing the limbus of grades T2 and T3 of TAN'S classification

Exclusion Criteria

Anterior segment disorders, eyelid disorders, retinal pathology requiring surgical intervention, pseudo pterygium, dry eye & other ocular surface disorders, pregnant & lactating women, previous history of ocular surgery or trauma, and patients who are likely to be lost for follow up.

Initially, the patient was informed about the significance of surgery and the detailed surgical procedure. Then informed written consent was obtained from each participant. Next, patients underwent extended excision of pterygium followed by suture-less and glue-less conjunctival autograft using serum from the bleeding conjunctival vessels for fixation.

Routine pre-operative evaluations were done using standard techniques, including essential ocular history, uncorrected and best-corrected visual acuity, slit lamp examination, sciascopy, and retina examination. During the post-operative assessment, patients were assessed on day 1, week 1, after one month, and after six months. The assessment procedure includes ocular symptoms, slit lamp examination of graft position and complications, refraction and recurrence.

RESULTS

In our study, the minimum age of the patient was 38 years, and maximum age was 71 years, and the mean was 55.8 ± 7.32 years. Major affected persons were in the fifth decade in the age group of 56-60. None of them was less than 30 years. 68.33% of the affected patients were males, and 31.67% were females [Table 1]. Most patients were farmers, 23.3% and coolie 21.7% working outdoors. Prevalence is commonly observed in individuals employed principally outdoors, with 86.67% in the present study. Coolie and farmers are in the lead than other out-to-door work. The indoor group occupies 13.33%.

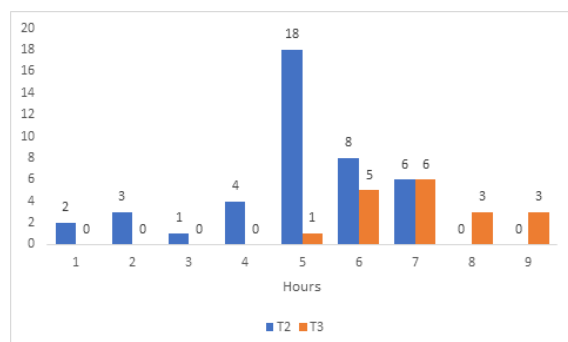


Figure 1: Total number of hours spent outdoors in a day vs severity of pterygium

It was observed in the entire study the total number of hours spent increases outdoors, and the severity of the pterygium also increases—most patients who spent more than 8 hours per day presented with T2 grade [Figure 1].

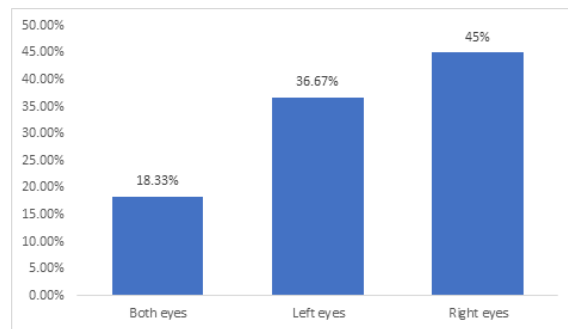


Figure 2: Laterality

We have seen that 81.67% of patients were affected unilaterally, while 18.33% had a bilateral presentation. Also, none of the patients with pterygium took protective measures to prevent ultraviolet rays from the sun.

Most patients presented with nasal pterygium 96.67% and temporal pterygium 3.33%. Pterygium of grade T2 and T3 by TAN'S classification was only included in our study. In most patients, 70% presented with T2 grade [Table 2].

Pre-operatively, a VA of 6/6 is present in only one patient and 6/60 in 9 patients. The above table showed a significant improvement in vision after pterygium excision [Figure 3].

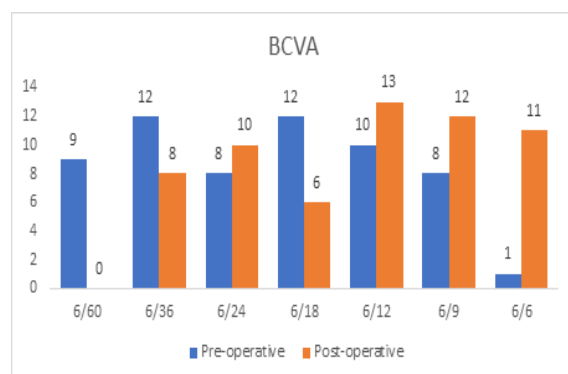


Figure 3: BCVA-pre- vs post-operative

Pre-operatively, astigmatism was present in 90% of the cases. However, post-operatively, astigmatism was greatly reduced [Table 2]. There was a significant reduction in astigmatism after pterygium excision with suture-less and glue-less conjunctival autograft.

