
SHORT COMMUNICATION

Case report

Endophthalmitis caused by Mycobacterium abscessus

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PURPOSE. *To describe the clinical and laboratory features of a case of endophthalmitis caused by Mycobacterium abscessus in a patient immunocompetent.*

METHODS. *case report. A 65-year-old woman with bilateral cataracts was treated by surgery with phacoemulsification and posterior chamber lens implantation.*

RESULTS. *The fundusoscopic examination showed vitreous cells over the optic nerve head, chorioretinal infiltrates, and focal vasculitis. Vitreous humor aspirate disclosed acid-fast bacilli. In the culture on Löwenstein-Jensen medium grew colonies identified as M. abscessus.*

CONCLUSIONS. *M. abscessus is cause of endophthalmitis and crystalline keratopathy. Risk factor include surgical intervention or exogenous contamination. Our patient has no systemic pathology predisposing to the development of endophthalmitis. (Eur J Ophthalmol 2003; 13: 800-2)*

KEY WORDS. *Endophthalmitis, Mycobacterium abscessus, Phacoemulsification, Cataracts*

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INTRODUCTION

Endophthalmitis caused by *Mycobacterium abscessus* is an uncommon infection. We describe a post-operative case of endophthalmitis caused by *M. abscessus* after cataract surgery by phacoemulsification with posterior chamber intraocular lens implantation that was treated with clarithromycin.

Case report

A 65-year-old woman with bilateral cataracts was admitted to the hospital for surgery. She had undergone dacryocystectomy 3 months previously on her right eye. The patient's vision was 20/80 in both eyes and slit-lamp examination revealed nuclear cataract. Her intraocular pressure was 18 mm Hg in both eyes.

The operation on the right eye was performed under topical anesthesia and previous disinfection with 5% povidone-iodine. The crystalline phacoemulsification was performed by a 3.2-mm incision; the pliable intraocular lens was then implanted with injector. Because the cornea was properly valved, the wound was not sutured; it was found to be watertight, and no leaking aqueous humor was seen after the operation. No surgical complications arose, and treatment with tobramycin and dexamethasone was prescribed. Excellent general condition was present 24 hours after surgery, in absence of any discomfort. The visual acuity was 20/40 without correction and 20/20 with pinhole; slit-lamp examination revealed no Tyndall phenomenon, the intraocular pressure was 20 mm Hg, and the ocular fundus was normal. Two weeks later, the patient complained of severe visual deficit with vision of 20/100. Slit-lamp examination of the right eye showed trace conjunctival injection, inferior keratic precipitates, whitened plate in the posterior capsule of the crystalline lens, and moderate (+2) cell and mild (+1) flare. The funduscopic examination showed vitreous cells over the optic nerve head, chorioretinal infiltrates, and focal vasculitis, these findings being suggestive of subacute endophthalmitis of the posterior segment. Topical treatment with vancomycin (50 mg/ml) and tobramycin (20 mg/ml) was started and intravenous therapy with ceftazidime (1.5 g/8 h) and amikacin (400 mg/12 h) was also given, with injections of amikacin (0.4 mg/0.1 ml) and vancomycin (1 mg/0.1 ml) also administered to the vitreous cavity through pars plana. Despite this treatment, the patient's vision worsened to detecting hand movements at 20 cm. The fundus became hazy on examination. Central vitrectomy and posterior capsulectomy were decided upon owing to the lack of response to treatment. Whitish foci similar in aspect to grains of rice could be seen, with inflammatory reaction surrounding the retina, perivascular sleeves on the retinal vessels, and on both arteries and veins, and the optic disk as well as the adjacent retina were edematous. The surgical operation was concluded with intravitreal injection of vancomycin (1 mg/0.1 ml) and ceftazidime (2.25 mg/0.1 ml). A sample of nondiluted vitreous humor was extracted for microbiological study. Some whitish colonies grew after 4 days' incubation on Löwenstein-Jensen medium. The strain was identified as *M. abscessus*, with proved resistance to the

conventional tuberculostatics and to cefoxitin, gentamicin, and ciprofloxacin, although it was sensitive to amikacin, erythromycin, clarithromycin, and azithromycin. Treatment was started with clarithromycin 500 mg/12 h owing to its good vitreous penetration, and the patient recovered slowly, her vision reaching 20/80 after one month of this therapy.

