Management Outcome and Analysis of Prognostic Factors in Recurrent Pterygium-A Retrospective Study

Rashmi Kumari[1], Bhawesh Chandra Saha[2], Bibhuti Prasanna Sinha[3]

ABSTRACT

Introduction: The biggest concern in primary pterygium surgery is recurrence. Till date there is no gold standard technique for their management.This study was conducted to study the efficacy of conjunctival limbal autograft (CLAG) alone and CLAG with amniotic membrane transplantation (AMT) and mitomycin C (MMC) in patients of recurrent pterygium.

Material and methods: All the case records of patients of recurrent pterygium treated at a tertiary eye centre between the period April 2015 to December 2016 were analysed retrospectively and the patients were divided into three groups depending upon their management strategy.Group A formed by 15 cases underwent CLAG only. Group B comprising of 11 cases with history of multiple surgeries, advanced and double headed recurrence underwent CLAG with AMT and application of 0.02% MMC.

Result: Recurrence was seen in 13.3% group A and 27.27% in group B. Minor complications like post-op cyst (4 cases), granuloma (1 case), epithelial defect (1 case), graft over ride into cornea (2 cases), corneal opacity (4 cases) were encountered. Symblepharon was present pre-operatively in 2 eyes (group B) with history of 2 surgeries.

Conclusion: Conjunctival autograft alone gives acceptable results in recurrent pterygium as compared to combining it with AMT and MMC application. History of multiple surgeries, advanced recurrence, double headed recurrence are poor prognostic factors and adversely affect the outcome.

Keywords: Recurrent Pterygium, Conjunctival Autograft, Amniotic Membrane

INTRODUCTION

Pterygium is a fibrovascular growth of bulbar conjunctiva, growing upon cornea on either side, usually from nasal part of the limbus within the palpabral aperture.[1] It is a very common ocular surface disorder specially in our part of the world, as it is more prevalent in the people living in hot tropical climate. Although the exact etiopathogenesis of pterygium is not well understood, but exposure to ultraviolet radiation is supposed to be a major risk factor for its occurrence. Pathologically, pterygium is a degenerative condition of subconjunctival tissue, which undergoes elastic degeneration and proliferates as vascular granular tissue under the epithelium, which ultimately encroaches the cornea destroying the corneal epithelium, superficial stroma and Bowman's membrane. Currently, instead of being described solely as degeneration of conjunctiva, inflammation and fibrovascular proliferation are proven to be an important factors in its pathogenesis.

The biggest concern in primary pterygium surgery is recurrence.

Multiple options exist to manage recurrent pterygium without any single procedure being the gold standard till date neither is there any definitive guideline to manage them.

Purpose of this study is to study efficacy of conjunctival limdal autograft alone (CLAG) and CLAG with amniotic membrane transplantation (AMT) and mitomycin C (MMC) in treatment of recurrent pterygium and to simultaneously analyse the probable factors affecting the outcome.

MATERIAL AND METHODS

A retrospective analytical study was designed.All the case records of patients of recurrent pterygium treated at Indira Gandhi Institute of Medical sciences between the period April 2015 to December 2016 were analysed and the patients were divided into three groups depending upon their management strategy. Group A formed by 15 cases underwent CLAG only. Group B comprising of 11 cases with history of multiple surgeries, advanced and double headed recurrence underwent CLAG with application of 0.02% MMC for 2 minutes and AMT. Ten cases in group C with pterygium of Grade 1 or 2 were kept only under observation, Table 1. All the surgeries were done by a single surgeon under peribulbar anaesthesia with due consent of the patient and ethical clearence. Follow up was done monthly for 1 year then six monthly for two years.

STATISTICAL ANALYSIS

Microsoft office 2007 was used for the analysis. Descriptive statistics like mean and percentages were used for the analysis.

Grade	mm of invasion into cornea
1	0-2
2	2-4
3	>4

Table-1: Categorisation of pterygium

	Group A	Group B	Group C
M:F	11:4	8:3	7:3
Age (mean yrs)	23–63(42)	20- 51(37)	35-71(53)
Grade	2 in 9cases 3 in 6cases	3	1-2

Table-2: Demographic and clinical characteristics

[1]Senior Resident, RIO, IGIMS, Patna, [3]Professor and HOD, RIO, IGIMS, Patna, [2]Senior Resident, AIIMS, Patna, India

Corresponding author: Dr Bhawesh Chandra Saha, Senior Resident, AIIMS, Patna, India

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Study	Surgery	Recurrence	Mean follow up months
Raoet. al.[5]	Inferior limbal graft 11 eyes	18.2%	16.2
Shehadeh et al[6]	limbal autograft with MMC 28 eyes	3.57%	26.5
Fallah et al[7]	limbal autograft with AMT 20 eyes AMT with MMC 20 eyes	0% 20%	6-9
Al Fayez et al[8]	Limbal autograft in 15 eyes 10% Free conj autograft in 12 eyes	33.33% 0%	62
Ours	Limbal graft in 15 eyes Limbal graft with AMT and MMC in 11 eyes	13.3% 27.27%	9-36

Table-3: Comparision of recurrence rate in different Studies on management of recurrent pterygium by different techniques

RESULTS

A total of twenty six cases (26 patients) of recurrent pterygium underwent surgery while 10 cases were kept only under observation, depending upon the grade of pterygium at presentation,Table-2.Three cases were bilateral and two had double headed recurrence.

