

Original article:

A comparative study of conjunctival autograft with sutures or using autologous serum after pterygium surgery

Asma farheen ,*Yellambkar S ,Tapan J , Nandedkar V.

Department of Ophthalmology, Government Medical College, Aurangabad

Corresponding author*

ABSTRACT:

Introduction: Pterygium is a triangular wing shaped proliferation of conjunctiva on cornea in interpalpebral area .The subconjunctival tissue proliferates as vascularised granulation tissue to invade and destroy superficial layers of cornea .

Methodology: We had done a prospective randomized controlled study of 50 pt who undergone pterygium excision with conjunctival autograft(CAG) using sutures and autologous blood . Pts were divided into two groups . Group A includes 25 pts of pterygium excision with CAG using sutures & Group B includes 25 pts of pterygium excision with CAG using autologous blood .

Results: The results were insignificant with p value of 0.68 .The only complication noted is recurrence which is almost same in both groups .

Conclusion: A comparative study of pterygium excision with CAG using sutures or autologous blood done at tertiary care centre on 50 eyes shows that conjunctival autograft is probable source of stem cells and CAG using autologous blood as bioadhesive is safer and cost effective .Although graft displacement is more with CAG using autologous blood but the rate of recurrence is almost similar in both groups and statistically insignificant.

INTRODUCTION:

Pterygium is a triangular wing shaped proliferation of conjunctiva on cornea in interpalpebral area .The subconjunctival tissue proliferates as vascularised granulation tissue to invade and destroy superficial layers of cornea . etiology is multifactorial with features of both degenerative process and disordered growth. The epidemiological studies have reported strong correlation between pterygium and uv radiation ,hot dry ,sandy climates. The prevalence rate varies widely 2% to 29% but higher in tropics (7). Pterygium is asymptomatic condition but sometimes may cause foreign body sensation ,redness ,watering ,itching . treatment is surgical excision , pterygium excision with conjunctival autograft technique is reported to have lower recurrence rate.

METHODS:

We had done a prospective randomized controlled study of 50 pt who undergone pterygium excision with conjunctival autograft(CAG) using sutures and autologous blood .

Pts were divided into two groups .

Group A includes 25 pts of pterygium excision with CAG using sutures .

Group B includes 25 pts of pterygium excision with CAG using autologous blood .

INCLUSION CRITERIA;

All pts with primary pterygium

Informed consent was taken from all pts.

EXCLUSION CRITERIA;

Recurrent pterygium

Ocular surface disorders

A complete ophthalmic examination including visual acuity ,slitlamp examination ,keratometry ,intraocular pressure measurement ,ocular movements and grading of pterygium done .

Group A includes 25 pts of pterygium excision with CAG using sutures .

Group B includes 25 pts of pterygium excision with CAG using autologous blood .

Graft adherence and position was noted at the end of surgery .

Every pt was followed on first post op day ,after one week ,after one month ,three month, six month and one year .

RESULTS:

TABLE 1 : Age distribution

Age group in years	No of pts
20-30	2
31-40	37
41-50	6
51-60	5

Maximum numbers of pts were in age group 31 – 40 years.

TABLE 2 : Symptoms on first post op day

symptoms	Pain/watering present	Pain/watering absent	Total no of pt	P value
Group A	9	16	25	.04
Group B	3	22	25	
Total	12	38	50	

TABLE 3 : Recurrence rate

complication	Recurrence present	Recurrence absent	Total No of pt	P value
Group A	3	22	25	0.68
Group B	4	21	25	
	7	43	50	

In group A out of 25 pts 3 had recurrence.

In group B out of 25 pts 4 had recurrence.

The results were insignificant with p value of 0.68 .The only complication noted is recurrence which is almost same in both groups .

DISCUSSION:

Pterygium is elastotic degeneration of conjunctiva (8). It has three parts ,cap, head ,body or tail . The stockers line of iron deposition may be found on edge of cap .The fleshy ,mobile vascular bulbar conjunctiva is known as body or tail . Pterygium pts are usually asymptomatic but may present with redness ,watering ,foriegn body sensation ,decrease in vision due to astigmatism or involvement of pupillary area .

Pterygium maybe primary or recurrent following regrowth after excision . Pterygium has two stages ,in progressive stage it is thick and vascular and continue to grow on cornea . in atrophic stage it is thin and pale and ceases to grow . Etiology of pterygium is multifactorial .

In 2001 Di Girolamo suggest possibility of limbal stem cell damage by UV light and activation of matrix metalloproteinase which lead to deveplopnent of pterygium (9).

The abnormal P53 gene expression in the epithelium of pterygium increase the possibility of uncontrolled cell proliferation (10). The only treatment of pterygium is surgical excision .recurrence is the only major complication of surgery which usually occurs within one year .other complications include corneal opacity ,keratectesia etc .

Various methods of surgical excision of pterygium includes bare sclera technique ,excision with CAG ,excision with amniotic membrane grafting (AMG),excision with use of antimetabolites or beta radiation . The technique of excision with CAG described by Kenyon etal have minimum recurrence and complication (1). In 1943 Bangester use movable conjunctival flap to prevent pterygium recurrence (2). Kenyon in 1985 used superotemporal bulbar conjunctival autograft from same eye in 57 eyes and found excellent results with very low recurrence rate 5.3%(1).

conjunctival autograft can be placed with glue ,sutures or using autologous blood . The fibrin present in blood is a biological tissue adhesive glue . it contains coagulation factors and act as local haemostatic . First use of fibrin as a glue was done in 1909. It can be prepared from homologous or autologous source.

The use of autologous fibrin is cost effective and results in less post operative discomfort and inflammation ,less risk of hypersensitivity reaction and wound infection . Karalezli A etal compared CAG using fibrin glue and using sutures in 50 eyes ,they showed that CAG using fibrin glue had less operative time and less recurrence as compared to using sutures (3). The shrinivasan etal compared 40 eyes with conjunctival autografting using sutures and autologous blood or serum ,they showed CAG using autologous blood is effective and safe with fewer complications (4).

De Wit D etal in2010 done study on 15 eyes with CAG using autologous blood and showed good results (5).

in 2013 a study done by Singh Punit K etal showed rate of recurrence is same in CAG using sutures or autologous blood but graft displacement is more with CAG using autologous blood but the difference is not statistically significant (6).

CONCLUSION:

A comparative study of pterygium excision with CAG using sutures or autologous blood done at tertiary care centre on 50 eyes shows that conjunctival autograft is probable source of stem cells and CAG using autologous blood as bioadhesive is safer and cost effective .Although graft displcement is more with CAG using autologous blood but the rate of recurrence is almost similar in both groups and statistically insignificant.

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