



PTERYGIUM;

COMPARISON OF RESULTS EXCISION THROUGH BARE SCLERA TECHNIQUE WITH AND WITHOUT INTRAOPERATIVE MITOMYCIN C APPLICATION

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ABSTRACT... Objective: To study the results of primary pterygium excision through bare sclera technique with and without intraoperative Mitomycin C use. **Study design:** This was an experimental study with randomised controlled trial. **Setting and Duration:** This study was conducted at Eye A unit, Khyber Teaching Hospital, Peshawar from May,2007 to April,2009. **Methodology:** One hundred patients with primary pterygium were selected from ophthalmology Deptt. OPD at Khyber Teaching Hospital, Peshawar. Detailed history was taken. Complete ocular examination done and those fulfilling inclusion criteria were included in the study. Anesthesia used was topical proparacaine 0.5% and local infiltration of 2% lignocaine. Mitomycine C (MMC) 0.02% (0.2mg/ml) was applied through a cotton swab at the bare part of the sclera for five minutes in 50 of these patients. Patients were followed up till three months. **Results:** In bare sclera technique without MMC, recurrence rate was 70% (35 patients) while in MMC group, it was 16% (08 patients). There was one punctuate epithelial keratitis in MMC group and two cases of conjunctival granuloma one in each group. **Conclusions:** Pterygium excision through simple bare sclera technique had significantly high recurrence rate as compared to intraoperative use of MMC.

Key words: Pterygium, Mitomycine C (MMC)

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INTRODUCTION

Pterygium is a common disorder in many parts of the world with reported prevalence rates ranging from 0.3% to 29%^{1,2}.

It is a degenerative condition characterized by a wing shaped fibrovascular tissue developing from conjunctiva and encroaching on the cornea³.

Pterygium is found more frequently in individuals exposed to ultraviolet radiation (UVR) particularly UVR-A and UVR-B (290-400nm)^{4,5}.

Environments that are hot, dry, windy and dusty are considered more favourable for pterygium formation^{6,7}. It can occur on either side of the cornea but the nasal limbus is involved much more

commonly⁸. Pterygium, occurring in males twice as frequently as in females, is uncommon before the age of 20 years. The highest incidence has been reported in the age range of 20-40 years⁹. Pterygium affects visual acuity by either involving visual axis or inducing astigmatism¹⁰. It may also be a source of congestion and cosmetic problems¹¹. Surgical treatment remains the treatment of choice once the pterygium is found to be progressive in nature. A number of techniques have been developed for pterygium excision including bare sclera resection. However, pterygium recurrence rate after bare sclera technique is very high ranging from 30-80%^{12,13,14}. To reduce this high rate of recurrence, intraoperative application of MMC was carried out which brought about significant results^{15,16,17}. The

reported recurrence rate associated with MMC use range from 3-37.9%.The current regime of MMC is 0.02% applied to the bare sclera for 05 minutes^{13,15,20}.

MATERIALS AND METHODS

Hundred cases of primary pterygium were selected from eye OPD of Khyber teaching hospital. Patients were divided in two groups using randomized allocation.

Group A: Included fifty patients who were operated through bare sclera technique.

Group B: Included fifty patients who were treated with 0.02% MMC at bare sclera after pterygium excision.

Detailed history of these patients was taken. They were inquired especially about their occupation, duration of exposure, onset of pterygium, ocular symptoms, glaucoma, diabetes mellitus and hypertension.

Complete ocular examination including visual acuity, extraocular movements, slit lamp examination of ocular surface, dilated funduscopy and intraocular pressure measurement was done.

Inclusion Criteria

- Age between 21-60 years
- Both sexes
- Primary pterygium encroaching 2mm or more over the cornea
- Pterygium causing decreased vision
- Pterygium with repeated episodes of congestion and Grittiness

Exclusion Criteria

- Diabetes Mellitus
- Collagen Vascular Disease
- Ocular surface disease like dry eye syndrome

Those fulfilling inclusion criteria were operated under microscope using topical proparacaine hydrochloride 0.5% and subconjunctival injection of 2% lignocaine hydrochloride in the bed of

pterygium.

