Original Research Paper

Volume - 10 | Issue - 9 | September - 2020 | PRINT ISSN No. 2249 - 555X | DOI : 10.36106/ijar

Ophthalmology

A CLINICAL STUDY OF PRIMARY PTERYGIUM AND ITS MANAGEMENT USING AUTO-CONJUNCTIVAL IN SITU GRAFT – A NOVEL TECHNIQUE

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ABSTRACT Pterygium is a degenerative condition of subconjunctival tissue which proliferates as vascularized granulation tissue to invade cornea destroying superficial layers of stroma and bowman's membrane, the whole being covered by conjunctival epithelium. This study was conducted to learn clinical aspects primary pterygium and its management using autoconjunctival insitu graft. In this study total 95 eyes of 95 patients were included in the study. A detailed history and clinical examination, slit lamp examination and autoref-keratometry was done. After detailed examination, and taking fitness for surgery, patients were taken for excision of pterygium with auto-conjunctival insitu graft. After surgery,patients were followed up after a period of one week, 1 month and 3 months for post-operative complications and recurrence. The average refractive astigmatism (± SD) preoperatively in 67 cases was 2.94 ± 1.27 at axis 100.89 degree and in rest 28 cases it could not be calculated due to large-sized pterygium and this change was statistically significant. Recurrence rate seen in this study with conjunctival in situ graft was 4.21% INSTEAD OF 4.27 which is comparable to standard autoconjunctival graft

KEYWORDS :

INTRODUCTION:

Pterygium is a degenerative condition of subconjunctival tissue which proliferates as vascularized granulation tissue to invade cornea destroying superficial layers of stroma and bowman's membrane, the whole being covered by conjunctival epithelium[1].

It presents commonly on nasal side than temporal side although either or both can occur[2]. Its main clinical presentation is redness, irritation, decreased vision, and ocular discomfort, it may also be asymptomatic and patients' only complaint is a cosmetic blemish. It can induce significant astigmatism and cause visual impairment[3].

If the pterygium is left untreated and its associated risk factors are not avoided or reduced, it can result in visual impairment or blindness due to fibro- vascular coverage of visual axis of the cornea, astigmatism and opacity[4].

AIMS AND OBJECTIVES:

1. To study the predisposing factors for pterygium.
2. To study age and sex incidence and its relationship.
3. To study its effect on vision and pattern of astigmatism induced by primary pterygium
4. To study the safety and efficacy of autoconjunctival in situ graft in the treatment of primary pterygium.

MATERIALS AND METHODS:

Study design: Prospective study
Study area: OPD, Department of Ophthalmology.
Study population: All the patients having primary pterygium attending ophthalmology OPD those fulfilling the inclusion/exclusion criteria and those who are willing to give informed written consent will be included in the study.
Sample size: 95 eyes of 95 patients were included in the study
Study duration: From January 2018 to June 2019.

INCLUSION CRITERIA:

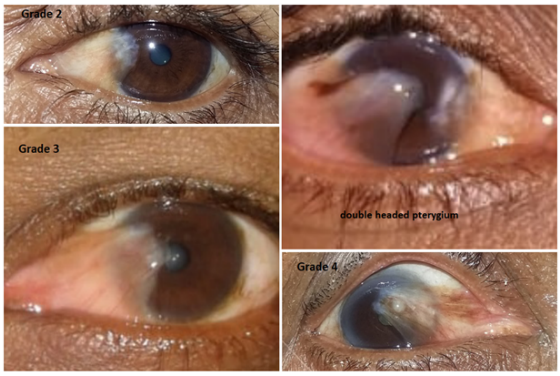
1. All patients with primary pterygium with prominent cosmetic and visual complaints
2. Patients willing for surgery

EXCLUSION CRITERIA:

1. Patients unwilling to giving their consent
2. Patient with early pterygium with no cosmetic or visual complaints
3. Patients with serious systemic illness preventing fitness for surgery
4. Patients who did not follow up regularly

METHODOLOGY:

