pigmentary disturbances at the posterior pole were present with no evidence of active choroiditis or subretinal fluid.

The treatment for VKH is well established, requiring the use of a steroid in some cases for up to 1 year to prevent recurrence. Oral prednisone may be used, but in severe cases high-dose intravenous methylprednisolone is recommended. In steroid-resistant cases, cyclosporin A has been successfully used. Refractory cases have also been documented to respond to newer immunosuppressive agents such as FK506, which has been isolated from the fermentation broth of Streptomyces tsukubensis. Long-term studies, however, are needed to fully evaluate the efficacy and safety of this drug.

To our knowledge, this is the first reported case of VKH among the Kadazans, the largest ethnic group in Sabah, a state of Malaysia north of Borneo.

Early diagnosis and aggressive treatment improve outcome. Treatment must be initiated early to prevent chronicity, which may result in such complications as retinal and disc neovascularisation that may lead to vitreous hemorrhage and tractional retinal detachment, choroidal neovascularization, cataract, and glaucoma.

References

Acute post-cataract-surgery endophthalmitis after suture removal

Andrew Keat Eu Lim, FRCS, MMed1
Shueh Lin Lim, MRCP2
Elias Hussein, MS3

1Department of Ophthalmology
2Department of Medicine
Penang Hospital
Penang, Malaysia

3Department of Ophthalmology
Selangor Hospital
Selangor, Malaysia

ABSTRACT

Objective
To report a case of acute post-cataract-surgery endophthalmitis after suture removal.

Methods
This is a case report.

Results
A 77-year-old Chinese male presented with sudden painless blurring of vision in the left eye (OS) of 3 days duration 22 days after cataract surgery and 15 days after corneal-suture removal. OS was injected with corneal striae and had a visual acuity of 1/60, 3+ anterior-chamber cells with small hypopyon, and hazy vitreous. Endophthalmitis was considered and immediate vitreous tap with intravitreal antibiotics were given. Intensive topical antibiotics were instituted, followed by a repeat intravitreal antibiotic injections 3 days later. Postoperatively, there was massive fibrin formation with cytokine membrane and seclusio pupillae that required two peripheral iridotomies. Visual acuity slowly recovered from hand movement to 6/18.

Conclusion
Endophthalmitis can be successfully treated without pars plana vitrectomy, following the Endophthalmitis Vitrectomy Study (EVS)
guidelines. Removal of corneal sutures must be followed with topical antibiotics to prevent the possibility of endophthalmitis secondary to introduction of microorganisms into the anterior chamber via the suture tract.

A 77-YEAR-OLD Chinese male, with multiple health problems including ischemic heart disease, congestive cardiac failure, systemic hypertension, type 2 diabetes mellitus, and benign prostatic hyperplasia underwent phacoemulsification cataract extraction with foldable-acrylic-intraocular-lens implantation in the left eye (OS) in 2003. A clear corneal temporal incision was made, which was closed with one 10/0 nylon suture. The surgery was uneventful with no immediate postoperative problem. The eye was treated with neomycin, polymyxin B, and dexamethasone drops for 1 week.

Seven days postoperatively, vision was 6/24. The tight suture was removed. Treatment with dexamethasone eye drops was continued for another week.

Twenty-two days postsurgery, patient complained of sudden painless blurring of vision in OS of 3 days duration. Ocular examination revealed vision of 1/60 in OS and 6/30 in the right eye (OD). The left conjunctiva was injected and the cornea had striae. There was no elevation of intraocular pressure (IOP). There were 3+ cells in the left anterior chamber with a small hypopyon. The left fundus revealed hazy vitreous with only a glimpse of the optic disc as seen with indirect ophthalmoscope. The right anterior segment was normal with an immature senile cataract. The right fundus was essentially normal.

A presumptive diagnosis of endophthalmitis was made. A vitreous biopsy was performed and patient was given intravitreal antibiotics consisting of ceftazidime 2.5 mg and vancomycin 1 mg plus subconjunctival injection of ceftazidime 100 mg. In addition, hourly topical antibiotics consisting of vancomycin 5% and ceftazidime 5% were given, and topical atropine 1% QID. Gram stain and cultures of vitreous samples did not isolate any fungus or bacteria.

