ORIGINAL ARTICLE

PTERYGIUM EXCISION IN COMPARISON OF BARE SCLERA TECHNIQUE AND CONJUCTIVAL AUTOGRAFT

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ABSTRACT: INTRODUCTION: Pterygium is a degenerative condition of the subconjuctival tissue which proliferates as vascularized granulation tissue to invade the cornea, destroying the superficial layers of the stroma and bowmans membrane. Surgical removal remains the main stay of treatment. **OBJECTIVE:** To compare the recurrence rate of bare sclera technique and conjuctival autografting in primary pterygium excision. **METHODOLOGY:** This study was carried out as a prospective comparative study. This study was conducted during June 2013 to June 2014. 50 patients of primary pterygium were admitted. 25 patients were treated with bare sclera technique and 25 patients were treated with conjunctival auto graft. Post-operative follow up was done for 6 months to find out the recurrence of pterygium and any other complications. **RESULT:** 25 patients received Bare Sclera Technique (n=25) and 25 patients received Conjunctival Auto Graft (CAG) (n=25). There was recurrence in 16 cases (40%) in group A with bare sclera technique and 2 cases (8%) had recurrence in GROUP B with conjunctival autograft. There was statistically significant difference in the recurrence rate in the 2 groups. Of other post-operative complications in bare sclera technique 5 cases (20%) had corneal opacity, 3 cases (12%) had scleral thinning, 5 cases (20%) had pyogenic granuloma. There was no significant post-operative complication with conjuctival auto graft. **CONCLUSION:** simple excision of pterygium followed by conjuctival autograft has the lowest recurrence rate and minimum incidence of complications compared to bare sclera technique.
KEYWORDS: Bare sclera technique versus conjuctival autograft, pterygium.

INTRODUCTION: The word pterygium is derived from greek word pterygos meaning "wing".[1,2] pterygium is a degenerative condition of the subconjunctival tissue which proliferates as vascularised granulation tissue to invade the cornea, destroying the superficial layers of the stroma and bowman's membrane, the whole being covered by conjunctival epithelium. It appears as a triangular encroachment of the conjunctiva upon the cornea. Prevalence of pterygium is high in the tropical belt of the world, especially in India where hot, sunny and dusty weather favors its growth.[2,3] Ultraviolet light rays is the most important environmental risk factor.[4,5] A small pterygium usually does not give rise to any symptoms and can be left alone. But when the pterygium is large, it can cause decreased visual acuity by encroaching pupil or producing irregular astigmatism, tear film break-up, and/or restricted ocular movements, irritation of eye and discomfort, inability to wear contact lenses, difficulty in performing refractive surgery and cosmetic concern.[6] Surgical removal remains the mainstay of treatment, basic procedure being complete excision leaving a bare area of sclera.[7] Conjunctival autografting has been a method to reduce recurrence following pterygium excision and gives a satisfactory post-operative cosmesis.

AIM & OBJECTIVES:

1. To compare the recurrence rate of pterygium after surgery with "Bare sclera technique" and "Free Conjunctival graft" in a follow up period of 6months.
2. To study the clinical aspects of pterygium patients.
3. To study other complications of both these techniques.

MATERIALS AND METHODS: The present study is a prospective comparative study is undertaken on patients attending OPD and IPD in our hospital between June 2013 to June 2014 for data collection and another six months for the follow of last cases.

Total number (n= 50) of cases are divided into group A and group B Group A (n=25) -patient are subjected to Bare sclera technique. Group B (n=25) -patient are subjected to Conjunctival Auto graft. We have included patients with Progressive pterygium, Pterygium encroaching cornea by more than 2mm, and patients willing for surgical excision. We have excluded patients with recurrent pterygium, Pseudo pterygium, Dry eye syndrome, Atrophic pterygium and patients not willing for surgery.

Patients were preoperatively evaluated with History, Refraction, Slit Lamp Examination, Anterior segment photography (for selected cases).

All the patients in both the groups were assessed for recurrence and post-operative complications. These were assessed for recurrence during follow up by slitlamp examination at intervals of four weeks, six weeks, twelve weeks, four months and six months. Recurrence was diagnosed when a fibrovascular growth occurred in the area of the previously excised pterygium crossing the limbus and extending on to the cornea for at least a distance of 0.5mm.

