

Sir,
Corneal endotheliopathy secondary to adherent triamcinolone acetonide endothelial plaque following triamcinolone acetonide-assisted posterior vitrectomy for myopic foveoschisis

Triamcinolone acetonide (TA)-assisted posterior vitrectomy (PV) enables better visualization during vitrectomy¹ and peeling of internal limiting membrane (ILM).¹ Complications of TA include infectious endophthalmitis, sterile endophthalmitis, and glaucoma.^{2,3} However it has not been described with corneal endotheliopathy. We report the complication of corneal endotheliopathy secondary to adherent endothelial TA plaque following TA-assisted PV for myopic foveoschisis (MF).

Case report

A 60-year-old lady with high myopia of 14 D experienced decreased left visual acuity (VA) to 6/24, secondary to lamellar hole from MF. Anterior segment examination was normal. PV was performed to relieve vitreomacular traction and peel ILM with postoperative intraocular perfluoropropane gas tamponade. However, there was no VA improvement 2 months later because of development of full-thickness macular hole (FTMH). Repeated PV was performed using unfiltered TA (Kenolog 40 mg/ml), which was then mostly removed, with postoperative gas tamponade. Patient postured face down with normal first day review and intraocular pressure. On the 7th day, VA deteriorated to light perception because of the central corneal endothelial TA plaque and corneal oedema (Figure 1). There were occasional anterior chamber (AC) cells, pseudohypopyon without any vitritis, or conjunctival chemosis. Lateral posturing to displace the plaque failed and the corneal oedema persisted with pachymetry showing left central corneal thickness (CCT) of 781 μm compared with the right CCT of 554 μm . AC washout to displace the TA with balanced salt solution and viscoelastics was performed on the 10th day. Three weeks later, the cornea became clear with corresponding improvement in VA to counting finger and decrease in CCT to 580 μm and FTMH closure.

Comment

Corneal endotheliopathy secondary to adherent endothelial TA plaque can occur following TA-assisted PV, which can resolve after AC washout. The TA migrated to the AC through zonules, which were weakened by high myopia, PV, and intraocular gas; and gravitated towards the central cornea after posturing. The TA likely caused corneal endothelial toxicity with resultant oedema. *Ex vivo* experiment showed that direct exposure to TA with vehicle for 3 min caused cytotoxicity and microvilli changes to rabbit corneal endothelial cells.^{4,5} We suggest the use of filtered, diluted TA for PV in eyes with zonular weakness and urgent removal of central corneal endothelial TA plaque to enable resolution of corneal oedema.

References

- 1 Kumagai K. Introduction of a new method for the preparation of triamcinolone acetonide solution as an aid to visualization of the vitreous and the posterior hyaloid during pars plana vitrectomy. *Retina* 2003; **23**: 881–882.
- 2 Jonas JB, Spandau UH, Schlichtenbrede F. Short-term complications of intravitreal injections of triamcinolone and bevacizumab. *Eye* 2008; **22**: 590–591.
- 3 Moshfeghi DM, Kaiser PK, Bakri SJ, Kaiser RS, Maturi RK, Sears JE *et al*. Presumed sterile endophthalmitis following intravitreal triamcinolone acetonide injection. *Ophthalmic Surg Lasers Imaging* 2005; **36**: 24–29.
- 4 Chang YS, Tseng SY, Tseng SH, Wu CL, Chen MF. Triamcinolone acetonide suspension toxicity to corneal endothelial cells. *J Cataract Refract Surg* 2006; **32**: 1549–1555.
- 5 Oh JY, Wee WR, Lee JH, Kim MK. Short-term effect of intracameral triamcinolone acetonide on corneal endothelium using the rabbit model. *Eye* 2007; **21**: 812–818.

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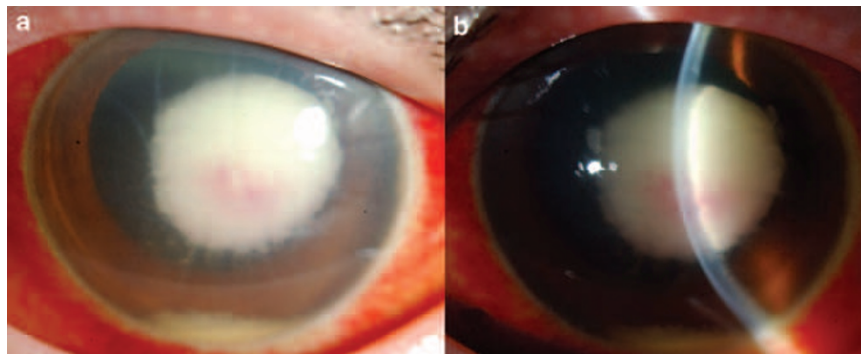


Figure 1 Anterior segment photograph of left eye. (a) Broad beam illumination showing the presence of adherent triamcinolone acetonide (TA) crystal plaque on the corneal endothelium with the presence of central cornea oedema, Descemet's folds extending beyond the TA plaque, and pseudohypopyon. There was also sclerotomy-related subconjunctival haemorrhage. (b) Slit beam illumination showing the central corneal oedema and adherent TA plaque.