

Original Research Article

Clinical Study of Pterygium and Management of Recurrent Pterygium

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Abstract: Pterygium is very common ocular surface disorder. Usually develops in persons with outdoor activities. This pterygium develops and encroaches over the cornea and disturbs vision. The persons with pterygium complain of redness. Foreign body sensation and watering of the eye. The medical treatment of pterygium is of very little value. The surgical treatment is the mainstay treatment. Various surgical techniques are applied to treat pterygium viz. D'Ombrien bare sclera technique, pterygium resection with amniotic membrane transplantation and conjunctival limbal autografts. Satisfactory results can be achieved by applying these techniques with lesser recurrence. The study suggests male's preponderance over females with low socioeconomic status. Recurrence is seen more in patients treated with D'Ombrien technique with bare sclera over other techniques.

Keywords: Pterygium, Limbal, Augografts, D'Ombrien, 5-FU.

INTRODUCTION

Pterygium is common ocular surface disorder. Pterygium[2, 3] is a Greek word meaning wing of butterfly. It is a degenerative condition[1] of the subconjunctival tissue which proliferates as vascularized granulation tissue to invade cornea, destroying the superficial layer of stroma and Bowman's membrane, the whole being covered by conjunctival epithelium. Exact etiology[6, 7, 10] of it is not known but most probable causes are exposure to UV radiation, dryness due to sun, wind, dust etc. and recent studies suggest limbal cell deficiency.

Medical line of treatment proved to be of little value whereas surgical treatment[11] is considered to be satisfactory approach. Pterygium excision is indicated if the visual axis is threatened or if it causes extreme irritation or cosmetic disfigurement.

Postoperative recurrence is common problem. Out of total recurrence 70% occur within 12 months. To prevent this many methods have been advocated an adjuvant therapy with excision like conjunctival autograft [4, 5] application of MMC intraoperative, and injection of 5-FU in the body of pterygium. In this study we have used various procedures for both primary and recurrent pterygium and tried to analyze the best procedure to minimize recurrence.

MATERIAL AND METHODS

This study was conducted at Regional Institute of Ophthalmology, Gandhi Medical College, from July 2008 to October 2009.

Inclusion criteria:

- Patients complaining of conjunctival growth, foreign body sensation, redness and watering.

Preoperative assessment:

- Patient included in the study were subjected to the systemic and ophthalmological examination.
- Detailed history was recorded in regards to the ocular symptoms – duration of symptoms (foreign body sensation, redness and watering), progress of pterygium, history of exposure to sun, UV rays, wind, dust etc. Any history of pterygium surgery (recurrence).

Ocular examination (Pterygium):

- Conjunctiva: Site and extent of pterygium, vascularity and superficial opacities on body of pterygium were noted.
- Cornea: Extent of encroachment over cornea, presence of Stocker's line, superficial punctuate opacity.

- Slit lamp examination: To rule out dryness of the eye (Schirmer’s test, BUT), fluorescein stain, rose bengal stain
- Keratometry and refraction

Investigations: Complete blood picture, urine – R/M and blood sugar (random).

Medical treatment: NSAIDS, lubricating eye drops, steroids, and immunosuppressive agents were given to patient.

Surgical treatment:[12]

1. D’Ombrian’s Technique (Bare Sclera)
2. Conjunctival limbal autograft
3. 5-FU

Followup: Immediate post-operative day, 7th day, 1 month, 3 months, 6 months and 12 months.

RESULTS AND DISCUSSION:

Table 1: Distribution of cases according to sex

S.No.	Sex	No. of cases	Percentage
1.	Male	55	55%
2.	Female	45	45%
	Total	100	100%

Male and female ratio was found to be 1.2:1.

Table 2: Distribution of cases according to age

S.No.	Age (yrs)	No. of cases	Percentage
1.	< 20	1	1%
2.	21-30	14	14%
3.	31-40	42	42%
4.	41-50	23	23%
5.	51-60	11	11%
6.	> 61	9	9%
	Total	100	100%

In this study, the maximum incidence of pterygium was observed between 31-40 yrs age group which was 42% and 23% observed in age group 41-50 yrs and only 1% was observed in age group < 20 yrs.

Table 3: Distribution of cases according to socioeconomic status

S.No.	Socioeconomic status	No. of cases	Percentage
1.	Low	75	75%
2.	Middle	25	25%
3.	High	0	0%
	Total	100	100%

Maximum cases in this study belonged to lower socioeconomic status.

Table 4: Distribution of cases according to urban and rural population

S.No.	Type of population	No. of cases	Percentage
1.	Urban	52	52%
2.	Rural	48	48%
	Total	100	100%

There was little preponderance of pterygium to urban population.

