International Journal of Medical Research Professionals
P-ISSN: 2454-6356; E-ISSN: 2454-6364
DOI: 10.21276/ijmrp

IJMRP

Original Research Article

Conventional and Autograft Surgery for Pterygium: A Prospective Comparative Study

Farhat Abrar

**Assistant Professor, Department of Ophthalmology,
Teerthanker Mahaveer Medical College and Research Centre, Moradabad, Uttar Pradesh, India.**

ABSTRACT

Background: Pterygium is a wing shaped, thick, fleshy, vascular fold of conjunctival tissue. Various techniques like irradiation, conjunctival autografting, conventional bare sclera technique, amniotic membrane transplantation, glue and suture application methods are used for the treatment according to the grade of pterygium.

Method: A prospective study was piloted in the Department of Ophthalmology, Teerthanker Mahaveer Medical College and Research Centre, Moradabad. In this study, 100 subjects who reported with the complaint of pterygium were included. The study compares the conventional bare sclera method with the current popular modality of treatment, the autologous conjunctival grafting method, keeping in mind the cost effectiveness as well as outcomes of the surgery with regards to recurrences, complications and patient satisfaction. The result was tabulated and the student's 't' test and chi square test were applied for quantitative and qualitative data respectively. The p value <0.05 was considered as significant.

Results: The pterygium mainly occurs in the age group of 40-50 years affecting both the genders equally. The incidence of nasal type of pterygium is high. The visual acuity remained same in 10% of patients undergoing conventional method and 25% of patients after autograft technique which was statistically significant. The recurrence of the disease occurred in 17% of patients after conventional surgery compared to 2% after autograft. The rate of complication in conventional and autograft surgeries was 8 and 3% respectively.

Conclusion: Conjunctival autografting is the gold standard method for the treatment of pterygium.

Keywords: Autograft, Bare Sclera Method, Pterygium.

***Correspondence to:**

Dr. Farhat Abrar,
Assistant Professor, Department of Ophthalmology,
Teerthanker Mahaveer Medical College & Research Centre,
Moradabad, Uttar Pradesh, India.

Article History:

Received: 18-02-2017, **Revised:** 09-03-2017, **Accepted:** 22-03-2017

Access this article online	
Website: www.ijmrp.com	Quick Response code
DOI: 10.21276/ijmrp.2017.3.2.062	

INTRODUCTION

Pterygium is a wing shaped, thick, fleshy, vascular fold of conjunctival tissue. It is considered as a benign growth which occurs mostly from nasal side of inter-palpebral area. The predisposing factors for pterygium are ultra-violet rays, low humidity and long duration of exposure to dust. It is considered as occupational disease.[1]

The higher incidence of pterygium on nasal side is explained by the fact that the refraction of sunlight on cornea occurs from lateral side which is focussed on limbic area. The common symptoms of pterygium are red and dry eyes, foreign body sensation followed by decreased vision in advanced cases. The corneal scarring and astigmatism also causes cosmetic problems. The pathological basis behind the pterygium is the degeneration of collagen fibres and fibrovascular proliferation.[2]

Various techniques like irradiation, conjunctival autografting, conventional bare sclera technique, amniotic membrane transplantation, glue and suture application methods are used for the treatment according to the grade of pterygium. The surgical treatment is preferred when there is decrease in the vision as it is a benign growth.[3,4]

In autografting technique after the removal of pterygium, the tissue that covers the sclera known as Tenon's layer is also extracted. This graft is applied on the bare sclera with either sutures or tissue adhesives. This method is effective and safe method and preferred cosmetically.[2,5,6]

The present study tries to compare the conventional bare sclera method with the current popular modality of treatment, the autologous conjunctiva grafting method, keeping in mind the cost effectiveness as well as outcomes of the surgery with regards to recurrences, complications and patient satisfaction.