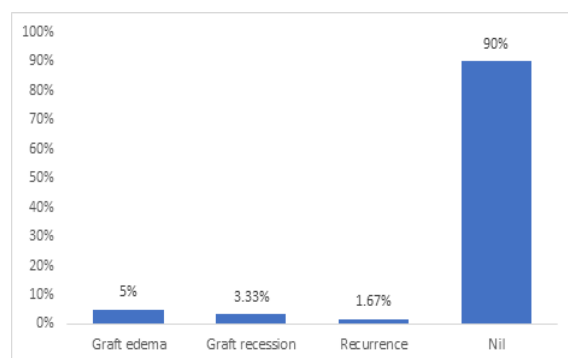


Figure 4: Post-operative complication

Table 1: Distribution of patient characteristics

		No. of cases	Percentage
Age	< 40	3	5
	46 - 50	12	20
	51 - 55	11	18.3
	56 - 60	19	31.7
	61 - 65	10	16.7
	66 - 70	4	6.7
	> 70	1	1.7
Gender	Male	41	68.33
	Female	19	31.67
Door work	Indoor	8	13.33
	Outdoor	52	86.67

Table 2: Demographic data.

		No. of cases	Percentage
Nasal/Temporal	Nasal	58	96.67
	Temporal	2	3.33
Grading of pterygium	T1	0	0
	T2	42	70
	T3	18	30
Pre-operative Astigmatism	Present	54	90
	Absent	6	10
Postoperative Astigmatism	Present	7	11.67
	Absent	53	88.33

Post-operatively majority of the patients had no complaints. In addition, three patients had graft oedema, two had graft recession, and only one presented with recurrence [Figure 4]. However, in the present study, pterygium recurred in one patient (a young male of 38 years). The recurrence rate was 1.67% [Figure 5].

**Figure 5: Recurrence**

DISCUSSION

In India, pterygium is a major disease burden experienced by healthcare professionals. Even though surgery is the definitive mode of treatment, it results in a high recurrence rate. Numerous surgical techniques evolved, implying the difficulty in finding one 'ideal' procedure. Pterygium extended

excision with suture-less, glue-less conjunctival grafting is simple and effective and does not involve tissue loss. This suture-less technique overcomes suture-related uneasiness, irritation, watering, and discomfort. Also, fibrin glue is very costly. This procedure is cost-effective. The lower recurrence rate with this procedure is accredited to the fact that normal conjunctiva acts as a barrier, inhibiting the proliferation and progression of the abnormal tissue toward the limbus.^[1,4,5,6,7]

Our study included 60 patients with pterygium in either or both eyes. They underwent pterygium extended excision with a suture-less, glue-less conjunctival autograft procedure. Most of the patients in this study are older individuals who attended our outpatient department with concurrent nuclear sclerosis of the lens and pterygium in their eye, accounting for reduced vision. If needed, simultaneous manual small incisional cataract surgery was done for them.^[4,5]

In our country, males are preferably working outside. Depending on their socioeconomic status, both males and females engaged in outdoor work. In the present study, pterygium was observed to occur primarily in males, as they are the earning persons of their families mainly involved in outdoor occupations. Therefore, occupation plays a major role in the aetiology and pathogenesis of pterygium.^[1,2,3]

The prolonged period and additive hours of exposure to UV rays were substantially higher in the T3 type of pterygium. None of the patients took preventive measures to protect themselves from sun exposure. These people are ignorant of the harmful effects of prolonged exposure to sunlight. Most common complaints include visual disturbances and ocular discomfort followed by redness, irritation, uneasiness, watering, and fleshy growth. There was

no patient with complaints of diplopia. Diminution of vision in the pterygium may be due to astigmatism, advancement of pterygium over the pupil, restriction of movement, and diplopia due to fleshy type and concurrent cataract. Significant improvement in best-corrected visual acuity was noticed in all patients in our study after pterygium excision, including the one with recurrence and worsened in none of the cases. Whenever needed, simultaneous small incision cataract surgery was done along with pterygium excision. Most patients had better vision post-operatively, with improvement in 1 to 2 Snellen lines.^[6,7,8,9,10]

In this study, we did not come across any intraoperative complications during surgery. They were followed up periodically, and there was no recurrence observed. Post-operative infection and graft loss were never noticed. In the present study, pterygium recurred in one patient. These rates were similar to those obtained in other previous studies. This observation shows that younger age is a risk factor for recurrence. So, the patient's age should be taken into consideration. Recurrence occurred in male patients, probably due to prolonged exposure to sunlight and dust. In our study, the post-operative cosmetic appearance was excellent in all patients, and the patient's comfort level was good.^[11,12,13,14,15]

CONCLUSION

Pterygium is more commonly observed in males and females in the fifth decade of life. Pterygium was more common among males, as a higher incidence of pterygium was noticed in individuals involved in outdoor work.

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