



## ***Letter to the Editor***

### **Management of corneal vascularization**

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Dear editor,

I read the article titled "Fine needle diathermy – A choice for managing corneal vascularization" and written by Thatte S (2011) with great interest as corneal vascularization is a very common problem encountered by us also in Nepal. Most of the cases that we see are healed corneal ulcers with vascularization, in which doing an optical keratoplasty is a big challenge. The author has done a very commendable job by introducing a technique which can be very helpful to us in our daily practice.

In addition to the methods highlighted by the author, I would like to highlight a few more techniques and methods which are helpful in reducing corneal vascularization. Corneal neovascularization (NV) is a severe complication associated with inflammatory or infectious disorders of the cornea and long-time contact lens wear. This major ocular complication can lead to corneal scarring, edema, lipidic deposition and inflammation that may not only compromise visual acuity but also decrease the success rate of subsequent penetrating keratoplasty. In the clinical setting, topical corticosteroids and non-steroidal anti-inflammatory drugs (NSAIDs) remain the principal primary treatment for suppressing proliferating corneal vessels. However, in corneas in which vessels have been established for extended periods, corticosteroid and NSAID treatments are ineffective (Sugisaki et al 2008).

Vascular endothelial growth factor (VEGF) - a potent angiogenic factor, has been reported to play a major role in the pathogenesis of corneal NV (Chen et al 2009). Recently, bevacizumab - a humanized monoclonal antibody against VEGF, has been reported to have significant and beneficial effects against corneal NV; both topical and sub-conjunctival application are reported to be effective (Chu et al 2011).

There are also reports of the isoflavonoid Genistein and two structurally related flavonoids to be potent inhibitors of corneal angiogenesis *in vivo*. The wide distribution of the flavonoids in the plant kingdom together with the presented results suggests that flavonoids may contribute to the preventive effect of a plant-based diet on neovascular disease of the eye (Joussen et al 2000). Recently, photodynamic therapy (PDT) has been introduced as a novel treatment for corneal neovascularization using photosensitizers (Sugisaki et al 2008).

The rational use of an appropriate method may help reduce the stubborn prevalence of corneal blindness.

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## References

- Chen, Wei-Li , Chen, Yan-Ming, Chu, Hsiao-Sang et al (2009) Bevacizumab for the Treatment of Corneal Neovascularization. *Cornea*; 28 (11): S26-S30.
- Chu HS, Hu FR, Yang CM, Tetal YP (2011). Sub-conjunctival injection of bevacizumab in the treatment of corneal neovascularization associated with lipid deposition. *Cornea*; 30(1):60-6.
- Joussen AM, Rohrschneider K, Reichling J et al (2000). Treatment of Corneal Neovascularization with Dietary Isoflavonoids and Flavonoids .*Experimental eye research*; 171(5) :483-487.
- Sugisaki K et al (2008). Photodynamic therapy for corneal neovascularization using polymeric micelles encapsulating dendrimer porphyrins. *Invest Ophthalmol Vis Sci*; 49(3): 894- 899.

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