Aspergillus niger endophthalmitis after cataract surgery

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We report a 65-year-old diabetic woman who developed Aspergillus niger endophthalmitis after cataract surgery. She presented 9 weeks after extracapsular cataract extraction with a black growth covering the cornea and moderate echoes in the vitreous on ultrasonography. After microbiological confirmation of fungal endophthalmitis, the patient received intravitreal amphotericin B 5 μg, topical natamycin 5% hourly, atropine 1% 3 times, and oral antifungal therapy. The patient was told the visual prognosis and was advised to have penetrating keratoplasty and vitrectomy, which she refused.


Ocular aspergillosis usually presents as keratitis and rarely as endophthalmitis. Of all Aspergillus species, isolated postoperative Aspergillus niger endophthalmitis is an unusual occurrence after cataract surgery.1,2 Aspergillus niger as a cause of scleritis associated with endophthalmitis has been described; however, to our knowledge, concomitant postoperative endophthalmitis and keratitis have not been reported.3 We describe a case of Aspergillus niger endophthalmitis that developed after cataract surgery. There was associated keratitis in the form of a black sheet-like growth on the corneal surface.

Case Report

A 65-year-old diabetic woman with good glycemic control presented with a black sheet-like growth on the cornea in the right eye 9 weeks after an uneventful extracapsular cataract extraction with intraocular lens implantation that was performed elsewhere. She gave a history of some ocular discomfort and decreasing visual acuity 4 weeks after the surgery that, on examination by the operating surgeon, was diagnosed as postoperative inflammation. She was prescribed topical steroids, antibiotics, and cycloplegics. At this stage, the primary surgeon noted no corneal involvement. There was no improvement. Three weeks later, on noting a black growth on the corneal surface near the corneoscleral section, the operating surgeon referred the case to us.

On examination, visual acuity was light perception in the right eye. The sclerocorneal incision had a few loose sutures. A black sheet-like growth covered the whole cornea (Figure 1, top). B-scan ultrasonography revealed moderate-intensity echoes filling the vitreous cavity. A corneal scraping and vitreous aspirate from the right eye was subjected to a 10% potassium hydroxide smear, Calcofluor stain, and gram stain examination. Fungal hyphae were detected in both samples (Figure 1, bottom). Direct microscopy of the Calcofluor-white-stained sample under a fluorescent microscope showed acute angled branching of septate hyphae. Culture on Sabouraud’s dextrose agar plate revealed white mycelial colonies with black pigmentation growing along the C-line of inoculation. On microscopy, the organism was identified as Aspergillus niger.

An intravitreal injection of 5 μg amphotericin B was administered. The patient was started on oral itraconazole 400 mg twice daily, hourly topical natamycin 5%, and topical atropine 1%; the steroid drops were stopped.

The visual prognosis was explained to the patient. The option of a corneal transplant and vitrectomy was offered, but the patient refused. She was subsequently lost to follow-up.

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Discussion

Until the late 1950s, little attention had been directed toward fungi as a cause of postsurgical endophthalmitis. Aspergillus endophthalmitis in the endogenous form has been linked to an immunocompromised state or to contaminated intravenous fluids.\textsuperscript{4,5} Investigations of an endogenous source were negative in our patient. That the patient had been diagnosed as having late postoperative inflammation 3 weeks before a black growth on the corneal surface was noticed suggests that the endophthalmitis preceded the corneal involvement. The loose sutures at the surgical section noted at the time of presentation to us was probably secondary to the keratitis.

Postoperative \textit{A niger} endophthalmitis has been infrequently reported. Documented cases\textsuperscript{1} describe a fluffy, white mass in the anterior chamber. The present case was diagnosed by the primary surgeon as postoperative uveitis, which 3 weeks later developed corneal involvement, suggesting that it was a primary endophthalmitis with secondary keratitis. We are unaware of a previous report of \textit{A niger} endophthalmitis presenting in the form of a black sheet-like growth on the corneal surface. This case emphasizes that any late postoperative inflammation should be taken seriously and that patients must be carefully monitored for an underlying infective etiology.

References

1. Kermani NK, Aggarwal SP. Isolated post-operative \textit{Aspergillus niger} endophthalmitis. Eye 2000; 14:114–116

Figure 1. (Brar) \textit{Top:} The eye at presentation has a black sheet-like mass covering the entire corneal surface. Note the loose sutures at the corneoscleral section (arrow). \textit{Bottom:} A Calcofluor white stain of the corneal scraping shows the hyphae characteristic of the \textit{Aspergillus} species (original magnification ×400).