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ORIGINAL ARTICLE

Comparative Study of Limbal Conjunctival Autograft Vs Amniotic Membrane Grafting in Pterygium Excision Surgery

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ABSTRACT
To compare the safety and efficacy of conjunctival autograft in pterygium surgery and amniotic membrane graft. This is a comparative prospective study of 100 Patients (100eyes) from the outpatient department of Sree Balaji Medical College and Hospital, Chennai who presented with Pterygium were included in this study. Pterygium is more commonly seen in the third (32%) and fourth (36%) decades of life in both males and females. Pterygium was more common among females (54%). Incidence of pterygium was found to be more in those engaged in outdoor occupations ie.63% of the total. Unilateral pterygium (67%) was more common than bilateral pterygium (33%). Graft edema was seen more in the conjunctival autograft group (7%) than the amniotic membrane group (3%). Graft edge recession was seen more among the conjunctival autograft group (5 %). Loss of graft tissue was observed to be greater in the amniotic membrane group (3%). Two patients developed post-operative infection in the amniotic membrane group. Recurrence rate in the conjunctival autograft group was 6%. Recurrence rate in the amniotic membrane group was 11%. Recurrence rates between the two groups did not show any statistical significance (p = 0.393).
Keywords: Pterygium Excision, Limbal Conjunctival Autograft, Amniotic Membrane Grafting

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INTRODUCTION

Described by Sushrutha's early as in 1000 B.C. in India, literally meaning "wing", Pterygium is an encroachment of the conjunctiva on the cornea. With more frequent occurrences on the nasal side it is found in areas of high ultraviolet radiation, dry, hot, windy, dusty, and smoky environments1. Though diagnosing it is easy, treatment sometimes can be difficult2. Etiologically it is believed that limbal stem cells and pterygial fibroblasts that are exposed to ultraviolet rays get damaged3. Reduction in vision due to encroachment on the visual axis and irregular astigmatism and also due to chronic irritation, recurrent inflammation, and cosmesis are the indications for surgery4. With surgery as the treatment of choice, different procedures like keeping the resulting defect exposed or covering it with adjacent conjunctiva or any other tissue including limbal autograft. Adjunctive therapy with anti-metabolites has been tried. The best viable alternative to conjunctival autografts is the use of amniotic membrane5,6. The purpose of conducting the present study is to evaluate the clinical presentation and effective management of primary pterygium with conjunctival autograft and amniotic membrane graft.

MATERIAL AND METHODS

This is a comparative prospective study of 100 Patients (100eyes) from the outpatient department of Sree Balaji Medical College and Hospital, Chennai who presented with Pterygium were included in this study. Patients were divided into two groups of 50 each after being clinically evaluated. One group underwent replacement with conjuctival autograft after pterygium excision and the other group underwent pterygium excision and replacement with amniotic membrane graft. The patients who were glaucoma

suspects and had history of previous ocular surgery with conjunctival scarring, were included in the amniotic membrane group. Rest of the patients were selected with random sampling to round up the sample size to 50 in each group. After obtaining the Amniotic membrane from patients undergoing elective caesarean section at the Department of Obstetrics and Gynecology, SMBCH hospital and it was processed and stored as per the guidelines.

RESULT

In the entire study, pterygium was most prevalent in the outdoor occupation group with 63% of the affected patients belonging to this group. Among those working outdoors the most affected were farmers and vendors. The remaining 37% of the patients worked indoors.

The Figure – 1 shows that 50% of the patients were in the Conjunctival Autograft group (n = 50) and the remaining 50% belonged to the Amniotic membrane group.