MATERIALS AND METHODS

A prospective study was piloted in the Department of Ophthalmology, Teerthanker Mahaveer Medical College and Research Centre, Moradabad for a period of one year. In this study, 100 subjects who reported with the complaint of pterygium

were included. The subjects with the history of recurrent pterygium, atrophic pterygium, previous ocular surgery or trauma, immune system disease, eyelid or ocular surface diseases and patients on anticoagulants were excluded from the study. Only those patients who gave consent for surgery were selected for the study. A complete history regarding age, sex, occupation, family history and other influencing factors was recorded. All the patients were inspected first with a torch light and then a slit lamp examination was done. Visual acuity, ocular motility, patency of lacrimal passages and fundus examination details were noted. The grading of pterygium was done on the basis of Thomas Youngson grading system which is based on extent of growth on to the cornea from the limbus, grade 1- less than 2 mm, grade 2- between 2-3 mm, grade 3- more than 3 mm. Routine investigations were done followed by keratometry, intraocular pressure measurement. Patients were put on antibiotic drops 5 days before surgery. Out of total 100 patients, 45 of the subjects underwent conventional bare sclera technique and the remaining 55 were treated by conjunctival autograft technique. The subjects were informed about both the procedures regarding the complications and recurrence rates and an informed consent was taken.

Peribulbar block was given with 2% lignocaine before surgery.

After surgery, the eye was patched for 24 hours and oral analgesics were given for 3 days. After removal of eye patch, artificial tear drops were prescribed 4 times a day along with mild steroid/antibiotic eye drops for a period of 1 month. Follow up was scheduled at the end of postoperative 1st day, 1st week, 1st month, 3rd month and 6th month.

The result was tabulated and the student's 't' test and chi square test were applied for quantitative and qualitative data respectively. The p value <0.05 was considered as significant.

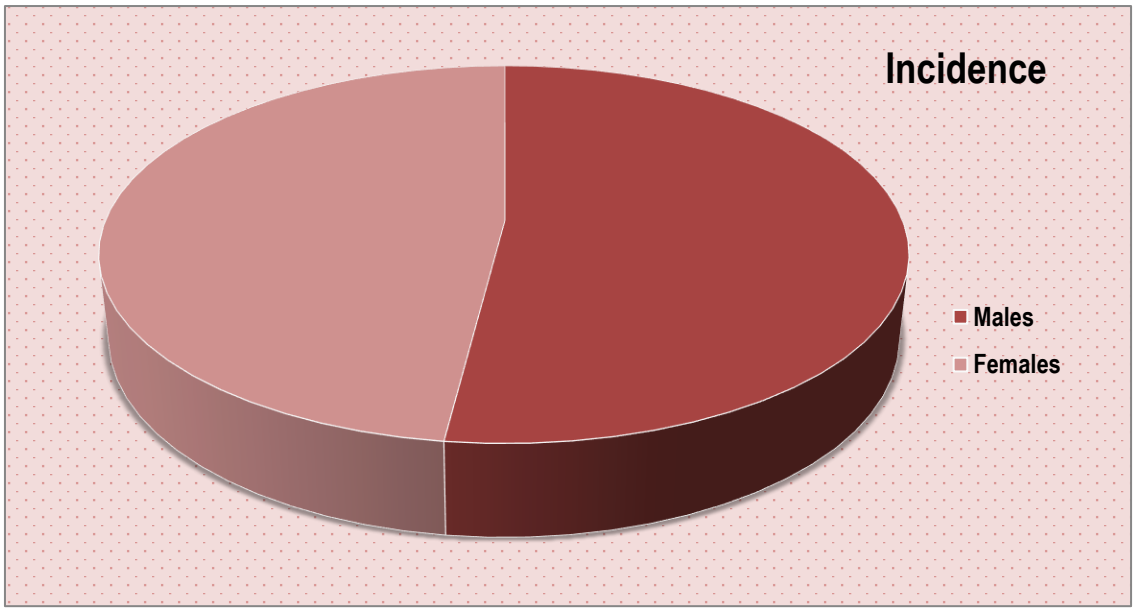

Figure 1: Comparison of incidence of disease in both the genders.

