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BIPOLARIS SPICIFERA: AN EMERGING FUNGAL CAUSE OF CORNEAL ABSCESS LEADING TO LOSS OF VISION

Microbiology

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ABSTRACT

Dimatiaceous fungi are gaining importance as emerging agent for ocular infections. Purpose of this report is to report a rare case of corneal abscess by Bipolaris spicifera. Processing of the sample was done as per standard microbiological methods for fungi. Early diagnosis, proper understanding of fungi, host factors can reduce morbidity and improve patient's outcome.

KEYWORDS

Dimatiaceous fungi, Corneal abscess, Bipolaris spicifera

INTRODUCTION

Dimatiaceous fungi are characterized by presence of pale to brown color melanin like pigment in the cell wall of mycelium. Bipolaris is frequent cause of Phaeohyphomycosis casing sinusitis, peritonitis, meningitis and Bipolaris is 3 rd common causative agents for keratomycosis.(1-3). Dimatiaceous fungi are gaining importance as emerging agent for ocular infections. (1) Bipolaris spicifera is a darkly pigmented fungus commonly found in plant material, particularly grasses. There are very few reports of ocular infections by Bipolaris spicifera. We are hereby reporting a rare case of corneal abscess by Bipolaris spicifera.

CASE HISTORY

A 80 year-old male patient presented with history of loss of vision in left eye since 1 month in ophthalmology opd. Patient was farmer by occupation but when asked for history of trauma to eye the patient was not able to recall history of any. The patient had no other predisposing factors such as diabetes, topical steroid use, or immunocompromised state. On examination, there was mild lid edema, congested conjunctiva, and impaired vision. Slit lamp examination showed corneal abscess measuring 7x 4 mm, lipid deposit at 11 o'clock position with streak hypopyon and satellite lesions. The corneal abscess seemed to be refractory to medications thus corneal scraping samples were collected aseptically by Ophthalmology resident and sent for mycological study. Gram staining showed few septate hyphae. On KOH mount dark colored septate hyphae seen. Fasting blood sugar was normal, and HIV antibody test was negative.

On culture growth was rapid (2 days), white mycelial colony turning to gray black with black to brown pigmentation on reverse after further incubation.Lactophenol cotton blue preparation (LPCB) of the growth from SDA showed brown septate hyphae with sympodial geniculate conidiophores, bearing multicellular conidia with thick transverse septa. The isolate was identified as Bipolaris species by demonstration of formation of germ tube from both poles of macroconidia, extending parallel to its long axis after incubation of spores in distilled water for 2–4 h at room temperature. The species was identified as Bipolaris spicifera on the basis of morphology of conidia, which showed predominantly three transverse distosepta and four cells. A flattened hilum was seen on the basal cells.

Patient was initially started on local voriconazole drops, oral Fluconazole and therapeutic penetrating keratoplasty was planned but the patient was not willing to undergo the procedure. Unfortunately the abscess burst with complete loss of vision.

DISCUSSION

Bipolaris is a dematiaceous or darkly pigmented fungus that causes phaeohyphomycosis in humans rarely. (4) The most frequently reported species are B. spicifera, B. australiensis, and B. hawaiiensis. (5) Trauma by vegetative matter is frequent cause of mycotic keratitis with risk of involvement or loss of vision. Fungal keratitis, abscess pose great challenge to ophthalmologist thus, early isolation and identification of causative agent contribute for early establishment of diagnosis and preventing loss of vision by early administration of antifungal agents. Dematiaceous fungi accounts for 7–16% of the cases of keratomycosis. (6) There are limited reports on Bipolaris spicifera as a cause of keratomycosis in the literature. Bipolaris species occasionally have been reported to cause ocular infection like endophthalmitis (7) and asymptomatic fungal cyst of conjunctiva. (8) Santosh Patil et al (2011) reported case report on corneal absecess caused by Bipolaris spicifera. (9)

CONCLUSION AND RECOMMENDATIONS

Bipolaris spicifera is a unusual cause of corneal phaeohyphomycosis. History and clinical findings are of diagnostic clue, however microbiologic studies are essential to get a certain diagnosis. Antifungal medications and debridement are the mainstay of most corneal fungal infection, therapeutic penetrating keratoplasty can prevent morbidity related to this fungal infection.

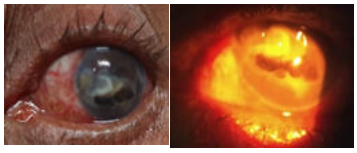

Figure 1 On examination left eye showing feathery whitish infiltration with corneal abscess measuring 7x 4 mm, lipid deposit at 11 o'clock position with streak hypopyon and satellite lesions

Figure 2 KOH mount preparation showing dark colored septate hyphae.

Figure 3 Bipolaris spicifera colony on SDA obverse showing white mycelial colony turning to gray black with black to brown pigmentation on reverse

Figure 4 Lactophenol Cotton Blue preparation of fungal colony showing brown septate hyphae with sympodial geniculate conidiophores, bearing multicellular conidia with thick transverse septa, macroconidia showed predominantly three transverse distosepta and four cells.

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