

## Original Article

# Advantage of Crescent Knife in Making Excision of Pterygium

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### Abstract :

A pterygium is a triangular sheet of fibrovascular tissue which invades the cornea. In the management of pterygium surgical excision is needed. Common practices in pterygium surgery are simple excision, excision with post operative  $\beta$ - radiation or topical thio-TEPA solution(1:2000) or mitomycin-C solution(0.4%), excision with peroperative use of mitomycin-C or conjunctival autograft or amniotic membrane graft or lamellar keratoplasty of the affected part of the cornea. Recurrence is high in pterygium surgery probably due to facing difficulty for easy and complete separation of fibrovascular growth. So this is a search for new technique where easy smooth and complete separation pterygial tissue can be done with minimum surgical trauma and a good cosmetic look. This study was carried out at Faridpur Medical College Hospital (FMCH) from January 2010 to December 2011. A total 50 cases were selected for study. Technique of operation in all the cases were excision of pterygium with conjunctival autograft. In 50% cases, the head of the pterygium removed from the cornea with crescent knife and in 50% cases the head of the pterygium removed with tooks knife. The follow up period was 12 to 24 months. In the group- A, recurrence occurred in two eyes i.e 8% and succeed in 23 eyes i.e 92%. In the group-B, recurrence occurred in 6 eyes i.e 24% and succeed in 19 eyes i.e. 76%. So, higher success rate and low recurrence rate with good cosmetic look and minimum surgical trauma for those where crescent knife were used.

**Key words:** Pterygium, fibrovascular tissue, surgical excision, crescent knife, tooks knife.

### Introduction :

A pterygium is a triangular sheet of fibrovascular tissue which invades the cornea. It is one of the extraocular disease. Factors like ultraviolet radiation or microtraumas such as heat, dry atmosphere, sands and dust are inducing agents for growth of pterygium<sup>1</sup>. It is not uncommon in tropical countries like Bangladesh. So, pterygium is important as it causes potential visual deterioration either by refractive error or by approaching the central part of the cornea. In the management of pterygium surgical excision is needed

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because it is fibrovascular growth. Common practices in pterygium surgery are simple excision, excision with post operative  $\beta$  radiation or topical thio-TEPA solution (1:2000) or mitomycin-c solution (0.04%), excision with peroperative use of mitomycin-c or conjunctival autograft or lamellar keratoplasty<sup>2</sup> or amniotic membrane graft<sup>3</sup>. The principal aim of pterygium surgery is to prevent recurrence, lacks in complication and a beautiful cosmetic look. Common technique is the excision of pterygium started from the apex. Sometime recurrence is high probably due to facing difficulty for easy and complete separation of fibrovascular growth. So this is a search for new technique where easy smooth and complete separation of pterygial tissue can be done with a minimum surgical trauma and a good cosmetic look.

### Materials and methods:

This study was conducted at Faridpur Medical College & Hospital (FMCH) in the department of ophthalmology from January 2010 to December 2011.

A total fifty cases were selected for study. All the patients in the study group were primary pterygium. The ages of the patients were 20 to 60 years. Operation was done under microscope. Written informed consent was obtained from each patient. All the eyes were topically (0.4% oxybuprocaine) & locally anaesthetized using 2% lignocaine with adrenaline 1:20000. Technique of operation in all cases were excision of pterygium with conjunctival autograft. Dissection started from apex to base. In 50% cases the head of the pterygium removed from the cornea with a crescent knife and the body of the pterygium was dissected underneath the epithelium of the conjunctiva by micro scissors. In 50% cases the pterygium head was saperated by tooks knife and a razor fragment. But with crescent knife pterygium head was separated/peeling out from cornea with a smooth and clean corneal surface. The tenons capsule and subconjunctival tissue were removed from the sclera. Patients of both groups were followed up for 12 to 24 month to see recurrence. Data were analyzed by using  $\chi^2$  test and p value <0.05 was taken as significant.

### Results:

In the group-A, recurrence occurred in two eyes i.e. 8% and succeed in 23 eyes i.e. 92%. In group-B, recurrence occurred in 6 eyes i.e. 24% and succeed in 19 eyes i.e. 76%. This result is statistically significant (p<0.05) (Table-1).

**Table-I:** Comparison of success and recurrence rate in two methods

Group	Success No (%)	Recurrence No (%)	P value*
A (Crescent Knife)	23 (92)	2 (8)	<0.05
B (Tooks Knife)	19 (76)	6 (24)	

\*By using  $\chi^2$  test with a df=1.

Regarding complication, in group-A there were smooth, clean and even corneal surface with good cosmetic look. In group-B there were rough, uneven corneal surface with less beautiful cosmetic look. In addition; in group-A there were minimum surgical trauma but in group-B there were more surgical trauma.

### Discussion:

As the pterygium is a fibrovascular growth so every case needs surgery. The conventional use of tooks knife and razor fragments produce some risk of corneal injury and scleral thinning, so uveal tissue may prolapse and there is uneven peeling of pterygial tissue.

But with crescent knife it is very much useful to separate the pterygial tissue with a smooth, even and clear surface.

It has been established that recurrence is the most common complication of pterygium surgery. So, main aim of pterygium surgery is to prevent its recurrence. In our study recurrence occurred in 4 eyes i.e 8% out of 50 where crescent knife were used but recurrence occurred in 12 eyes i.e 24% out of 50 where tooks were used. In a previous study<sup>4</sup> of 25 cases conducted in BSMMU in the department of ophthalmology from January 2004 to June 2004 shown the recurrence rate were 12% with crescent knife and 28% with tooks knife which are compatible with our study.

### Conclusion:

As the proposed instruments offers more safety, meticulous, smooth and clean even surface, higher success rate, low recurrence rate, less chance of injury to cornea or sclera and easily available. So, it is advised that we should change our conventional use of tooks knife and razor fragments to the crescent knife.

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