After 72 hours, a repeat intravitreal antibiotic injection was given when no significant change was noted in the patient’s condition. After 5 days, the hypopyon resolved with fibrin present on the surface of the intraocular lens (IOL). Topical dexamethasone was initiated. The fibrin slowly contracted and anterior-chamber cells progressively decreased. On day 20, iris bombe developed and a sequential argon-YAG peripheral iridotomy (PI) was created, relieving the pupil block. On day 25, the anterior-chamber cells decreased to 1+ and patient was discharged with visual acuity of hand movement.

On day 38, iris bombe recurred and sequential argon-YAG laser was performed to enlarge the peripheral iridotomy. B-scan showed retrolental vitreous opacities (Figure 1). On day 70, iris bombe recurred and a second sequential argon-YAG laser peripheral iridotomy was made at 5 o’clock, which relieved the pupil block. Ten months later, visual acuity in OS was 6/18 and fibrin on the IOL surface had resolved significantly. Cyclic membrane and seclusio pupillae were still present, but the anterior chamber was deep with two patent peripheral iridotomies. Repeat B-scan showed the retina was attached and no vitreous opacities.

Sudden blurring of vision within weeks of cataract surgery should alert the ophthalmologist to the possibility of endophthalmitis, the most feared of all postoperative complications. Pain is a prominent feature of severe endophthalmitis, but early in the course of the infection, the pain may be mild as seen in this case.

Apart from pain and blurring of vision, features of endophthalmitis include lid edema, chemosis, conjunctival injection, corneal haze, numerous cells or hypopyon in the anterior chamber, vitritis, absent red reflex, and inability to visualize the fundus even with the indirect ophthalmoscope.

Systemic diseases such as diabetes mellitus are risk factors for endophthalmitis. Those caused by Gram-positive, coagulase-negative staphylococci occur more frequently among diabetics than nondiabetics. Thus, good diabetes control is important before proceeding with any intraocular surgery.1,2

Another risk factor is ruptured posterior capsule, which provides intraoperative contact with the vitreous cavity.3,4

Advanced age and being male have been associated with increased risk of postoperative endophthalmitis.2 Silicone polypropylene foldable lenses have also been associated with a higher rate of endophthalmitis than polymethylmethacrylate lenses.5 However, no difference has been seen in the rate of contamination between extracapsular cataract extraction and phacoemulsification.6 Poor surgical techniques such as inaccurate wound closure, increased operating time, and excessive surgical manipulation can contribute to the risk.7 Temporal sutureless clear cornea incision has been postulated to be associated with a higher risk of endophthalmitis because the incision site is not protected from the environment by the upper lid.

The removal of suture one week after cataract surgery without any antibiotic coverage or other factors such as inaccurate wound construction and closure may have predisposed this patient to endophthalmitis.

Early diagnosis and prompt institution of antibiotics are important. Intravitreal vancomycin is used in all cases of Gram-positive organisms introduced exogenously, which has been noted to be sensitive to this antibiotic.8,9 Doses up to 2 mg have been found nontoxic to the retina.7 Although a dose of 0.2 mg was found to be sufficient in maintaining intravitreal vancomycin concentration above the minimum
Inhibitory concentration for most organisms for 4 days, we adhered to the Endophthalmitis Vitrectomy Study (EVS) recommendation of using 1 mg. Intravitreal ceftazidime was used to cover possible gram-negative organisms. Amikacin is another option for the Gram-negative bacteria. Both exhibit equivalent activity with little difference in the likelihood of drug resistance. Amikacin, an aminoglycoside, has the advantage of synergistic effect with vancomycin. However, there have been reported cases of macular infarcts at therapeutic doses. Ceftazidime, a third-generation cephalosporin, is safe but is physically incompatible with vancomycin, requiring injection via separate syringes to prevent precipitation of the drugs.

The current universally accepted intravitreal antibiotic treatment to provide best coverage for endophthalmitis microorganisms is the combination of vancomycin and either amikacin or ceftazidime, which was given in this case. Subconjunctival ceftazidime provided antibacterial coverage to the anterior segment. Ceftazidime, like vancomycin, offers very low vitreous concentrations when given subconjunctivally.

In the Endophthalmitis Vitrectomy Study (EVS), confirmed microbiologic growth was demonstrated in only 69.3% of intraocular specimens. Bascom Palmer Eye Institute reported a slightly higher culture-positive rate of 75%. Therefore, it is not unusual that no organism was isolated from the patient's vitreous sample.