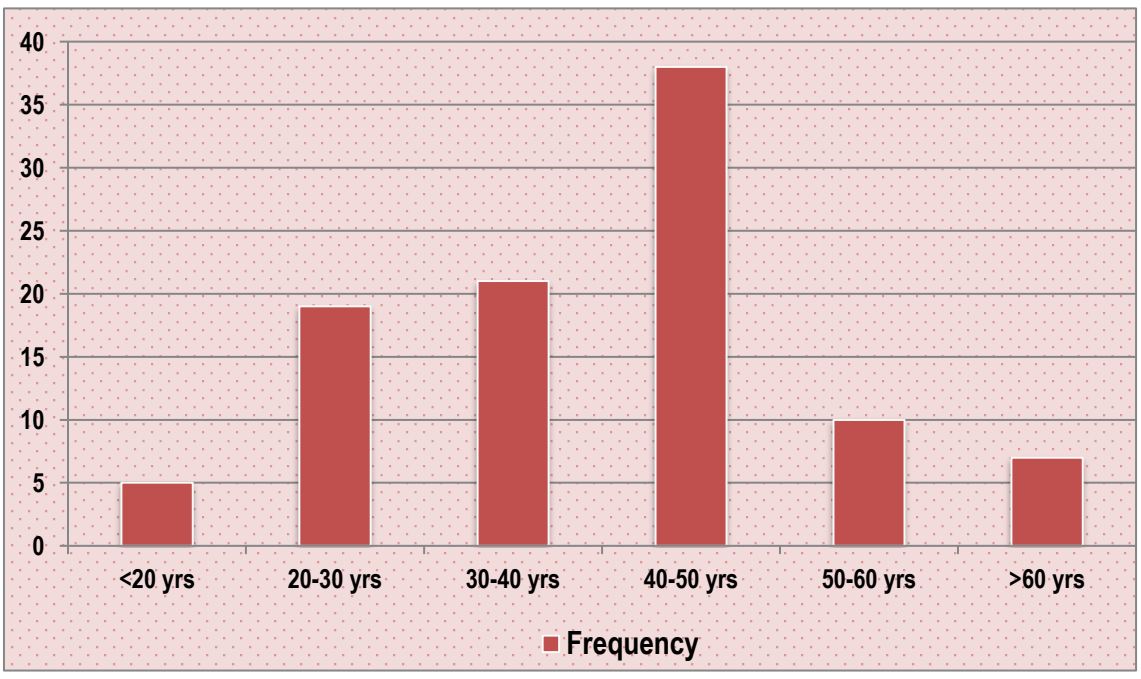

Figure 2: Comparison of incidence of disease in different age groups.

RESULTS

Among the 100 subjects studied, 48 of them were female whereas 52 were males. According to literature incidence of pterygium is more in males. The reason behind it is the exposure of eyes due to outdoor work. However, because of the increasing trend of working women this difference in the incidence has disappeared. Thus no significant difference was found in the incidence of the disease in both the genders [Figure 1].

The occurrence of pterygium is more in the age group of 20-30 years. But in our study, the subjects mainly belonged to age group of 40- 50 years [Figure 2].

The prevalence of nasal pterygium is more as compared to temporal. The ratio of percentage of nasal to temporal pterygium is 3:1 [Figure 3].

The change in visual acuity was compared in this study in the patients undergoing two different types of surgeries. 7% of patients in which conventional surgery was done showed deterioration in the visual acuity as compared to 6% in those who underwent autograft, but this was statistically insignificant ($p>0.05$). Similarly, statistical insignificance was seen in the patients who showed improvement in the vision after conventional (28%) and autograft (24%) surgeries. The visual acuity remained same in 10% of patients undergoing conventional method and 25% of patients after autograft technique which was statistically significant (<0.05) [Figure 4].

The recurrence of the disease occurred in 17% of patients after conventional surgery compared to 2% after autograft. The difference in recurrence rate was statistically significant ($p<0.05$). The rate of complication in conventional and autograft surgeries were 8 and 3% respectively which is statistically insignificant (>0.05) [Figure 5].