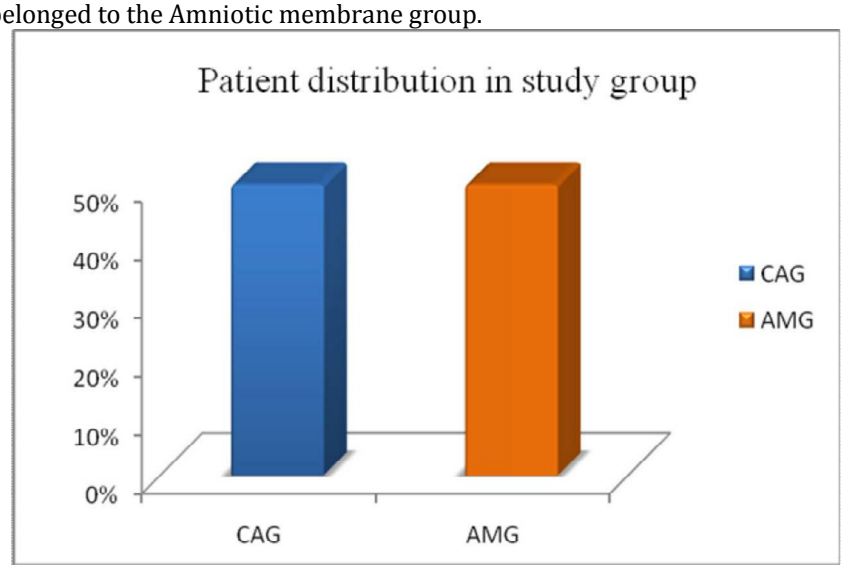


Figure – 1 Bar Diagram Showing Patient Distribution

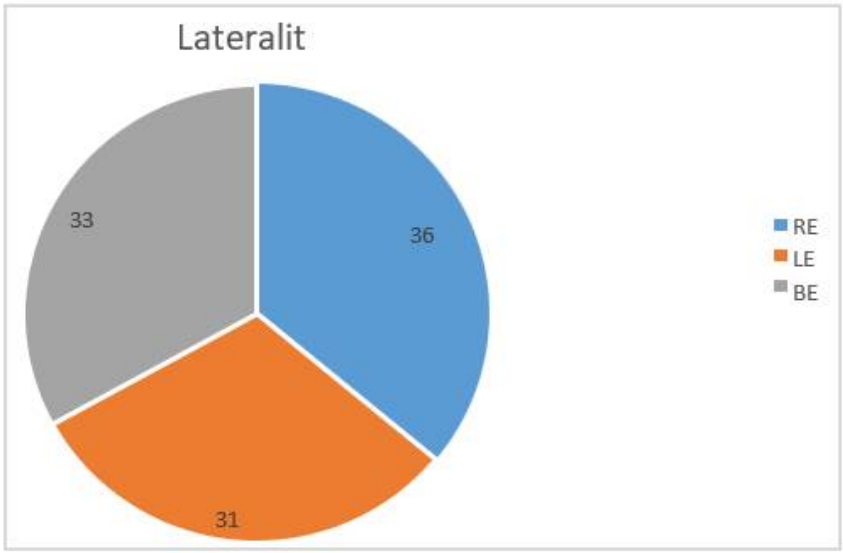
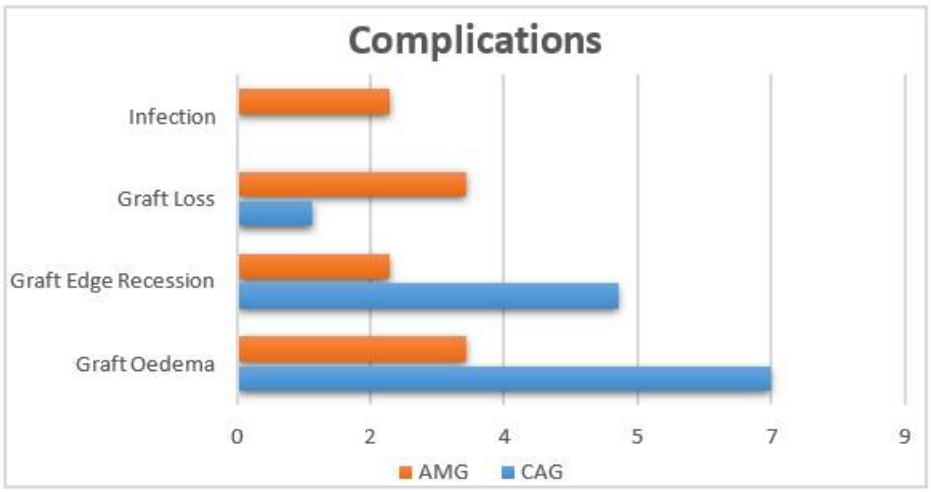