In group A (Bare sclera technique) the conjunctiva was progressively dissected from the body of the pterygium towards the caruncle using Westcott's scissors. The corneal epithelium 2mm ahead of the head of pterygium was scraped off with a hockey stick knife. The pterygium head is easily avulsed using a combination of blunt dissection and traction. Residual fibrous tissue on the cornea is removed by sharp dissection with No.15 Bard-Parker blade. The body of the pterygium with the involved Tenon's Capsule and cicatrix was then excised taking care not to damage the underlying medial rectus muscle.

In group B (conjuctival auto graft) the first step was the Bare Sclera method of Excision. The graft was excised starting at the forniceal end. After excision, the Conjunctival Limbal Autograft was slid onto the cornea. Without lifting the tissue of the cornea, it was rotated and moved onto its bed with fine non-toothed forceps.

The eye was again abducted and the position of the graft was secured using 10-0 nylon, interrupted sutures. The four corners of the graft were anchored with episcleral bites to maintain position. The medial edge of the graft was sutured with 2-4 additional sutures, preferably including episclera. No sutures were placed on the limbal side of the graft. Statistical analysis was done using sps 12.0 and systat 13 Statistical software.

RESULTS: In our study most patients were females (64%).

Age distribution:

Age (Yr.)	Group A	Group B	Total	Percentage
21-30	2	2	4	8%
31-40	1	9	10	20%
41-50	10	10	20	40%
51-60	6	3	9	18%
61-70	6	1	7	14%

Table 1

Out of 50 cases, 4 cases (8%) belonged to patients in the age group 21-30 years, 10 cases (20%) belonged to the age group 31-40 years, 20 (40%) belonged to the age group 41-50 years, 10 cases (20%) belonged to 51-60 years age group, 6 cases (12%) belonged to 61-70 year.

Recurrence /Groups	Present	Absent	Percentage of Recurrence
Group A	10	15	40%
Group B	2	23	8%

Table 2

Recurrence rate in group A was 40%, where as in Group B was 8% with p value = 0.008, which is statically very significant.

SL. NO	COMPLICATIONS	BST	CAG
1	Corneal opacity	5	-
2	Scleral thinning	3	-
3	Infection	-	-
4	Haemorrhage under graft	-	-
5	Conjunctival cyst	-	-
6	Pyogenic granuloma	5	-
7	Sclero Corneal dellen	-	-
8	Symblepharon	-	-

Table 3

Next to Recurrence, Corneal opacity was the most common complication, more common in group-A compared to group –B.

CASE 1 : Bare sclera technique.

Fig. 1: Pre-Operative Progressive Nasal Pterygium of Right Eye

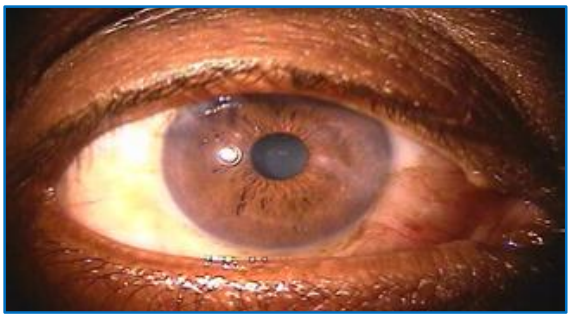

Fig. 1: Post-Operative Bare Sclera Excision of Right Eye

CASE 2: Conjuctival auto graft.

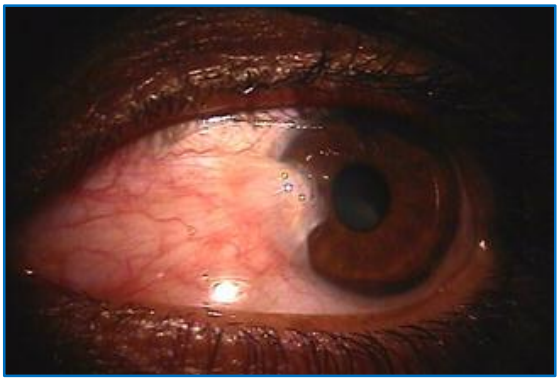

Fig. 2: Pre-Operative Progressive Nasal Pterygium Left Eye

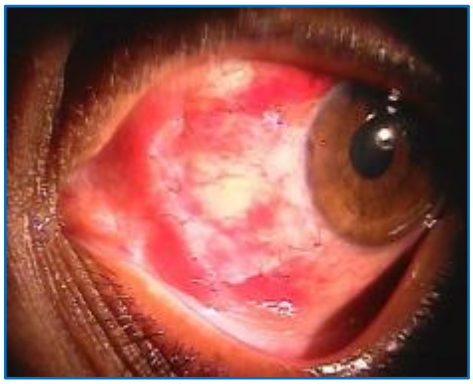

Fig. 2: Post-Operative Conjunctival Autograft of Left Eye

Post-Operative Complications of Bare Sclera Technique:

