

Sir,
The inadvertent administration of intralenticular triamcinolone

Intravitreal triamcinolone (IVT) is increasingly frequently used for a variety of retinal disorders, such as refractory diabetic oedema, cystoid macular oedema following vein occlusions, and in the treatment of occult sub-retinal neovascular membranes. We report a case of inadvertent injection of triamcinolone into the crystalline lens and the observation of the lens for the subsequent year.

Case report

An 82-year old phakic, diabetic man had persistent, bilateral, chronic macular oedema. Despite two macular grid laser treatments to each eye, the best-corrected visual acuity remained at 6/60 right and left. He underwent right IVT, performed by a surgeon with previous experience of intravitreal injections. It was recorded as having been performed in aseptic conditions with a needle insertion site 3 mm posterior to the superotemporal limbus. Routine examination 1 h post-procedure revealed a needle puncture site in the superotemporal aspect of the posterior lens capsule and multiple collections of triamcinolone throughout one lamellar plane of the posterior lens substance. Figures 1 and 2 show the lens at 2 months and 5 months post-procedure. At the time of these photos, the visual acuities were Snellen 3/60, and count fingers, respectively. The triamcinolone granules remained almost unchanged for almost a year before gradually dispersing. A posterior subcapsular cataract first developed at 7 months post-procedure. However, even at 11 months (Figure 4), the lens was not densely cataractous and there was still a needle track opacity visible. Although the cataract has

progressed, he has not undergone cataract extraction as the intraocular pressure rose to 42 mm Hg at 6 months post-procedure, and has proved difficult to control, making surgery high risk. The view of the macula is poor but the chronic oedema does not appear to have improved.

Comment

Our current technique for intravitreal injection is based on recently published guidelines¹ and in summary is as follows: after appropriate local anaesthetic, the surgical field is cleaned with povidone iodine and a speculum is inserted to keep the site clear of eyelashes. Calipers are used to mark a point 4 mm posterior to the limbus. A bleb of local anaesthetic is created at this site. The triamcinolone is injected at this point through a 27-gauge needle aiming towards the optic nerve. In the above case, a combination of a slightly anterior injection site (3 mm from the limbus) and misdirection of the needle is likely to be responsible for the complication.

Perforation of the lens usually causes a rapidly forming, localized or generalized lens opacity, sometimes forming along the track of the penetration.² In our case, the injection site was visible, as were the triamcinolone granules in a lenticular plane and two tracks along which they travelled. However, the lens did not opacify until 7 months post-procedure.

We have illustrated above the association between steroid and cataract and breach of the lens capsule and cataract. We were therefore surprised that this patient did not develop cataract sooner. Intravitreal triamcinolone is being administered increasingly frequently for an ever increasing list of conditions. This uncommon complication of the procedure shows that this is not

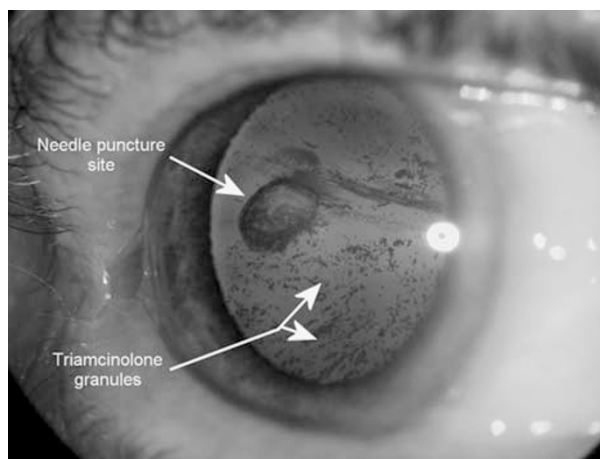


Figure 1 2 months post injection.



Figure 2 5 months post injection.

a risk-free procedure. It illustrates the importance of careful technique in the hands of experienced surgeons and the need for careful supervision for trainee surgeons.

References

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Sir,

A case of recurrent infectious crystalline keratopathy secondary to *Haemophilus influenzae*

A 50-year-old man presented to our hospital with a 3-day history of blurred vision in his right, only eye. He had a history of bilateral congenital glaucoma leading to a left enucleation at the age of 3 years. He had undergone a right extra capsular cataract extraction without lens implant and two trabeculectomies.

There was a history of two right penetrating keratoplasties. The first was in 1991 for bullous keratopathy. In 1994, an episode of crystalline keratopathy occurred inferotemporally in the graft host junction. A corneal scrape grew *Haemophilus influenzae*, sensitive to penicillin, chloramphenicol, erythromycin, and tetracycline. After an initially poor clinical response to penicillin, the lesion responded to cefuroxime and ticarcillin. The second penetrating keratoplasty was in 1994 for corneal opacification secondary to this infection.

In the second presentation, his right visual acuity was 6/60. The cornea was clear and the anterior chamber had a moderate amount of flare and cells. He was

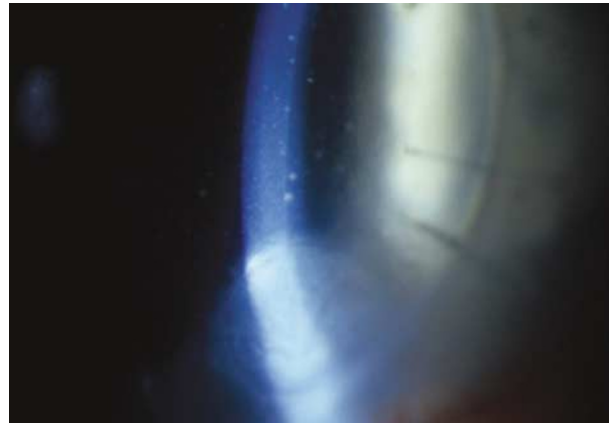


Figure 1 Slit-lamp examination demonstrating infiltrate with front-like processes.

taking the following medications: prednisolone acetate 1% drops twice daily, timolol 0.25% twice daily, pilocarpine gel nocte, latanoprost nocte, and polyvinyl alcohol as required. A provisional diagnosis of corneal graft rejection was made and the frequency of prednisolone acetate 1% drops was increased to six times per day.

He returned 3 days later without any subjective improvement. A corneal infiltrate with frond-like processes spreading into the surrounding stroma and 1.8 mm diameter overlying epithelial defect had developed in the peripheral donor inferonasally (Figure 1). The stroma was thinned to 40% of normal. The corneal scrape stained with Gram stain demonstrating no neutrophils or organisms. Moderate growth of *Haemophilus influenzae* was noted on Chocolate agar plates, 24 h after inoculation. The organism was sensitive to chloramphenicol, ciprofloxacin, ofloxacin, gentamicin, and resistant to cefuroxime. The infiltrate healed over a period of 2 months with hourly ofloxacin 0.3% drops for 3 days, then reduced to 2 hourly and stopped after 2 weeks. Chloramphenicol 0.5% four times per day was then commenced for a duration of 2 months. A bandage contact lens was used from 2 weeks post presentation until resolution of the corneal epithelial defect at 2 months. This resulted in a vascularised stromal scar and localised thinning.

Discussion

To our knowledge, this is the first reported case of crystalline keratopathy secondary to *Haemophilus influenzae*. Crystalline keratopathy is an indolent corneal stromal infection characterised by a sharply demarcated white infiltrate with arborescent branching processes often in the absence of significant stromal or anterior chamber inflammation or epithelial defect.