

Assessment of recurrence rate of pterygium operated with conjunctival autograft and fibrin glue

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Abstract

Background: Pterygium is a condition where sub conjunctival tissue which proliferates as granulation tissue to invade the cornea. The present study was conducted to assess the recurrence rate of pterygium operated with conjunctival autograft and fibrin glue. **Materials and Methods:** The present study was conducted on 72 patients of pterygium of both genders. The surgical operation was conjunctival autograft with fibrin glue. Routine follow-up time was performed in all cases. **Results:** Out of 72 patients, males were 42 and females were 30. Grade 1 was seen in 16 patients, grade 2 in 28, grade 3 in 20 and grade 4 in 8 patients. Recurrence rate was 0 with grade I, 1 with grade 2, 2 with grade 3 and 2 with grade 4. The difference was significant ($P < 0.05$). Time of follow ups was 3 months in 4 cases, 6 months in 2, 9 months in 6 cases, 12 months in 14, 15 months in 20. **Conclusion:** Authors found that Pterygium management with conjunctival autograft is a very simple, easy, economical and with less complications procedure. A low pterygium recurrence rate was observed after conjunctival autograft with fibrin glue.

Key Words: Conjunctival autograft, Cornea, Pterygium

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INTRODUCTION

The cornea must be clear to let the light get into the eye and the visual process begins. When the cornea loses its transparency, the sight could be severely affected, as happens when pterygium grows and covers the pupillary axis. Patients with pterygium consult physicians because of discomfort, ocular surface inflammation, red eyes, (aesthetic reasons) or finally, when their vision is decreased.¹ Pterygium is a condition where sub conjunctival tissue which proliferates as granulation tissue to invade the cornea, destroying the superficial

layer of stroma and bowman's membrane.² It is commonly seen in tropical and subtropical areas between the latitudes 30 degree north and south of the equator which includes India. It is caused by increased light exposure, dust, dryness, heat and wind. It can be easily excised, but it has a very high rate of recurrence ranging from 24% to 89%³. Recently it has been observed that with pterygium excision with conjunctival autograft and the use of antimetabolites such as mitomycin c and 5-Fluorouracil the incidence of recurrence has been reduced upto 12%.³ To reduce recurrence rates with fewer complications, pterygium excision performed with conjunctival autografting seems to be the best surgical procedure. Actually, the possibility to perform a surgery using biological adhesive, decreases the operation time and increases patient satisfaction.⁴ The present study was conducted to assess the recurrence rate of pterygium operated with conjunctival autograft and fibrin glue.

MATERIALS AND METHODS

The present study was conducted in the department of Ophthalmology. It comprised of 72 patients of pterygium of both genders. All were well informed regarding the

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study and written consent was obtained. Ethical clearance was taken prior to the surgery. Data such as name, age, gender etc. was recorded. The surgical operation was conjunctival autograft with fibrin glue. Pterygium was graded in four stages, grade 1 (less than 2.0 mm), grade 2 (2.0 mm - 4.0 mm), grade 3 (higher than 4.00 mm, without covering the visual axis) and grade 4 (tissue covering the visual axis). Mixture of gatifloxacin 0.3% prednisolone acetate 1.0% every 6 hours, starting one day before the operation and then, every 2 hours until two days and after that every 6 hours during the next 20 days. Ketorolac 0.5% topical drops, every 8 hours, starting one day before and after the operation for 20 days was prescribed. Routine follow-up time was performed in all cases. Results were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table 1: Distribution of patients

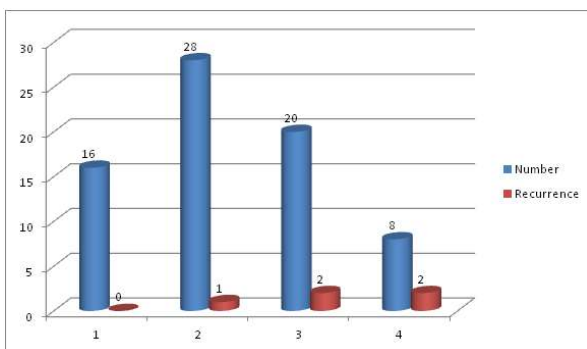
Total- 72		
Gender	Males	Females
Number	42	30

Table 1 shows that out of 72 patients, males were 42 and females were 30.