Pterygium was peeled off the cornea and excised. In group A, nothing was applied while in group B, 0.02% MMC was applied for five minutes at the bare sclera after pterygium was excised. Ocular surface was irrigated with 100ml of ringer lactate after MMC application. Antibiotic and steroid combination 4 times daily for one month was given postoperatively.

Patients were followed at postop. day 1,14,30,60 and 90.Recurrence was defined as fibrovascular growth encroaching over the cornea 1mm or more. Data were analyzed on SPSS version 10.0.

RESULTS

Hundred patients were operated. Eighty patients (80%) were males and twenty patients (20%) were females. Thus male to female ratio was 4:1.Age range was 21-60 years with a mean value of 45 years. (Figure)

Recurrence was noted in 35 patients (70%) in group A, while in group B, recurrence was observed in eight patients (16%).One case of punctate epithelial keratitis was observed in group B. Two cases of conjunctival granuloma were noted, one in each group. (Table)

We had no complications like medial rectus disinsertion, scleral necrosis or corneal melting etc in any group.

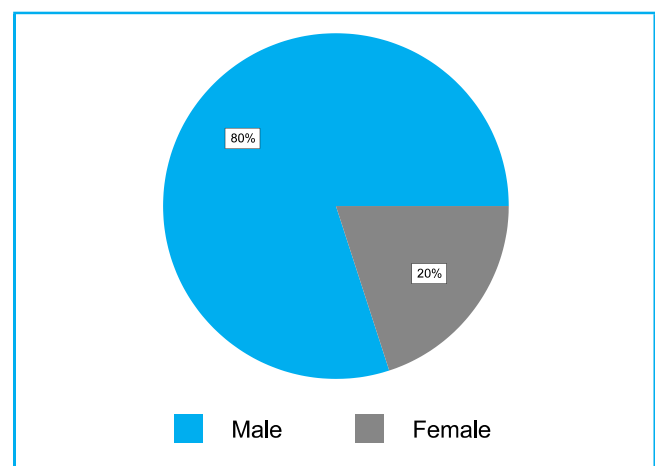


Figure. Gender distribution

	Total patients	Recurrence	%age	P-value
Group A	50	35	70%	0.0001
Group B	50	08	16%	

Table. Recurrence rate

DISCUSSION

There has been a great change in pterygium surgery over the last couple of decades. Newer surgical techniques have been developed in an attempt to reduce recurrence rate after surgery. Our study presents the results of one of these techniques i.e intraoperative MMC application.

MMC acts as an alkylating agent and causes irreversible damage to the DNA structures of the cell²¹.

Postoperative use of topical MMC is not recommended because of a possible drug misuse which may cause severe ocular complications such as scleromalacia, corneal perforation, glaucoma, iritis, and punctate keratopathy²²⁻²⁵. Single intraoperative use of MMC is safer than postoperative topical daily application^{12,24}. To avoid serious scleral and corneal complications particularly in group B, we excluded all those patients from our study who had abnormal ocular surfaces and were at greater risk for delayed epithelialisation or excessive inflammation such as patients with immune disorders, blepharitis or dry eyes.

Our study was predominated by males over females with 80%. Male to female ratio was 4:1. In the study presented by Baig, this ratio was 3:1²⁵.

Most of our patients presenting with primary pterygium were outdoor workers like drivers, conductors, labourers and farmers etc who were exposed to ultraviolet radiations. And

that is also the main reason that our study was predominated by males.

Recurrence rate in our patients in group A was 70% while in group B, it was 16%. Narsani A. K. in his study on MMC, found it to be 16.3%²⁶ which was in accordance with our study. Chen et al reported 38% of recurrence rate with MMC²⁷ while Manning et al reported it to be 10.5%¹⁵.

There was only one case of punctate epithelial keratitis which responded to eye lubricants. The conjunctival granuloma, which occurred one in each group, was treated with minor surgical procedure.

CONCLUSIONS

Bare sclera technique when combined with intraoperative MMC application significantly reduces the recurrence rate.

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