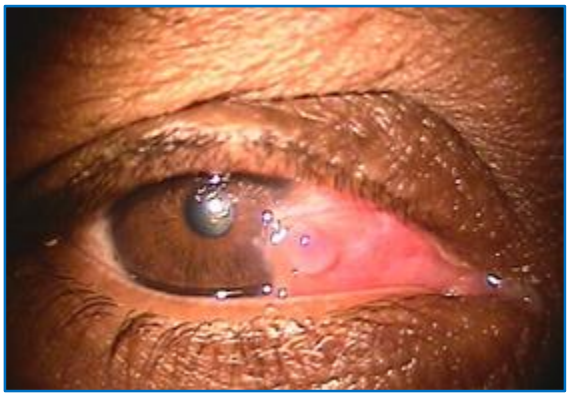

Fig. 3: Picture Showing Pyogenic Granuloma with Recurrence after Bare Sclera Excision

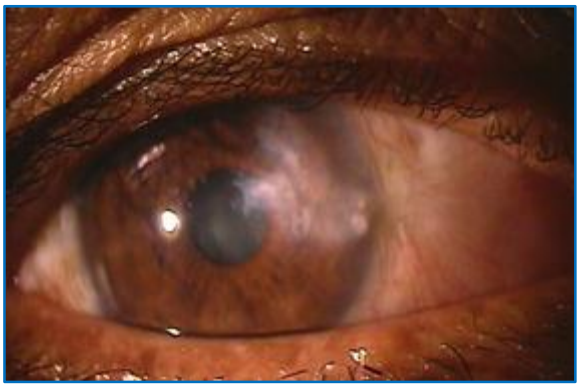

Fig. 4: Picture Showing Corneal Opacity after Bare Sclera Excision

DISCUSSION: Pterygium is a common external ocular disease seen in tropical countries like India. The only effective treatment for pterygium is surgery. In this study, recurrence rate and complications after pterygium excision with bare sclera technique and conjunctival auto graft was compared. Study group n=50, they were randomly assigned to Group A (n=25) and Group B (n=25) depending upon the surgical technique. Group –A was Bare Sclera technique and Group B was pterygium excision with conjunctival auto graft.

In this study 21-70 years age patients (n=50) were taken and divided into 5 groups. The highest number of patients were noticed in the Age group 41-50 yrs (n=20) 40%. The lowest number of cases were in the age group 21-30 yrs (n=4) 8%. Similar results have been found in this study done by seid & bejiga et al , study which is showing highest prevalence 61.76 % of cases noticed in age group 41-50 years.[9] In this study highest prevalence of pterygium was noticed in females 64% (n=32) compare to males 36% (n=18). It is correlating with khaled A Zaky, Yasser M Khalifa et al, study noticed highest prevalence (52%) of pterygium in females.[10] In this study history of outdoor exposure was present in 74% of the patients and indoor exposure was present in 26% of the patients.

In this study 48% (n=24) cases had recurrence, 40% (n=20) were bare sclera technique and 8% (n=2) with conjunctival autograft with pvalue=0.008, which is statistically highly significant. Similar results have been found in the two studies mentioned below:

1) Nazullah Khan, Mushtaq Ahmad et al; concluded that recurrence rate with bare sclera technique was (36.6%) and with conjunctival autograft was (8.8%) which is correlating with our study.[11]
2) Ahmet Özer, Nilgün Yıldırım et al; concluded that recurrence rate with bare sclera technique was (37.78%) and with conjunctival autograft was (13.73%) which is correlating with our study.

Complications like corneal opacity in 5 cases (10%), sclera thinning in 3 cases (6%) and pyogenic granuloma in 5 cases.[12] (10%) were noticed in Group A patients of our study.

CONCLUSION:

1) Highest prevalence of pterygium was noticed in age group of 41-50 years with lowest prevalence in 21-30 years.
2) Pterygium was more commonly noticed in females (64%) compared to males (36%).
3) Outdoor exposure as a risk factor was seen in 74% of cases.
4) All eyes were with pterygium on nasal side.
5) With follow up of patients 6month after surgery recurrence was more noticed in BST (40%) compared to CAG (8%).
6) Other than recurrence, corneal opacity was is the next most common complication after bare sclera technique.

Hence, we concluded from present study, pterygium excision with conjunctival autograft is a safer & effective technique to decrease recurrence rate and other complication compared to bare sclera technique.

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