Table 5: Distribution of cases according to working habit

S.No.	Working habit	No. of cases	Percentage
1.	Outdoor	73	73%
2.	Indoor	27	27%
	Total	100	100%

In this study, the outdoor working patients were more prone to pterygium.

Table 6: Distribution of cases according to duration of exposure to ultraviolet rays

S.No.	Duration of exposure to UV rays in hours	No. of cases	Percentage
1.	2-4	24	24%
2.	5-8	7	7%
3.	> 8	69	69%
	Total	100	100%

The incidence of pterygium was found more in patients who were exposed to UV radiation for prolonged duration i.e. > 8 hrs (69%).

Table 7: Distribution of cases according to site of pterygium

S.No.	Site	No. of cases	Percentage
1.	Nasal	87	87%
2.	Temporal	7	7%
3.	Bilateral nasal	6	6%
4.	Bilateral temporal	0	0%
	Total	100	100%

Mostly nasal site of the conjunctiva was involved (nasal pterygium).

Table 8: Limit of encroachment of cornea by pterygium

S.No.	Encroachment over cornea in mm	No. of cases	Percentage
1.	Upto 2	40	40%
2.	2.1-4	63	63%
3.	> 4.1	3	3%

Most of the pterygium encroached the cornea within 2-4 mm.

Table 9: Distribution of cases according to type of management

S.No.	Management	No. of cases	Percentage
1.	D'Ombrians	56	56
2.	D'Ombrians with conjunctival limbal autograft	14	14
3.	D'Ombrians with stem cells transplant	2	2
4.	5-FU	5	5
5.	Medical	18	18
6.	Not ready for surgery	11	11

Maximum number of cases of pterygium was operated by D'Ombrians technique

Table 10: Correlation of recurrence with type of surgery

S.No.	Type of surgery	No. of cases	Recurrence	Percentage
1.	D'Ombrians	56	13	23.21%
2.	D'Ombrians with CA	12	2	16.6%
3.	D'Ombrians with SCT	2	0	0%
	Total	70	15	

Table 11: Clinical observation with intralesional 5-FU injection

S.No.	Change in pterygium	1st wk	2 nd wk	3 rd wk	4 th wk	5 th wk
1.	Colour	Pink	Pale to Pink	Pale to Pink	Pale	White
2.	Thickness	-	-	Reduced	Reduced	Reduced

Table 12: Clinical observation with medical treatment

S.No.	Type	No. of eyes	Follow up			
			Progressed	%	Not Progressed	%
1.	Atrophic	15	0	0%	15	100%
2.	Progressive	3	2	66.66%	1	33.33%

Table 13: Treatment of recurrent pterygium

S.No.	Treatment of primary pterygium	Recurrence	Treatment		
			D'Ombrian with CA	5-FU	Not ready
1.	D'Ombrian	13	5	4	4
2.	D'Ombrian with CA	2	0	2	0
	Total	15	5	6	4

Out of 15 patients with recurrence 5 patients received treatment with D'Ombrian technique with CA in which D'Ombrian with bare sclera was done. Two patients

Most cases which were operated by D'Ombrians technique got recurrence.

Table 11: Time taken for recurrence after surgery

S.No.	Period	Recurrence	Percentage
1.	1 st Month	10	66.66%
2.	3 rd Month	5	33.33%

It was observed during our study that there was 66.66% and 33.33% recurrence in 1st month and 3rd month respectively.

In our study, we injected 0.02% 5-FU weekly in the body of pterygium and changes were noted. It was found that colour of pterygium became pale in second week and white by fifth week (Table-11).

Thickness started reducing by 3rd week.

In our study 15 patients with atrophic and 3 patients with progressive pterygium who were not ready for surgery were put on medical treatment and advised to wear dark goggles to protect from wind, UV rays, and dust. Treatment was given in the form of topical lubricating eye drops for atrophic group and topical lubricating eye drops with low dose of steroids and progressive pterygium. Patients were followed for one year and found that 66% cases in progressive pterygium progressed and none of atrophic pterygium progressed (Table-12).

received intralesional 5-FU weekly for 4 weeks and the pterygium became atrophic.

CONCLUSION

It was concluded with this study that male preponderance over female preponderance[3, 9] was present. Lower socioeconomic group[8, 10] were more prone to pterygium. Recurrence was more in D'Ombraim technique. D'Ombraim with conjunctival limbal autograft and D'Ombraim with stem cell transplant tool[12] to be effective method of in decreasing recurrence. 5-FU injection in the body of pterygium was useful as well. Medical treatment[10] has no role in progressive and recurrent pterygium. Atrophic pterygium is best treated medically and should not be operated unless it is causing profound sign and symptoms.

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