DISCUSSION

Endophthalmitis, although uncommon, is one of the most vision-threatening complications of cataract surgery. Most cases appear during the first month of the postoperative period. The acute-subacute forms of postoperative endophthalmitis are usually inflammatory or infectious in their etiology. The factors responsible for an increased sterile inflammatory response include the surgical trauma itself and the introduction of material or chemical foreign matter during surgery; retained lens material, particularly when mixed with vitreous, may elicit a violent inflammatory reaction. Most of these factors coexisted in the current case. The patient reported had subacute inflammation, presenting with low-grade symptoms. The endophthalmitis appearing in the second week after surgery was probably related to the low virulence and slow rate of growth in the tissues, characteristic of *M. abscessus* infections. Infectious postoperative endophthalmitis may appear after any intraocular procedure. The incidence of endophthalmitis after cataract surgery varies depending on the surgery applied. After phacoemulsification or extracapsular cataract extraction and intraocular lens implantation, the incidence of endophthalmitis is between 0.07 and 0.12%, whereas after secondary implantation it is approximately 0.4%. Fungi and gram-positive and gram-negative bacteria are known to cause infectious endophthalmitis. *Pseudomonas aeruginosa* is the commonest gram-negative organism isolated; fungal endophthalmitis is rare. *Staphylococcus epidermidis* and other coagulase-negative staphylococci, *Propionibacterium acnes*, *Candida*, *Streptococcus*, *Actinomyces*, and *Nocardia asteroides* are the microorganisms most frequently cultured in postoperative endophthalmitis (1).

M. abscessus are atypical mycobacteria that have been associated with keratitis (2), corneal transplant (3), four cases of endophthalmitis occurring after cataract

surgery and intraocular lens implantation (4-6), and one case of endogenous endophthalmitis (7). *M. abscessus* is widely distributed in nature, particularly in water; it is resistant to some disinfectants and can easily contaminate antiseptic solutions, saline solution, and surgical material, causing outbreaks of nosocomial infection. Ocular infections by *M. abscessus* follow a slow course and, in the majority of cases, are acquired through surgical trauma or contamination of the material, water, or antiseptic solutions. There exists only one reported case of endogenous endophthalmitis by *M. abscessus* in an immunodepressed patient. In our patient there was no systemic pathology predisposing to the development of endophthalmitis. The disinfection of the upper and lower conjunctival fornix with 5% povidone-iodine has been shown to be significantly efficacious in preventing postoperative infection and its effect is similar to the administration of antibiotics (8). We performed disinfection with povidone-iodine, covered the eyelashes and eyelids with plastic sheaths, and used sterile instruments and perishesables; the source of the infection is therefore not known. In epidemiologic study of the operating theater materials, *M. abscessus* was not present in antiseptics, water, fomites, or disinfectants. Treatment of

infections caused by *M. abscessus* requires prolonged therapy. This microorganism is resistant to conventional antituberculosis agents, but is usually sensitive to azithromycin, clarithromycin, amikacin, and cefoxitin (9). Although there are studies on the use of intravitreal clarithromycin, owing to its short half-life, it was administered orally (10).

The isolation of mycobacteria in ocular samples requires special attention by the microbiologist, because these microorganisms are not frequently isolated and can be confused with *Corynebacterium* or *Nocardia*. When a case of endophthalmitis occurs after surgical intervention, we propose that the investigation of mycobacteria be included in the microbiological diagnosis. In positive cultures, it is essential to perform Ziehl-Neelsen staining in order to discount this etiology.

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