Bilateral *Pseudomonas aeruginosa* endophthalmitis following bilateral simultaneous cataract surgery

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A bilateral simultaneous cataract surgery (BSCS) was performed on a 67-year-old man. The surgeon had not changed the surgical settings in between the two procedures for the two eyes. The patient developed fulminant bilateral endophthalmitis a day following the BSCS. Intravitreal culture grew *Pseudomonas aeruginosa*. The source of infection was not found. Immediate bilateral vitrectomy and intravitreal, subconjunctival, topical and systemic antibiotic did not save the eyes. Patient ended up with bilateral visual loss.

Key words: Bilateral cataract, bilateral endophthalmitis, *Pseudomonas aeruginosa*.

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Bilateral simultaneous cataract surgery (BSCS) has recently gained popularity amongst ophthalmologists because of the absence of reported serious postoperative complications.[1,2] We present an immunocompetent case of bilateral *Pseudomonas aeruginosa* endophthalmitis (PE) following an uneventful BSCS. To the best of our knowledge, this is the second case of bilateral endophthalmitis following a BSCS in an immunocompetent patient.

Case Report

Right eye phacoemulsification and intraocular lens implantation (IOL) (Acrylic foldable, AKREOSFIT, Bausch and Lomb, UK) and left eye unplanned extracapsular cataract extraction (ECCE) and IOL implantation (PMMA, Domilens, France) were performed simultaneously on a 67-year-old man.

The indications for performing BSCS were bilateral

significant cataract and patient's desire to have both cataract surgeries performed at the same time.

Routine operating room protocol for prevention of intraocular infection was: preoperative sterilization of surgical instruments and some of the nondisposable drapes, eyelash isolation by means of adhesive drape and povidone iodine 10% preparation of the eyelid and face just before starting the surgery; intraoperative irrigation fluid of balanced salt solution, viscoelastic injection (2% hydroxypropyl methyl cellulose, Cellugel, Alcon, Belgium) and subconjunctival injection of antibiotic (gentamicin 20 mg/0.5 ml) and steroid (dexamethasone 2 mg/0.5 ml) at the end of the operation; and postoperative patching of the eye for 24h followed by topical antibiotic drop (chloramphenicol every six hours) for three weeks and steroid (betamethasone every six hours) for four weeks. No intraoperative complications occurred in either eye.

The surgeon did not change the surgical equipment in between the two eyes. The surgeon had had the same protocol of BSCS for some patients without complication. The patient developed pain and redness of both eyes associated with severe anterior chamber reaction (4 +) on the second postoperative day. Intravitreal antibiotic (vancomycin 1mg/ 0.1ml + amikacin 0.4 mg/ 0.1 ml) was administered and antibiotic eye drops (vancomycin 50 mg/ ml + amikacin 15 mg/ ml) were started. The patient did not improve and was referred to our hospital three days after the BSCS. At the time of referral, eye examination showed a visual acuity of no light perception in the right and light perception without accurate projection in the left eye, severe corneal edema and severe fibrin exudates in the anterior chamber obscuring the iris, IOL and vitreous cavity in both eyes [Fig. 1]. Immediate vitrectomy procedure, IOL removal, intravitreal (vancomycin 1 mg/ 0.1 ml + amikacin 0. mg/ 0.1 ml) and subconjunctival antibiotic injection (gentamicin 20 mg/ 0.5 ml) was performed bilaterally under general anesthesia.

He also received systemic (ceftazidime 1g IV 8h) and topical antibiotics. Intravitreal culture showed *Pseudomonas aeruginosa*. The patient developed no light perception on both eyes a week after the operation. Cultures from different parts of the operation room, surgical equipment and irrigation fluid were negative. The surgical set culture showed negative result but it had been sterilized after the BSCS.

Figure 1: Slit-lamp photograph of a patient with bilateral endophthalmitis following a bilateral simultaneous cataract surgery

Discussion

Bilateral intraocular surgery causes ongoing debate and perpetual disagreement among ophthalmologists.[1] Bilateral refractive error (over 2 diopters), medical, social or economic reasons and patient's request are the main indications for a BSCS.[1] It has strongly been advised to consider the BSCS as two separate surgeries.[1,2] Presented case had BSCS for a social reason. The surgeon, however, had not changed the equipment in between the two eyes.

Unilateral endophthalmitis after a BSCS, either ECCE or phacoemulsification, has previously been reported.[2] Ozdec *et al*.[3] recently reported a case of bilateral endophthalmitis following a BSCS that finally developed functional vision on both eyes. The present case resulted in no vision at the end. There was another BSCS performed a day before the presenting case by the same surgeon who developed unilateral *Pseudomonas aeruginosa*, was referred to another hospital and resulted in an evisceration.

A case of unilateral uncomplicated phacoemulsification was also performed on the same day as the presenting case, but with a different surgical set, without complication.

Pseudomonas endophthalmitis is associated with poor visual outcome despite prompt treatment.[4] Our patient lost vision in both eyes. There are some reports of epidemic endophthalmitis after an uneventful unilateral cataract surgery.[5] Such a situation after BSCS will be devastating.

In conclusion, if BSCS is being performed, the surgeon needs to consider the other eye cataract surgery as a separate surgery and further needs to take care not only using separate instruments but also needs to scrub for the second time and change the cassette and phaco probe if performing phacoemulsification. The surgeon needs to consider it as another cataract surgery.

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