International Journal of Medical Ophthalmology

E-ISSN: 2663-8274
P-ISSN: 2663-8266
www.ophthalmoljournal.com
IJMO 2020; 2(2): 22-24
Received: 20-06-2020
Accepted: 24-07-2020

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Study to access the surgical outcome among patients attending ophthalmology unit with pterygium using various autografts at RVM Hospital, Siddipet, Telangana state

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DOI: https://doi.org/10.33545/26638266.2020.v2.i2a.36

Abstract
Introduction: Pterygium is more common in tropical areas, with prevalence ranging from 0.3 to 29%. Pterygium is more frequent in areas with more ultraviolet radiation, in hot, dry, windy, dusty, and smoky environments. Aim of the study is to assess the pterygium outcome with primary pterygium surgery.
Methodology: Hospital based Prospective interventional study with purposive sampling method. Study sample is 60 cases. The present study was conducted in Department of ophthalmology, RVM institute of Medical sciences and hospital, Telangana state. Study period was January 2019 to January 2020. Statistical analysis was done by entering data in excel sheet and expressing the data by frequency distribution, analysis is done by SPSS version: 21.
Results: Majority of the patients were between the ages of 30 to 50 years. The average age of the study group was 47.6 years. Female preponderance is observed than the male in this study. Males 21 and females 39. The location of pterygium was nasal in 60 eyes (100%). Majority of the patients presented with type III(50%) and grade III (64%). 12% of the patients presented with type I and 38% of the patients presented with type II pterygium. 36% of the patients presented with grade II pterygium16 patients out of 50 patients (32%) included in the study showed an improvement in visual acuity post-operatively. In 34 patients (68%) visual acuity remained the same. The mean visual acuity preoperatively was 0.52 +/- 0.46.D which improved to 0.68 $\pm$0.32 (P = 0.002) post-operatively.
Conclusion: Pterygium excision is a safe, effective and economical option for the management of primary pterygium requiring surgical intervention.

Keywords: Pterygium, photophobia, visual acuity

Introduction

Pterygium is more common in tropical areas, with prevalence ranging from 0.3 to 29%. Pterygium is more frequent in areas with more ultraviolet radiation, in hot, dry, windy, dusty, and smoky environments [1]. Primary Pterygium is a wing shaped, triangular fold of conjunctival, occurring commonly along the exposed portions of the palpebral aperture. Pathologically primary pterygium is a degenerative, hyperplastic process accompanied by elastic degeneration of the subconjunctival tissues.In general, conservative therapy for pterygium is warranted as recurrences after pterygia excision are frequent and aggressive. The excision of a pterygium with no added therapy (Bare sclera technique) was widely practiced earlier. However because of the high recurrence rate ranging from 32 to 88%, numerous adjunctive measures have been described to reduce the recurrence rates after its excision. These may be broadly classified s medical methods, beta irradiation and surgical methods [2].

Aims & Objectives: Prospective interventional study in patients with pterygium to compare the outcome of primary pterygium surgery.
1. To study the recurrence rate for limbal conjunctival autograft after pterygium excision.
2. To compare the preoperative and postoperative visual acuity in the study group.
3. To compare the duration of surgery.
4. To compare the post-operative complications.

Methodology: Hospital based Prospective interventional study with purposive sampling method. Study sample is 60 cases. The present study was conducted in Department of Ophthalmology, RVM institute of Medical sciences and hospital, Telangana state. Study period was January 2019 to January 2020. Statistical analysis was done by entering data in excel sheet and expressing the data by frequency distribution, analysis is done by SPSS version: 21

Inclusion criteria: Patients with primary pterygium for which surgery was recommended and those willing to participate in the study.

Exclusion criteria: Patients with, pseudo pterygium, history of ocular infection, history of ocular trauma and recurrent pterygium and Patients who were not willing to participate in the study were excluded.
Written informed consent was obtained from all the patients. RVM institute ethics committee clearance is taken in advance to start the study.

Results

Table 1: Age distribution among the study participants

Age	Number
20-30	03
31-40	08
41-50	13
51-60	21
61-70	15

Majority of the patients were between the ages of 30 to 50 years. The average age of the study group was 47.6 years.

Table 2: Gender distribution among the study participants with different treatment procedure for pterygium

	8-0 vicryl	Glue	Autologous Blood
Males	7	4	10
Females	13	16	10

Female preponderance is observed than the male in this study. Males 21 and females 39.

Table 3: Presenting complaints among the study participants

Presenting Complaints	No. of Patients	Percentage
Fleshy Growth	60	100
Redness	22	36
Pain	15	25
Watering	8	13
Photophobia	17	28
Diminished Vision	25	41

The most common complaint was noticing a fleshy growth in the eye in all the cases (100%). The other common complaint was diminished vision in 50% of the cases. The other complaints include photophobia in 34%, pain in 30%, and redness in 24%, watering in 16% and of the cases. Out of 50 patients in the study 60% had a history of use of topical medications for the same complaints.

