Scytalidium dimidiatum fungal endophthalmitis

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Fungal endophthalmitis after surgery or trauma is uncommon. We are not aware of any report in the literature of Scytalidium dimidiatum (under the name S synanamorph subspecies of Hendersonula toruloidea) causing eye infection. This paper reports a severe case of S dimidiatum endophthalmitis following trauma. Despite intraocular amphotericin B, miconazole, topical natamycin, and extensive surgical debridement of the involved ocular tissues, the infection persisted and necessitated enucleation.

Case report
A 46-year-old Yemeni farmer sustained penetrating trauma by a thorn in his right eye. He presented complaining of pain and redness. Examination revealed vision of 20/200 with hyperaemic conjunctiva and a 6 mm corneoscleral laceration with prolapsed iris to the wound, clear lens, and no fundus view. A corneoscleral wound repair with excision of prolapsed iris was performed. Systemic gentamicin 60 mg intravenously every 8 hours and cephalozine 500 mg intravenously every 6 hours as well as topical gentamicin, cephalozine, and prednisolone eye drops (Pred Forte) were given postoperatively for 5 days. The immediate postoperative course was unremarkable, with a normal ultrasound examination and no intraocular foreign body detected. However, there was still prolapsed iris to the wound.

Five weeks following the initial trauma, the patient presented with 3 days of pain and decreased vision in his right eye. There was no history of recurrent trauma. Examination showed a visual acuity of hand motion with good light projection, the intraocular pressure was 16 mm Hg, the lids were swollen, and the eye was injected. The cornea had a localised abscess behind the wound at 10° adjacent to the limbus. The anterior chamber was deep with 5% hypopyon and 4+ cells and 3+ flare. The pupil was irregular with fibrous strands and exudates on the pupillary margin and on the anterior lens capsule. The patient was admitted with a working diagnosis of microbial endophthalmitis.

Various stains and cultures of aspirated aqueous and vitreous taps revealed no organisms. Intraocular vancomycin 1 mg/0.1 ml and gentamicin 0.2 mg/0.1 ml along with subconjunctival vancomycin 50 mg and gentamicin 20 mg were given. Systemic gentamicin 60 mg every 8 hours and cephalozine 500 mg every 6 hours were started.

The postoperative course demonstrated progressive clinical deterioration. The cornea developed an epithelial defect with diffuse infiltration (Fig 1). The anterior chamber shallowed and filled with fibrinous exudates. After 1 week we performed aqueous washout and exploration of the wound with removal of necrotic material for further microscopy and culture. The paracentesis site was closed with 10-0 nylon and glue. Intravitreal vancomycin, gentamicin, and subconjunctival gentamicin in the same dosages were given together with dexamethasone. On the second postoperative day the culture showed a fungal growth. A diagnosis of fungal keratitis with endophthalmitis was made. Systemic antibiotics and local fortified drops were discontinued and replaced by hourly 5% natamycin and 0.25% amphotericin B drops.

Three days later a corneoscleral graft was performed. During the procedure, it was decided to carry out a total iridectomy, a superior 12% cyclectomy, a lenscetomy as well as vitrectomy because all these areas were infected with a thick purulent layer. Intravitreal miconazole 25 μg/0.1 ml and amphotericin B 10 μg/0.1 ml, as well as subconjunctival miconazole 10 mg, were given. Topical natamycin and amphotericin B were continued for 1 month.

Postoperatively, vitreous haemorrhage, graft oedema, and an epithelial defect developed and later hyphaema and glaucoma. By the end of the month, corneal graft infiltration was noted inferiorly and the patient had no light perception. Based on complete loss of vision and persistence of the infection, enucleation was performed with an unremarkable course thereafter.

Mycological findings
Aqueous and vitreous fluid (obtained the second time) and corneoscleral, iris, ciliary body, and lens tissues contained fungal hyphae and showed acute and chronic inflammatory cells by direct microscopy and each yielded a dematiaceous fungus in culture (Fig 2). Colonies of the isolated mould (on Sabouraud dextrose agar, SDA) were initially creamy white, became fluffy brown, then blackish grey with age. The fungus was fast growing, filling a 90 mm plate of SDA within 1 week at 26°C. It grew well at 37°C and survived at 42°C. In cornmeal agar (CMA) the fungus produced thin septate hyphae which became brown and broader with time and transformed to chains

