

**Comparative Study On The Outcome Of Primary
Pterygium Surgery using Bevacizumab versus Mitomycin**

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Thesis submitted for partial fulfillment of the M.D degree in ophthalmology

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Abstract

Introduction: There is evidence to suggest that the use of an adjuvant in surgery for primary and recurrent pterygium is warranted to achieve a lower recurrence rate. Although bare sclera excision may have advantages as far as having the fewest resource requirements, evidence presented here indicates that it is an inferior procedure and is associated with the highest recurrence rate.

It was shown that adjunctive therapy such as beta irradiation ,mitomycin C, 5-fluorouracil, and thiotepa were associated with varying degrees of success rate in reduction of recurrence.

Angiogenesis plays a key role in the pathogenesis of the primary pterygium and in the formation of the fibrovascular tissue when recurrence occurs. Bevacizumab has been suggested as a possible adjunctive therapy for pterygium excision.

Aim of the study: This study will Compare Subconjunctival Bevacizumab injection and Intraoperative Mitomycin C application On the Outcome of primary Pterygium Surgery .

Methods: Prospective , Randomized, Comparative Clinical Study was conducted on sixty eyes of sixty patients complaining of primary pterygium of variable duration that were recruited from outpatient clinic of Ophthalmology Department of Fayoum University Hospital .They were classified randomly into Two groups:

- **Group (A)** which received subconjunctival injection of bevacizumab 1.25 mg (0.05 mL) 2 weeks prior to surgery then was managed by pterygium excision with bare sclera technique .
- **Group (B)** which was managed by pterygium excision with bare sclera technique and Intraoperative application of Mitomycin C 0.02% for a duration of two minutes After medication administration, the ocular surface was copiously irrigated with balanced salt solution.

Results: During the follow up period of this study, the pterygium recurred in 15 cases (25)% out of 60 cases of the study. The recurrence in group (A) (bevacizumab group) occurred in 11 cases out of 30 (36.7)% . In group (B) (MM-C group) the recurrence occurred in 4 cases out of 30 cases of the study (13.33)% .

The incidence of complications in all cases of the study was 21.7% (13 cases out of 60 cases), the incidence of complications was low in group A (treated with excision and Subconjunctval bevacizumab) which was 10% where 3cases

showed post-operative complications out of 30 cases. But the incidence was high in group B (treated with excision and MM-C) which was (33.3%) where 10 cases out of 30 cases showed complications. The statistical difference between the 2 groups was significant P. value = 0.000.

Conclusion: We concluded that a single preoperative subconjunctival injection of bevacizumab had decreased the recurrence rate after primary pterygium excision which seems to be marginally superior to bare sclera excision alone but does not give a more desirable recurrence rate. It decreased conjunctival congestion and photophobia after subconjunctival injection so can be considered an effective temporary treatment in the management of pterygia in those who are not candidates for operation including recurrent pterygia. Without surgery, anti-VEGF alone could reduce the symptoms and vascularity, but does not cause pterygium regression with very little complications and high safety profile. On the other hand we found that intraoperative application of Mitomycin C is effective in reducing the recurrence rate of primary pterygium after surgical excision but its use is associated with considerably higher rate of postoperative complications which may be Vision-Threatening when compared to subconjunctival bevacizumab injection so it should be used judiciously.

Keys words: Bevacizumab , Mitomycin C , Primary pterygium , recurrence rate