Table 4: Location & characteristics of pterygium among the study participants

Pterygium location	No. of Patients	Percentage (%)	
Nasal	60	100	
Total	60	100	
Characteristics of pterygium	I	II	III
	2 (3%)	14 (23%)	44 (73%)

The location of pterygium was nasal in 60 eyes (100%). Majority of the patients presented with type III(50%) and grade III (64%). 12% of the patients presented with type I and 38% of the patients presented with type II pterygium. 36% of the patients presented with grade II pterygium.

Table 5: Pre-operative and Post-operative Visual Acuity in Pterygium Surgery

BCVA	Pre-operative Mean VA ± SD	Post-operative Mean VA ± SD	P value
	0.52 ±0.46D	0.68 ±0.32	0.002

16 patients out of 50 patients (32%) included in the study showed an improvement in visual acuity post-operatively. In 34 patients (68%) visual acuity remained the same. The mean visual acuity preoperatively was 0.52 +/- 0.46.D which improved to 0.68 ±0.32 (P = 0.002) post-operatively.

Table 6: Recurrence after Pterygium Surgery among the study participants

Recurrence	No. of Cases	Percentage
Present	9	15
Absent	51	85
TOTAL	60	100

Out of the 60 patients, 9 patients showed recurrence. Of the 9 patients, 3 patients showed recurrence in the 3rd month and the other patient showed recurrence in 6th month of follow up.

Table 7: Complications among the study participants

	8-0 Vicryl suture	Commercial glue	Autologous blood
Foreign body sensation	7	0	0
Graft edema	1	1	0
Graft retraction	3	0	2
Hemorrhage under the graft	0	6	2

Post-operatively symptoms like pain, watering and discomfort were complained by most of the patients which resolved within 4 weeks after surgery with the use of topical medications. 7 patients (14%) showed foreign body sensation on the first post-operative day which disappeared spontaneously in 1-2 weeks. 3 patients (8%) showed graft retraction which resolved spontaneously in 1-2 weeks. One patient had a graft dislocation within one month of the surgery which later resulted in a recurrence of the pterygium. Two of the 60 patients (13%) had a haemorrhage under the graft which resolved spontaneously within one month of the surgery.

Discussion

Among the 60 patients included in the study 21 were males (35%) and 39 were females (65%). Majority of the patients were between the ages of 30 to 50 years. The mean age of the study group was 47.6 years this observation is near similar to the study conducted by S. Srinivasan *et al.* [3]. the study group consisted of 42% males and the mean age of the patients was 47 years. Majority (74%) of the patients included in the study were engaged in outdoor occupations which could be a predisposing factor for the development of pterygium. All the patients included in the study had primary pterygia. The location of pterygium was nasal in 60eyes (100%) which is similar to the conducted by D de Wit *et al.* [4]. all 15 patients (100%) had primary nasal pterygia and similar observation is reported by S. Maheshwari [5]. 35 out of 36 patients had nasal pterygium (97.2%). Majority of the patients presented with type III (50%) and grade III (64%). 12% of the patients presented with type I and 38% of the patients presented with type II pterygium. 36% of the patients presented with grade II pterygium. The above observations are in contrast with the study conducted by S. Maheshwari [5]. none of the eyes had grade I pterygium, 16 eyes (44.45%) had grade II pterygium, 12 eyes (33.33%) had grade III pterygium, 7 eyes (19.45%) had grade IV pterygia and 1 eye (2.77%) had a double headed pterygium.21 patients out of 60 patients (35%) in the study showed an improvement in visual acuity post-operatively. In 34 patients (68%) visual acuity remained the same. The mean visual acuity preoperatively was 0.52 + 0.46 D which improved to 0.68 + 0.32 (P=0.002) post-operatively. In a study conducted by S. Maheshwari [5], visual acuity remained the same in 21(58.33%) eyes, 15 eyes (41.67%) showed 1 or 2 line improvement in visual acuity. The mean visual acuity pre-operatively was 0.53 + 0.35 D which improved to 0.68 + 0.34(P=0.001) postoperatively. Graft retraction, was seen in 3 eyes (8%) in our series which disappeared once the chemosis was controlled. It did not affect the final position of the graft. Graft retraction occurred in 3 eyes (7.5%) in the study conducted by Malik KPS [6] Graft retraction occurred in 20% cases in Foroutan *et at* [7], series. Wit *et al.* [4], postulated that suture less and glue free graft resulted in an even tension across the whole of the graft interface and no direct tension on the free graft edges resulting in reduced stimulus for the formation of subconjunctival scar. Tan advocated that risk of graft retraction could be minimized with meticulous dissection of sub epithelial graft tissue.

Conclusion

Pterygium excision is a safe, effective and economical option for the management of primary pterygium requiring surgical intervention. However there is a risk of graft retraction, graft dislocation and recurrence in small percentage of cases. Conjuctival autografting with 8-0 vicryl, cyanoacrylate glue and autologous blood fixation showed similar recurrence rates.

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