Aspergillus terreus postoperative endophthalmitis

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Aspergillus endophthalmitis has been reported in drug abusers, in immunosuppressed hosts, following intraocular surgery, and after trauma. Usually Aspergillus flavus, Aspergillus fumigatus, and Aspergillus nidulans are implicated as the offending organisms. Recently Aspergillus terreus endophthalmitis has been reported in a patient with chronic lymphocytic leukaemia. We describe a case of postcataract surgery Aspergillus terreus endophthalmitis who was successfully treated by vitrectomy, and intraocular and systemic antifungal antibiotics. To our knowledge this is the first reported case of postoperative endophthalmitis caused by this species of Aspergillus.

Case report
A 50-year-old man gave a history of uneventful intracapsular cataract extraction in left eye 4 weeks before presenting to us. His early postoperative period was reported to be uneventful. Four weeks later he experienced pain, redness, and reduction in vision in the same eye. He was diagnosed to have postoperative endophthalmitis and referred for further management. On examination visual acuity in the operated eye was 6/20. There was a moderate (2+) reaction. At the 6 o'clock position behind the iris in the anterior vitreous a white fluffy mass with feathery edges was seen (Fig 1A). A moderately good fundal glow was present with opacities in the mid vitreous and inferiorly. He was confirmed clinically to have postoperative endophthalmitis. After baseline renal function evaluation, intravenous gentamicin 80 mg three times a day and cefazolin 1 g four times a day was started. Topically 15% gentamicin and...
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Figure 1(A) Preoperative photograph. Note white fluffy mass in anterior vitreous.

Figure 1(B) Lactophenol cotton blue mount of the culture showing hemispherical vesicle covered with hirsute phialides bearing smooth conidia, characteristic of A terreus (×110).

Figure 1(C) Postoperative photograph of the same eye.

50% cefazolin eye drops were instilled every hour alternately. Within 8 hours of presenting to us the patient port standard vitrectomy was performed and an undiluted vitreous biopsy specimen was sent for microbiological evaluation.

The wet mount, Giemsa, and Gram's stains were negative for bacteria and fungus. Intra-vitreal gentamicin 100 μg with cefazolin 2-25 mg and dexamethasone 360 μg were given at the end of surgery. A vitreous sample was cultured for aerobic and anaerobic bacteria and fungus on a number of media: blood agar, chocolate agar, Sabouraud's dextrose agar, brain heart infusion broth, and thioglycollate broth (supplemented with vitamin K and haemin). After 48 hours' incubation at 27°C Sabouraud's dextrose agar grew white fluffy colonies with central cinnamon brown pigmentation. Microscopic examination of the culture confirmed it to be Aspergillus terreus (Fig 1B). The same fungus was grown on several media and no bacteria were grown.

As soon as the microbiology report was obtained 5 μg of amphotericin B was given intravitreally. Oral ketoconazole 200 mg three times a day and topical natamycin every 2 hours were started. Intravenous and topical antibiotics were withdrawn. However, topical steroids were continued. The patient responded well with gradual recovery of a healthy fundal glow. The fundus details were visualised after 2 weeks and systemic ketoconazole was discontinued in view of its potential liver toxicity. When seen on the last follow up 4 months after vitrectomy the best corrected visual acuity was 6/18 and the vitreous was clear (Fig 1C).

Comment

Aspergillus endophthalmitis is a relatively rare condition encountered in clinical practice. Endogenous Aspergillus endophthalmitis is reported in immunocompromised individuals. Exogenous Aspergillus endophthalmitis is reported following cataract surgery, keratoplasty, and eye trauma. Aspergillus flavus, A fumigatus, and A nidulans have been reported to be causative agents of exogenous and endogenous endophthalmitis.

Recently Aspergillus terreus was reported to cause endogenous endophthalmitis in a patient with chronic lymphocytic leukemia. This was the first report of Aspergillus terreus endophthalmitis. The reason for infrequent reporting could be because Aspergillus terreus is often considered a laboratory contaminant.

The presentation of our patient with ocular pain and reduction in vision 4 weeks after surgery with localised involvement of anterior and vitreous was characteristic of fungal endophthalmitis. However, the direct examination of vitreous specimen was negative. Forty eight hours later the culture was positive and at this time only intravitreal amphotericin B was given. This was supplemented with oral ketoconazole and topical natamycin.

Four months following vitrectomy the patient had useful vision with no recurrence of infection. Because of the changing microbiology pattern of endophthalmitis, any organism cultured from vitreous should not be dismissed either as normal conjunctival flora or a laboratory contaminant.