Table 2: Assessment of pterygium grade and recurrence rate

Grade	Number	Recurrence	P value
1	16	0	0.05
2	28	1	
3	20	2	
4	8	2	
Total	72	5	

Table 2, graph I shows that grade I was seen in 16 patients, grade 2 in 28, grade 3 in 20 and grade 4 in 8 patients. Recurrence rate was 0 with grade I, 1 with grade 2, 2 with grade 3 and 2 with grade 4. The difference was significant ($P < 0.05$).



Graph I: Assessment of pterygium grade and recurrence rate

Table 3: Months of follow up

Months	Cases
1	4
2	2
3	6
4	14
5	20

Table 3 shows that time of follow ups was 3 months in 4 cases, 6 months in 2, 9 months in 6 cases, 12 months in 14, 15 months in 20 cases.

DISCUSSION

Pterygium is an old challenge for ophthalmic surgeons. Among all the various techniques limbal conjunctival autograft is the best method because of low recurrence and high safety.⁵ The most common method of autograft fixation is suturing, which has drawbacks of prolonged operating time, postoperative discomfort, suture abscess, button holes, and granuloma formation which usually requires a second procedure for removal. Graft fixation with commercial fibrin glue is another technique with potential risk of transmitted infection and high cost. Autologous fibrin glue has been used as an alternative method.⁶ The present study was conducted to assess the recurrence rate pterygium operated with conjunctival autograft and fibrin glue. In present study, out of 72 patients, males were 42 and females were 30. We found that grade I was seen in 16 patients, grade 2 in 28, grade 3 in 20 and grade 4 in 8 patients. Recurrence rate was 0 with grade I, 1 with grade 2, 2 with grade 3 and 2 with grade 4. Pterygium excision with conjunctival autografting reduces recurrence rates with fewer complications, and subsequently, has become the first choice of surgical procedure. However, a considerable number of conjunctival sutures must be performed increasing the operation time and postoperative discomfort, which are some arguments against this technique. Also, the use of sutures in pterygium surgery is associated with postoperative inflammation, discomfort and complications related to the sutures themselves.⁸ We found that years of follow ups was 1 year in 4 cases, 2 years in 2, 3 years in 6 cases, 4 years in 14, 5 years in 20, 6 years in 14 and 7 years in 12 cases. Daponte *et al* in their retrospective case-series study reviewed cases operated with 1 year of follow-up. The evaluation time-points were at 1 day, 20 days, 6 months, 1 year after surgery and then every year. All the procedures were performed by the same surgeon in single center. Topical Mitomycin C (MMC), 5-Fluorouracil (5-FU), cauterization and/or amniotic membrane were not used in any case. From a total of 159 operated eyes (82/77 women/men), pterygium was recurred in 7 eyes (4.4%); all of them detected at the second follow-up time-point (at day 20). Intraoperative complications did not occur, but at

the postoperative stage, one case presented a conjunctival granuloma, which was surgically resolved. In conclusion, a low pterygium recurrence rate was observed after conjunctival autograft with fibrin glue. In our study, recurrence was found at the postoperative first month and did not recur until the end of follow-up for 10 years. Elwan *et al*¹⁰ in their study evaluate the pterygium recurrence rate with a long-term follow-up, after surgery was performed with conjunctival autograft and fibrin glue as a biological adhesive. All the procedures were performed by the same surgeon in single center. Topical Mitomycin C (MMC), 5-Fluorouracil (5-FU), cauterization and/or amniotic membrane were not used in any case. From a total of 159 operated eyes (82/77 women/men), pterygium was recurred in 7 eyes (4.4%); all of them detected at the second follow-up time-point (at day 20). Intraoperative complications did not occur, but at the postoperative stage, one case presented a conjunctival granuloma, which was surgically resolved. In conclusion, a low pterygium recurrence rate was observed after conjunctival autograft with fibrin glue. Recurrence was found at the postoperative first month and did not recur until the end of follow-up for 10 years.

CONCLUSION

Authors found that Pterygium management with conjunctival autograft is a very simple, easy, economical and with less complications procedure. A low pterygium recurrence rate was observed after conjunctival autograft with fibrin glue.

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