Figure –2 Showing laterality of pterygium

From the above chart, pterygium affected 36%, 31% and 33% of the case in the right eye, left eye and both eyes respectively. Out of the 100 patients included in the study, 96 patients had nasal pterygium, and 4 patients had temporal pterygium. Incidence of double headed pterygium was 0% Incidence of nasal pterygium was much higher than that of temporal pterygium.

Figure – 3 Bar diagram showing complications observed in the Conjunctival autograft and amniotic membrane group



The above data shows that, Graft edema was observed in 7 patients in the conjunctival autograft group and 3 patients in the amniotic membrane group, in the immediate post operative period. P value - 0.231(no significant difference)

Graft edge recession

Graft edge recession was noticed in 5 patients and 2 patients in the conjunctival autograft and amniotic membrane group respectively. P value – 0.643(no significant difference) Fig 1.

Total loss of graft tissue occurred in 1 patient in the conjunctival autograft group and 3 patients in the amniotic membrane group. P value - 0.555(no significant difference) Fig 2, 3.

Post operative infection occurred only in 2 patient who belonged to the amniotic membrane group. P value - 0.314(no significant difference)

Fig 1: **Conjunctival autograft**

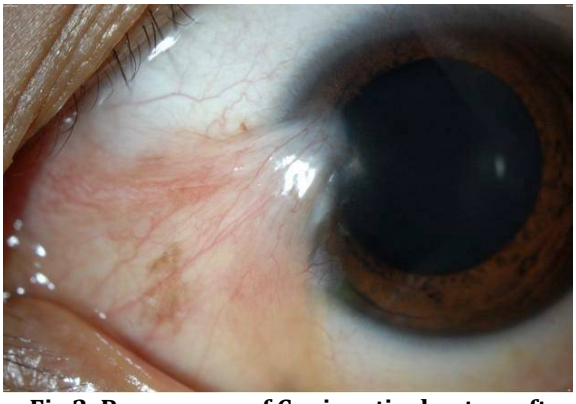


Fig 2: Recurrence of Conjunctival autograft

Fig 3: Amniotic membrane graft

DISCUSSION

Amniotic membrane reduces recurrences by promoting conjunctival epithelialization, inhibiting inflammation and suppressing subconjunctival fibrosis. Hence, the relevance of a study comparing these two techniques. Pterygium is more common in adults in the middle age group. In the present study, most of the patients were found to be in the age group of 41- 50 years (36 %). The next highest affected group was the 31-40 years age group (32 %). The high incidence seen among these age groups may be attributed to occupational exposure. In the present study, out of 100 patients, 46 (46 %) were males and 54 (54 %) were females. Occupation plays a major role in the aetiopathogenesis of pterygium. In the present study, pterygium was more common in persons engaged in outdoor occupations eg. farmers, coolies, vendors and they account for up to 63 out of the total 100 cases (63 %). This is in accordance with the findings of MacReynolds6, who stated that pterygium is more common among farmers than those people employed in sedentary occupations. Similar studies have been published by Hillgers [7], Anderson and Kerknezov8. In the present study, recurrence rate in the conjunctival autograft group was 6% and in the amniotic membrane group was 12%. These rates were similar to those obtained in other studies done by Kenyon [9], Solomon *et al* [10] and Prabhasawat *et al* [11]. After AM graft and conjunctival autograft the pterygium recurrence rates were 35 and 25%, respectively.

CONCLUSION

The results of our study, I conclude that both amniotic membrane graft and conjunctival autograft methods are equally effective treatment options for pterygium surgery, with comparable recurrence rates and cosmetic results and either may be selected based on the patient characteristics and the facilities available to the ophthalmologist

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