- This prospective study was conducted in the ophthalmology department of government medical college, from January 2018 to June 2019.
- All patients having primary pterygium causing visual and cosmetic complications and those who are willing to undergo surgery have been included in the study.
- After inclusion in the study, detailed clinical examination was done after which autoref- keratometry and slit lamp examination was done.
- A detailed examination of the eye was done under slit lamp-blepharitis, meibomitis, presence of any other ocular surface infection, presence of any cataractous changes in lens were noted.
- Autoref-keratometry was done to note preoperative astigmatism and corneal curvature.
- Refractive astigmatism was recorded D (diopter) and axis noted in both meridian in all cases. K1 and K2 measurement is also done and keratometric astigmatism calculated in every case.
- After detailed examination pterygium excision with auto conjunctival in situ graft was done where conjunctiva over the body of pterygium itself is used as insitu graft
- Follow up was done after 1 week, then after 1 month, 3 months, 6 months postoperatively, to study pre-operative, post-operative astigmatism change, complications, and recurrence rate.



Picture 1: shows different grades of pterygium; managed by using conjunctival in situ graft

RESULTS:

The mean age was **51.90± 12.13** years. Among study participants, 62.1% were females. Among the patients 77.89% were having outdoor occupation. Around 94.7% pterygium were on nasal side, 3.15% were

on temporal side and 2.10% were on both sides. In 49.47% patients right eye was involved while in 37.89% patients left eye was involved, in remaining 12.63% patients both eyes were involved. Most patient presented with progressive pterygium that is 89.47%, 10 cases of atrophic pterygium (10.52%) were operated mainly due to cosmetic complaints. Maximum number of patients had chief presenting complaint of itching and redness (recurrent inflammation) (43.15%) followed by a diminution of vision (32.63%).

On grading of pterygium, 56.84% patients presented with grade 2 nasal pterygium while 37.89% patient presented with grade 3 pterygium. 5.26% patients presented with grade 4 pterygium.

Table 1 shows about best corrected visual acuity in affected eye. Maximum patient belonged to BCVA 6/18 – 6/36 (46.31%) and 17. 89% belonged to BCVA less than or equal to 6/60. Postoperatively improvement in BCVA was seen in 69.47% and deterioration was seen in 5.26% which was due to progressive senile cataract changes. BCVA remained stable or unchanged in 35.78% cases.

Table no 1: Best-corrected visual acuity in the affected eye

Preoperative BCVA	Number of patients	Postoperative BCVA (at 1month post-operative follow up)		
		Improvement	Stable	Deterioration
<6/60 or 6/60	17(17.89%)	10	2	5
6/18-6/36	44(46.31%)	40	4	0
6/12-6/6	34(32.63%)	16	27	0
	95	66(69.47%)	34 (35.78%)	5(5.26%)

The average refractive astigmatism (± SD) preoperatively in 67 cases was 2.94 ± 1.27 at axis 100.89degree and in rest 28 cases it could not be calculated due to large-sized pterygium.

We calculated p value for pre-op and post op changes in refractive astigmatism by using Z –test: two sample for mean and we got P value of 0.0000 ($p < 0.001$), and hence statistically highly significant.

Table 2 shows preoperative and postoperative pterygium in affected cases according to grading of pterygium. In this study out of 95 cases, 54 cases have grade 2 pterygium showing 3.44 ±1.37 pre- operative keratometric astigmatism which is with the rule astigmatism. Similarly total 36 cases presented with grade 3 pterygium shows keratometric astigmatism of 4.74±1.42 which is with the rule astigmatism. In case of grade 4 pterygium, due to extensive encroachment of cornea, preoperative keratometric astigmatism calculation was not possible.

Table 2: Average ± SD pre and postoperative keratometric astigmatism according to grade of pterygium

Sr. no	Pterygium grade	Total cases	Preoperative			Postoperative		
			K1 (horizontal)	K2 (vertical)	Keratometric astigmatism ± SD	K1 (horizontal)	K2 (vertical)	Keratometric astigmatism ± SD
1	2	54	41.16	44.63	3.44±1.37	43.29	45.037	1.72±0.73
2	3	36	41.02	45.80	4.74±1.42	43.55	45.52	1.96±0.811
3	4	5	NP	NP	NP	41.31	45.0625	3.68±1.33
	TOTAL	95						

Out of 95 cases, Average preoperative keratometry and keratometric astigmatism was possible in 89 cases, in rest 6 cases it was not possible due to large pterygium.