Figure 1  Diffuse corneal infiltrates before corneoscleral grafting.
Figure 2 Scytalidium dimidiatum in eye tissue and culture. Top left: section of a corneoscleral tissue showing inflammatory cell infiltrates and segments of fungal hyphae (arrows) (haematoxylin and eosin, ×240). Top right: section of an admixture of tissues of iris, ciliary body, and lens with branched septate hyphae (glycerol monostearate, ×240). Centre left: a 10-day-colony of fungus on SDA medium. Centre right: 3-week-old CMA slide culture showing chains of arthrospores and thick-walled, septate hyphae (lactophenol cotton blue, ×240). Bottom left: 3-week-old banana peel culture showing stromatal and pycnidial conidiomata (black dots on surface). Bottom right: a single pycnidial conidiomata, broken open to expose the white internal contents (×100).

of elongated unicellular or two celled arthrospores. Also produced were thick-walled brown and wider septate hyphae that did not form arthrospores (Fig 2). When the fungus was cultured onto sterile banana peel, it produced black stromatal or pycnidial conidiomata (Fig 2). It was thus identified as Scytalidium synanamorph subspecies of Hendersonula toruloidea (or S synanamorph subspecies of Natrassia mangiferae) within the species Scytalidium dimidiatum (Penz).

Comment
Pflugfelder et al. concluded that intracocular amphotericin B therapy should be considered if there is reasonable clinical suspicion of fungal aetiology. Our patient was treated prophylactically for bacterial endophthalmitis and only when the diagnosis of fungal endophthalmitis was made, did he receive amphotericin B and miconazole as well as 30 days of topical amphotericin B and natamycin without any clinical improvement. This could be explained on the basis of the virulence of the organism, the delay in commencing the antifungal treatment, or the initial heavy antibacterial treatment. The fungus behaved very aggressively and spread rapidly from the back surface of the cornea to adjacent sclera, posterior surface of iris, intact lens, ciliary body, and vitreous.

Visual results of exogenous fungal endophthalmitis have generally been very poor. However, there are cases reported with good vision. Our patient not only lost vision, but the infection was only eradicated by encleavage.

The aetiologial agent in this case is the fungus known as Scytalidium synanamorph subspecies of Hendersonula toruloidea which was recently classified under the new combination Scytalidium dimidiatum. Although Sutton and Dyko include S lignicola in with S dimidiatum, our isolate appears to be distinct from S lignicola. It conforms to form 1 of S synanamorph subspecies of H toruloidea described by Moore. We chose Scytalidium dimidiatum for convenience in using a binomial system and because it encompasses our isolate.

The natural habitat of the fungus is woody plants and it causes wilt and branch dieback disease, this perhaps explains how our patient contracted the organism following the plant thorn trauma to his eye.

As cited by Moore, there are several reports in the literature of the organism being sensitive in vitro to a number of antifungal agents including amphotericin B, natamycin, clotrimazole, miconazole, econazole, nystatin, and terbinafine; however, the clinical response generally has been poor. This may also explain the lack of response to treatment in our patient.

Displaced intraocular lens repositioning using a reversed 10-0 straight polypropylene needle lasso technique

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Displacement of a posterior chamber intraocular lens (PC-IOL) may be a serious complication and surgical repositioning or replacement may be required. Repositioning of a PC-IOL with suture fixation may be necessary and a number of techniques have been described. Recently, pars plana entry site techniques have used vitrectomy with PC-IOL repositioning through a single sclerostomy incision. We have employed a reverse suture technique using a straight needle, which is easily manipulated and allows rotational lassoing within the eye. Repositioning and suture fixation are performed using only one sclerostomy entry site.

Case reports

CASE 1
A man with previous ocular blunt trauma, angle recession, and cataract underwent left extracapsular cataract extraction with PC-IOL implantation. Absent zonules were noted from 1 to 3 o'clock and anterior vitrectomy was performed with a PC-IOL placed into the ciliary sulcus with haptics at 5 and 11 o'clock. Fixation was not stable, however, the PC-IOL being displaced inferiorly on the first postoperative day with the superior lens haptic visible in the pupil. The lens was repositioned by the reverse suture technique (see Fig) using a 10-0 polypropylene suture (13049 Lewis SC-5/AUM 10-0 12 inch polypropylene, Alcon) mounted on a straight needle. This was successful, with 6/9 best visual acuity and good lens centration, which has been maintained over a 9 month postoperative review period.

CASE 2
A man had extracapsular cataract extraction with
Scytalidium dimidiatum fungal endophthalmitis.


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