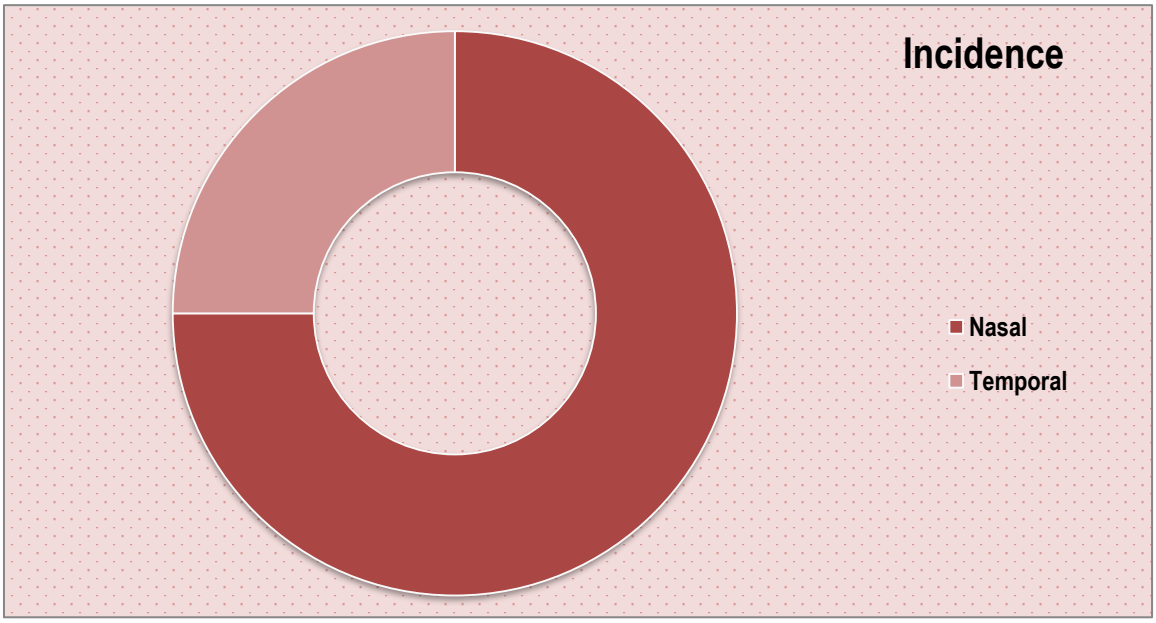

Figure 3: Diagram comparing the incidence of types of pterygium.

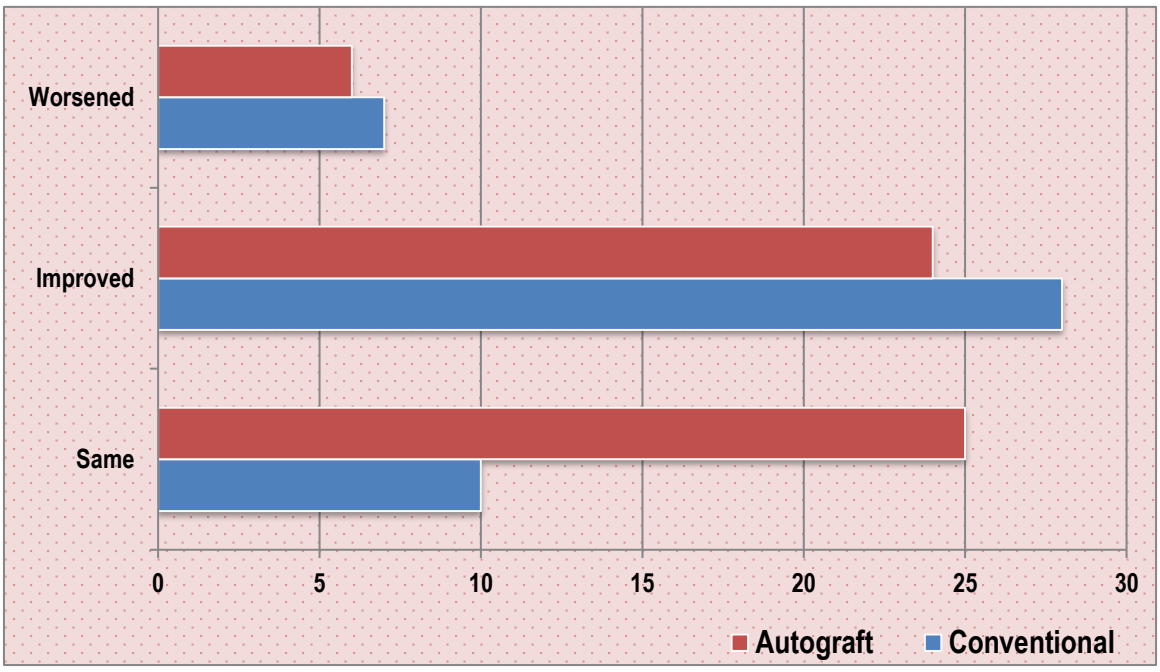

Figure 4: Comparison of change in visual acuity after conventional and autograft surgeries.