In endophthalmitis, samples from both aqueous and vitreous should be sent for microscopy and culture even though the vitreous yields more positive cultures. Vitrectomy also offers no advantage in terms of culture yield when compared with vitreous tap or biopsy. No aqueous samples were taken from this patient. But it should have been recommended as it is a safe procedure in experienced hands. Introduction of new organism via the paracentesis is unlikely when it is performed using sterile techniques. When initial cultures are negative, such as in this case, a repeat vitreous biopsy with aqueous tap is recommended prior to the second intravitreal injection of antibiotics.

Prior to the EVS guidelines, treatment of endophthalmitis involved various combinations of topical, subconjunctival, systemic, and intravitreal antibiotics. Pavan et al. subsequently demonstrated that using intravitreal with no systemic antibiotics resulted in reasonable outcome. In the early 1980s, intravitreal antibiotics became established as the mainstay treatment, while the use of systemic antibiotics and pars plana vitrectomy remained controversial.

The 1995 landmark prospective EVS concluded that intravenous ceftazidime and amikacin did not alter the final visual acuity and media clarity. It also found that pars plana vitrectomy was beneficial only in patients who present with vision of "perception to light" only. Omission of intravenous antibiotics and performing pars plana vitrectomy only in patients presenting with vision of "perception to light" offer considerably savings in treatment cost without affecting final visual outcome.

This patient was diagnosed with acute bacterial postcataract-surgery endophthalmitis and managed according to the EVS guidelines. He was treated with repeated intravitreal vancomycin and ceftazidime and intensive topical vancomycin and ceftazidime. No pars plana vitrectomy was performed and no intravenous antibiotics were given. The final visual outcome was 6/18.

**References**


Use of preservative-free multidose dispenser (Comod system) for glaucoma medications

Ahmad Fauzi, MD¹
Shamala S. Ganesan, MD¹
Mimiwati Zahari, MD¹
Mariam Jamaludin, MPH²

¹Department of Ophthalmology
²Department of Social and Preventive Medicine
Faculty of Medicine, University Malaya
Malaysia

ABSTRACT

Purpose
To describe our experience in the use of preservative-free Comod system in glaucoma patients.

Methods
120 glaucoma patients were recruited and randomly assigned to group I (conventional system) or group II (Comod system). Schirmer’s test, tear-breakup time (BUT), and culture and sensitivity (CS) tests were performed. A self-administered questionnaire was given to participants to evaluate ease of application, ocular stinging, and dryness.

Results
The Comod system did not cause any ocular stinging (p < 0.01) and was easy to use. Tear BUT and Schirmer’s test were not different between the 2 groups. CS tests of the Comod at week 11 did not yield any organism.

Conclusion
The Comod system was more comfortable, easy to use, and can be used as a multidose system in administering glaucoma medications.

A PRESERVATIVE is important for two reasons: to prevent the patient from introducing microbiologically contaminated drugs into his eye(s) and to maintain the potency of the ophthalmic drug.¹,² The inclusion of preservatives in eye-drop dispensers, however, does not guarantee sterility. A high contamination rate was reported by Schein et al.³ (29%), Marion and Tampert⁴ (27%), Hovding and Sjursen⁵ (12.9%).

The Comod eye-drop dispenser, introduced recently in Malaysia, has a shelf life of 2 years and can be used for 12 weeks after it has been opened.⁶ As a sealed system, it has an “airless pump” that works without air equalization and prevents the reflux of external air and liquid when the solution is dosed. It also has an average drop size of 32.5 ± 2.5 ul, which is equivalent to the capacity of the inferior conjunctival fornix.

Timolol, a commonly used maintenance medication for glaucoma, comes in both the conventional eye-drop dispenser and in Timo-Comod system. We evaluated our experience using both systems. We performed the Schirmer’s test, tear-breakup time (BUT), and graded the conjunctival injection by fluorescein. Culture and sensitivity for bacterial contamination were done for the Comod system.

One hundred twenty patients with open-angle glaucoma were randomly assigned to conventional Timolol 0.25% (Group I, 60 patients) or Comod system (Group II, 60 patients). Patients in both groups were instructed on the correct method of application specifically in avoiding any contact between the dropper tip and the eye or lid to maintain sterility.

This open-label study was divided into two phases: a comparison of the Comod system with the conventional system in phase 1, and determination of sterility of the Comod system in phase 2. Patients were also given a self-administered questionnaire to grade the convenience of application, severity of ocular stinging, and dryness of eyes.

Convenience of application was graded as follows: (1) Difficult—frequent spillage, (2) Moderately difficult—spillage of more than 10 times in a month, (3) Easy—spillage less than 10 times in a month, and (4) Extremely easy—no spillage. Spillage was defined as any drop that