The mean keratometric astigmatism with ± SD was found preoperatively in all cases was 3.98±1.56 'with the rule astigmatism' and on 1 and half month post op follow up this mean keratometric astigmatism ± SD is decreased to 1.89 ± 0.89 'with the rule astigmatism' Like refractive astigmatism, p value for pre-op and post op changes in keratometric astigmatism by using Z –test: two sample for mean and we got P value of 0.0000 ($p < 0.001$), and hence statistically highly significant.

Out of 95 eyes with primary pterygium operated using method of conjunctival in situ autograft, 4 developed recurrence. Recurrence rate in grade 2 pterygium was 1.85%, in grade 3 pterygium 5.55% and in grade 4 pterygium 20%.

DISCUSSION:

In a study conducted by Shrinivas et al [5] Visual acuity improved or was maintained at the preoperative level in 51 (96.2%) eyes. In the 2 patients in whom postoperative visual acuity decreased.

In a study conducted by Allan D.S.B et al [6] Visual acuities were unchanged or improved in 86 cases out of 93 cases.
This shows that the current study is comparable with Shrinivas et al study and Allan et al study.[6]

Lin et al [7] have reported that the pterygium begins to induce significant degrees of hemi astigmatism once it reaches up to 45% of the distance from the limbus to the visual axis or within 3.2 mm of visual axis.

In Maheshwari et al [8] study the mean preoperative refractive cylinder decreased from 4.60 ± 2D to 2.20 ± 2.04D postoperatively.

Comparable results were seen in the present study where average preoperative refractive astigmatism decreased from 2.94 ± 1.27 at 100.89 to 1.41 ± 0.70 at 100.51 after pterygium excision. Recurrence rate seen in similar studies [9] [10] is comparable with our study with recurrence rate of 4.21%.

CONCLUSION:

This study concluded that pterygium is a very common ocular surface disorder, especially common in people in occupations which has outdoor activities, though cosmetic blemish, irritation, and inflammation are more common presenting symptoms, in our study vision loss was also present in significant amount of population. In case of vision affecting pterygium, CAG is best, but in our study, we used the auto-conjunctival in situ grafting method which easy, fast and has additional benefit of preserving superior conjunctiva for future glaucoma surgery.

REFERENCES

1) Sihota R, Tandon R. Diseases of the cornea. Parson's diseases of the eye. 20th edition, New Delhi, Elsivier. 2007; 175.
2) Fotouhi A, Hashemi H, Khabazkhoob M, Mohammad K. Prevalence and risk factors of pterygium and pinguecula: the Tehran Eye Study. Eye. 2008; 23(5):1125-1129.
3) Durkin SR, Abhary S, Newland HS, Selva D, Aung T, Casson RJ. The prevalence, severity, and risk factors for pterygium in central Myanmar: the Meiktila Eye Study. Br J Ophthalmol. 2008; 92:25–9.
4) Gazzard G, Saw S-M, Farook M, Koh D, Chia S-E, et al. Pterygium in Indonesia: prevalence, severity, and risk factors. Br J Ophthalmol 2002; 86(12): 1341–6.
5) Rao SK, Lekha T, Mukesh BN, Sitalakshmi G, Padmanabhan P. Conjunctival-Limbal autografts for primary and recurrent Pterygia: Technique and results. Indian Journal Ophthalmology 1998; 46:203-9.
6) Allan B, Short P, Crawford G, Barrett G, Constable I. Pterygium excision with conjunctival autografting: an effective and safe technique. British Journal of Ophthalmology. 1993; 77(11):698-701.
7) Lin A, Stern G. Correlation between pterygium size and induced corneal astigmatism. Cornea 1998; 17:28-30.
8) Maheshwari S. Effect of pterygium excision on pterygium induced astigmatism. Indian journal of ophthalmology 2003; 51:187-8
9) Shreesha Kumar Kodavoor, Nitin Narendra Tiwari, Dandapani Ramamurthy. Concomitant use of conjunctival tissue graft from the pterygium itself without rotation in pterygium surgery: A full circle in conjunctival autografting: Indian journal of ophthalmology: 2018;66(4)506-10
10) Chowdhury S, Sneha, Priti. New Surgical Technique for Pterygium: Conjunctival In situ Autograft. J Univer Surg.2018; 6 (3):19