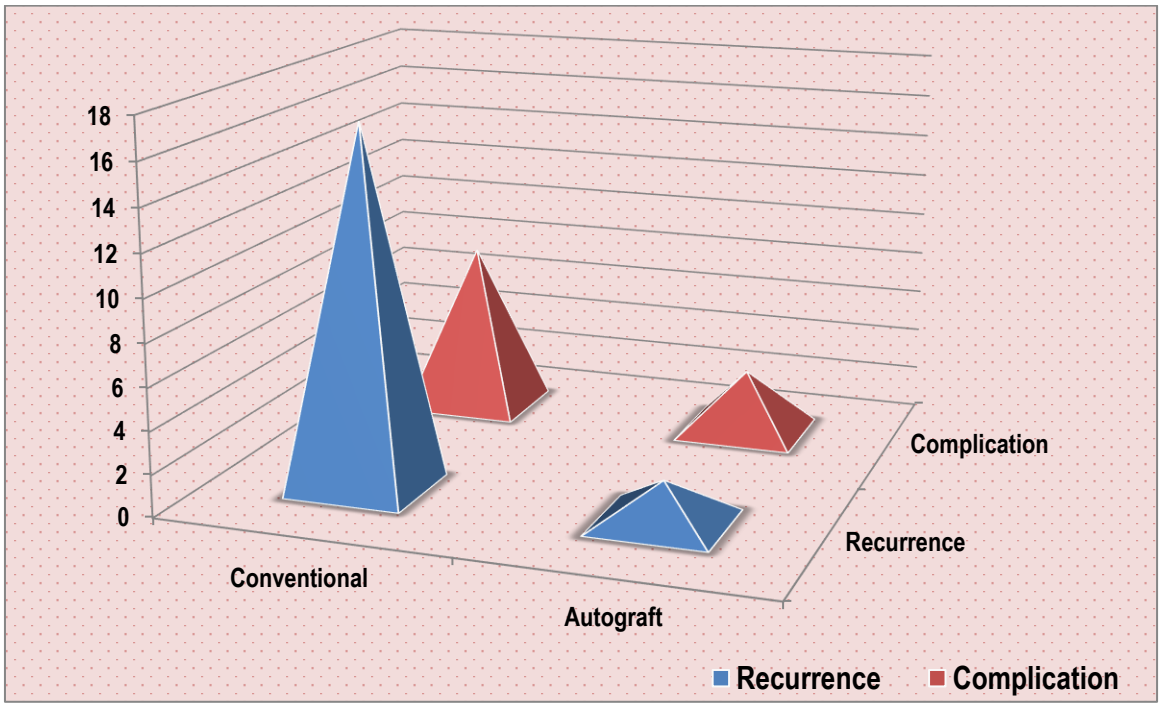

Figure 5: Comparison of Outcomes after conventional and autograft surgeries.

DISCUSSION

Pterygium is a common disease whose incidence is increasing in both the genders especially in the age group of 40-50 years. In the modern era where cosmetic surgery is proliferating it becomes utmost important to correct pterygium with the technique which has minimum complications and recurrence rate. Besides this, it should fulfil the requirements of the patient on cosmetic grounds. The relatively lower recurrences and declined risk of scleral necrosis makes autologous conjunctival transplant a better option for the treatment of pterygium.

According to various studies,[7-10] the disease affects favourably adults over middle age, being comparatively rare in children. The highest incidence is found in the 4th decade. This literature supports the finding of our study in which 38% of the patients belonged to age group of 40-50 years.

