

Pre-operative sub-conjunctival mitomycin C 24 hours before excision of recurrent pterygium

Dear Editor,

We read the article by Zaky and Khalifa^[1] with keen interest. We wish to express following comments:

Pre-operative sub-conjunctival (SC) mitomycin C (MMC) before excision of pterygium is a recently reported adjunctive therapy with very low recurrence rates.^[1-4] We appreciate the authors^[1] for this fascinating modification of SCMMC 24 hours before excision of recurrent pterygium. Despite the reduction in waiting period from 1 month to 24 hours, it still remains a two-stage operation.^[1,4]

Authors mention that in the mitomycin injection group, intra-operative eye irrigation with 200 mL of balanced salt solution was done following pterygium excision to wash out residual SCMMC.^[1] We believe that after 24 hours of SCMMC injection, MMC would be distributed in various extra- and intraocular tissues including sclera, ciliary body and aqueous humor, resulting in rapid decrease in MMC concentration from the injection site, and there may be a very remote possibility of presence of washable MMC after excision of pterygium. Ghoneim *et al.* did not irrigate the conjunctival sac after excision of pterygium 24 hours after SCMMC.^[4]

Authors^[1] mentioned in the discussion that several vision-threatening complications such as glaucoma, corneal edema, corneal perforation, scleral melting, and cataract formation have been reported from intra-operative MMC application in pterygium surgery. In fact, all these complications occurred following prolonged post-operative instillation of 0.04% MMC eye drops rather than intra-operative application.^[5] Similarly, they^[1] mentioned that Donnenfeld *et al.* reported a case series

of SCMMC injection 1 month before surgery in recurrent pterygium. However, in Donnenfeld *et al.*'s^[3] study, only 16 of the 36 eyes had recurrent pterygia, and remaining had primary pterygia. The authors^[1] failed to cite Khakshoor *et al.*'s work who reported no recurrence after pterygium excision 1 month after sub-ptyerygial MMC; however, persistent whitening of sclera and hypovascularity at the site of excision occurred in 5.5% patients.^[3]

According to authors, pterygium excision 24 hours after SCMMC injection avoids long unnecessary exposure with subsequent penetration of MMC.^[1] However, 24 hour exposure to MMC does not appear to be a short exposure time. It has been reported that 64% of the MMC was delivered to the sclera within the first minute of MMC application, and intra-operative MMC application for 5 minutes resulted in prolonged inhibition of treated fibroblasts for at least 30 days in rabbits. One study concluded that extra- and intraocular concentrations of MMC were highest after SC injection.

Discussion did not include the exact mechanism of prevention of recurrence by their modification.^[1] Histopathology of excised pterygia 24 hours after injection could have demonstrated the effect of MMC on fibrovascular tissues in pterygial stroma. Donnenfeld *et al.* performed excision of pterygia 1 month after MMC injection when pterygia became less vascular and less inflamed.^[2] The histopathological and transmission electron microscopy of excised specimens of pterygia have demonstrated the inhibitory effect of MMC on fibrovascular activity in the pterygial stroma and verified the efficacy of SCMMC injection 1 month before excision of pterygia in decreasing the risk of pterygium recurrence.^[2,6]

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References

1. Zaky KS, Khalifa YM. Efficacy of preoperative injection versus intraoperative application of mitomycin in recurrent pterygium surgery. *Indian J Ophthalmol* 2012;60:273-6.
2. Donnenfeld ED, Perry HD, Fromer S, Doshi S, Solomon R, Biser S. Subconjunctival mitomycin C as adjunctive therapy before pterygium excision. *Ophthalmology* 2003;110:1012-6.
3. Khakshoor H, Razavi ME, Daneshvar R, Shakeri MT, Ghate MF, Ghooshkhanehi H. Preoperative subpterygeal injection vs intraoperative mitomycin C for pterygium removal: comparison of results and complications. *Am J Ophthalmol* 2010;150:193-8.
4. Ghoneim EM, Abd-El Ghny AA, Gab-Allah AA, Kamal MZ. Preoperative subconjunctival injection of mitomycin C versus intraoperative topical application as an adjunctive treatment for surgical removal of primary pterygium. *Middle East Afr J Ophthalmol* 2011;18:37-41.
5. Rubinfeld RS, Pfister RR, Stein RM, Foster CS, Martin NF, Stoleru S, *et al.* Serious complications of topical mitomycin-C after pterygium surgery. *Ophthalmology* 1992;99:1647-54.
6. Chang YS, Chen WC, Tseng SH, Sze CI, Wu CL. Subconjunctival

mitomycin C before pterygium excision: An ultrastructural study.
Cornea 2008;27:471-5.

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