The interval between present and earlier surgery was 4 months to 36 months (average 13 months). The follow-up varied from 9 to 36 months. Recurrence was seen in 2 cases in group A (13.3%) and 3 cases in group B (27.27%). Of these recurred cases 3 cases had undergone surgery the third time. Minor complications like post-op cyst (4 cases), granuloma (1 case), epithelial defect (1 case), graft override into cornea (2 cases), corneal opacity (4 cases) were encountered. Symblepharon was present pre-op in 2 eyes (group B) with history of 2 surgeries.

DISCUSSION

There is no clear cut strategy to manage recurrent pterygium. Multiple studies have reported varied results with CLAG, CLAG with MMC and AMT (Table 3).

Limbal conjunctival autograft creates a barrier for reproliferation and the limbal stem cells help to improve limbal dysfunction.[1] Amniotic membrane has anti-inflammatory, antiscarring and anti angiogenic properties.[2] It acts as a temporary epithelial cover especially when there is not enough of conjunctiva available for grafting.[2] MMC acts as an antifibrotic agentthus decreasing recurrence. Application of MMC gives better outcomes but superficial keratitis is commonly reported.[3] One patient in our study had an epithelial defect which responded to topical therapy. Rare but severe complications with MMC use like endophthalmitis, infectious scleritis andscleral necrosis remain a reality.[4]

Our recurrence rates of 13.3% with CLAG is comparable with other similar study done by Rao et al.[5] Table 3

Another study by Fayez et al[8] compared limbal-conjunctival autograft with free conjunctival autograft and concluded that limbal autograft results in lesser recurrence than free conjunctival autograft possibly because of a higher load of limbal stem cells. Use of MMC, AMT with CAG in advanced, multi recurrent cases and double recurrence was thought to give better outcomes.[9] But a recurrence of 27.27% did not prove to be so.Ten cases in observation group were not operated as recurrent pterygium was only grade 1 to2 and there was no progression over a period of time. Kaufman et al[9] in 2013 in their study concluded that conjunctival or limbal autograft was superior to amniotic membrane graft surgery in reducing rate of pterygium recurrence. Conjunctival autograft with MMC further reduces the recurrence rate as compared to each procedure done alone. However application of the latter is associated with vision threatening complications with risks increasing with time and concentration of MMC.[9]

CONCLUSION

Conjunctival autograft alone gives acceptable results in recurrent pterygium. History of multiple surgeries, advanced recurrence and double headed recurrence are poor prognostics factors and the outcome is are further complicated by high recurrence on resurgery despite undergoing conjunctival autograft, amniotic membrane transplantation and mitomycin C application

REFERENCES

1. Fakhry M A. The use of mitomycin C with autologus limbal conjunctival autograft transplantation for management of recurrent pterygium. Clin. Ophthalmol. 2011;5:123-7.
2. Shimazaki J, Shinozaki N, Tsubota K. Transplantation of amniotic membrane and limbal autograft for patients with recurrent pterygium associated with symblepharon. Br J Ophthalmol. 1998;82:235-40.
3. Mutlu FM, Sobaci G, Tatar T, Yildrim E. a comparative study of recurrent pterygium surgery: limbal conjunctival autograft transplantation versus mitomycin C with conjunctival flap. Ophthalmology. 1999;106:817-21.
4. Sheppard JD. Mansur A, Comstock LC, Hovanesian JA. An update on surgical management of pterygium and the role of loteprednolol etabonate ointment. Clin Ophthalmol. 2014;8:1105-8.
5. Wong Ak, Rao SK, Leung AT, Poon AS, Lam DS. Inferior limbal- conjunctival autograft transplantation for recurrent pterygium. Indian J Ophthalmol. 2000;48:21.
6. Shehadeh MR, Srinivasan S, Boimer C, Lee K. Management of recurrent pterygium with intraoperative mitomycin C and conjunctival autograft with fibrin glue. Am J Ophthalmol. 2011;152:730-2.
7. Fallah MR, Golabdar MR, Amozadeh J, Zare MA. Transplantation of conjunctival limbal autograft and amniotic membrane vs mitomycin C and amniotic membrane in treatment of recurrent pterygium. Eye (Lond). 2008;22:420-4.
8. Al Fayez MF.Limbal-conjunctival vs conjunctival autogrft transplant for recurrent pterygia: a prospective randomized controlled trial. JAMAOphthalmol. 2013;131:11-6.
9. Kaufman SC, Jacobs DS, Lee WB, Deng SX, Rosenblatt MI, Shtein RM. Options and Adjuvants in surgery for pterygium: a report by the American Academy of Ophthalmology. Ophthalmology. 2013;120:201-8.

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