According to the study done in 1960 by Hillger's JH,[4] the disease is more prominent in males as compared to females. But recent studies like a research done in 2005 by Fernandes M[5] favours the equal incidence of disease in both the genders. These results correlate with observations of our study.

In the present study, 75 patients had pterygium nasally. This is due to the following factors: thinness of sub-conjunctival tissue in the temporal region, the temporal region is protected to UV radiation due to greater amount of bowing of outer two-thirds of upper lid.

The deterioration and improvement in the visual acuity compared in both type of surgeries were statistically insignificant. The visual acuity remained same in 10% of patients undergoing conventional method and 25% of patients after autograft technique which was statistically significant. Besides this, the recurrence of the disease was more in patients after conventional surgery. The rate of complication in conventional and autograft surgeries were 8 and 3% respectively which is statistically insignificant. Philip P et al[10] who have included 24 primary pterygia for autografting noted recurrence rate of 39% and a complication rate of 10%. According to Fernandes M et al.[5] autografting appears to be an effective modality for primary and recurrent pterygia. Bare sclera technique has an unacceptably high recurrence.

CONCLUSION

Conjunctival autografting for primary and recurrent pterygium is better than bare sclera excision due to various reasons:

1) Visual acuity remained same in 10% of patients undergoing conventional method and 25% of patients after autograft technique which was statistically significant.
2) The recurrence of the disease occurred in 17% of patients after conventional surgery compared to 2% after autograft.
3) The rate of complications in conventional and autograft surgeries was 8 and 3% respectively.

Thus, in the modern era, where better medical and surgical facilities are available and the cosmetic factors are emphasized the conjunctival autografting is the gold standard method for the treatment of pterygium.

REFERENCES

1. Cameron ME. Pterygium throughout the world. Arch Ophthalmol. Springfield, Ill Thomas; 1965; 74 (2): 288.

2. Salagar KM, Biradar KG. Conjunctival autograft in primary and recurrent pterygium: A study J Clin Diagn Re. 2013 Dec; 7 (12): 2825-7.

3. Rao SK, Lekha T, Mukesh BN, Sitalakshmi G, Padmanabhan P. Conjunctival limbal autografts for primary and recurrent pterygia: technique and results. Indian J. Ophthalmology. 1998; 46: 203–09.

4. J. H. Ch. Hilgers M. D. Pterygium: Its incidence, heredity and etiology. American journal of ophthalmology Volume 50, Issue 4, October 1960; 635-644.

5. Fernandes M, Sangwan VS, Bansal AK, Gangopadhyay N, Sridhar MS, Garg P, Aasuri MK, Nutheti R, Rao GN. Outcome of pterygium surgery: analysis over 14 years. Eye (Lond). 2005 Nov; 19 (11): 1182-90.

6. Kerkenezov N: A pterygium survey of the far north coast of New South Wales. Trans Ophthalmol Soc. Aust 1956, 16: 110-19.
7. R. Detels, MD, MS; S. P. Dhir, MD, Pterygium: A Geographical Study, Ophthalmol. 1967; 78 (4): 485-491.
8. Lewallen, S. A randomized trial of conjunctival autografting for pterygium in the tropics. Ophthalmology. 1989; 96. 11: pp. 1612-1614.
9. Donald T. H. Tan, FRCS; Soon-Phaik Chee, FRCS; Keith B. G. Dear, PhD; Arthur S. M. Lim, FRCS Effect of pterygium morphology on pterygium recurrence in a controlled trial comparing conjunctival autograft with bare sclera excision. Arch Ophthalmol. 1997; 115 (10): 1235-1240.
10. Philip P. Chen, M. D., Reginald G. AriyasuM. D., Venu Kaza, M. D., Laurie D. Labree, M. S., Peter J. Mc Donnel, M. D., A Randomized Trial Comparing Mitomycin C and Conjunctival Autograft after excision of Primary pterygium, American Journal of Ophthalmology August 1995;120(2):151-160.

Source of Support: Nil.

Conflict of Interest: None Declared.

Cite this article as: Farhat Abrar. Conventional and Autograft Surgery for Pterygium: A Prospective Comparative Study. Int J Med Res Prof. 2017; 3(2):291-95.
DOI:10.21276/ijmrp.2017.3.2.062