



A Rare Case Report of Fungal Keratitis Caused by *Curvularia Lunata* in Rural District of Kancheepuram

Dinesh Kaliyamoorthi

Assistant Professor, Department of Microbiology, Shri Sathya Sai Medical College and Research Institute, Thiruporur, Kancheepuram District.

Divya. G

Tutor, Department of Microbiology, Shri Sathya Sai Medical College and Research Institute, Thiruporur, Kancheepuram District.

ABSTRACT

*Fungal infections of the eye are an emerging threat because of its extensive cause of morbidity. A 43 year old man presented with left corneal ulcer with a history of trauma with sand particles. Corneal scrapping from the pigmented ulcer showed numerous distinctively curved macroconidia with dark oval marking on separation, suggestive of *Curvularia lunata*. Patient general condition improved drastically after starting on Amphotericin B and Pimaricin 5% solution.*

KEYWORDS :

INTRODUCTION:

Fungal infections of the eye are an emerging threat because of its extensive cause of morbidity. *Aspergillus* and *Fusarium* are long recognized as ocular pathogens but recently the dematiaceous hyphomycetes have emerged as important opportunists in causing fungal keratitis. We present a case of pigmented corneal ulcer found to be infected with *C.lunata* which was not previously report in our rural kancheepuram district.

CASE REPORT:

A 43-year-old man came to the hospital in April 2015 with a month's history of a painful non-resolving left corneal ulcer. He has developed the ulcer during his work where he had a history of trauma with minute sand particles; he also gives a history of rubbing immediately after the trauma. There was no complaint in the right eye. There was no previous ophthalmic history. The local practitioner diagnosed the ulcer and started treatment with topical antibiotics.

The patient was referred to our hospital Shri Sathya Sai Medical College and Research Institute ophthalmology department for further treatment as he was not cured of his lesion. The corneal ulcer was treated with Ciprofloxacin, Gentamicin and Betamethasone four times a day. At the time his visual acuity was 6/9 in left eye and 6/12 in the right eye.

On examination there was an area of peripheral corneal ulceration at 3 o'clock measuring about 2.0 mm × 1.3mm in size with an overlying hard plaque formation showing black coloured pigmentation. Right eye was normal.

Corneal scrapping from the pigmented region was done and the sample was sent to the central microbiology lab. Grams staining and KOH mount was performed. It revealed the presence of fungal elements. (FIGURE: 1)

The sample was then inoculated on to two SDA tubes and incubated at 37°C and 30°C. After 7 days of incubation, dark brown to black hairy, velvety textured colonies grew on SDA at 30°C but the growth was sparse at 37°C. (FIGURE:2)

Microscopically Lacto phenol cotton blue (LBCP) mount illustrated septate mycelium with simple, curved branched conidiophores and numerous distinctively curved macroconidia. They were dark oval markings on separation, had three septate with center septum truly median and darker than the other two. (FIGURE: 3). It was identified as *Curvularia lunata*.

Patient was started on Amphotericin B, Itraconazole, and Clotrimazole, and after 4 weeks of antifungal treatment the epithelial defect had healed completely. The patient's final visual acuity was 6/12.

FIGURE: 1 KOH mount showing fungal element

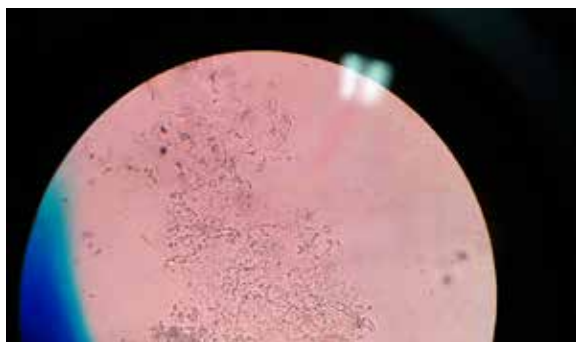


FIGURE: 2 Fungal growth on SDA at 30°C & 37°C

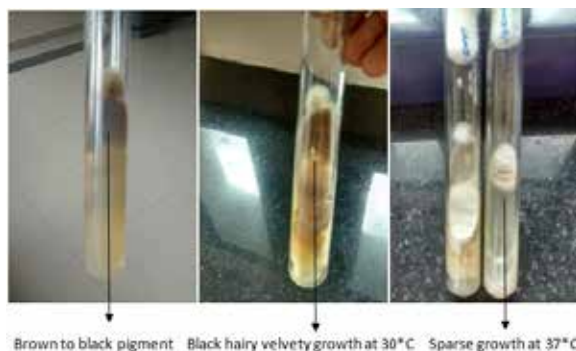
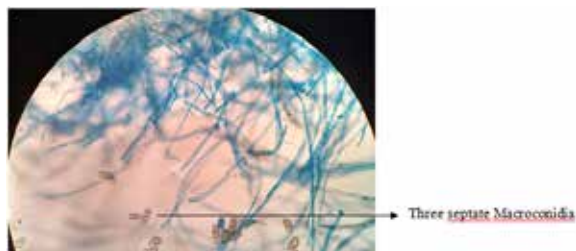


FIGURE: 3 Microscopic appearance of Macroconidia



DISCUSSION:

Curvularia spp is a saprotrophic dematiaceous filamentous fungi frequently seen in air, soil and on plants. Initially it was considered as non-pathogenic or thought to affect humans only rarely, but these fungi are now increasingly being reported to cause human disease

⁽¹⁾. *Curvularia* spp. is frequently associated with allergic sinusitis ⁽²⁾, although several cases of ocular infections such as keratitis ⁽³⁾, or endophthalmitis ⁽⁴⁾ have also been reported. *Curvularia* is the most common fungi isolated from corneal ulcer ^(5,6,7) and accounts for about 4% to 9% of all fungi, isolated from patients with mycotic keratitis in hot zones.

There are seven species of *Curvularia* have been involved in human infections. Among which *C. lunata*, was commonest one isolated from corneal ulcers of Keratomycosis cases in tropical and subtropical areas, where it accounts for 6% of mycotic ulcers. In addition to these species *C. geniculata*, *C. pallescens*, *C. brachyspora* and *C. senegalensis* have also been isolated from eye infections ^(8, 9, 10).

Fungal keratitis is rare in rural area of Kanchipuram, accounting for about 1 % of suppurative keratitis presenting to our hospital. The incidence of fungal keratitis is much higher in tropical or subtropical regions and it is mainly due to the climatic condition in the tropical regions and agricultural population present in these areas. *Aspergillus* is found to be the most common fungus causing keratitis in India ⁽¹¹⁾, Saudi Arabia ⁽¹²⁾ and Bangladesh ⁽¹³⁾, followed by *Fusarium* species, *Curvularia* species (6-8%) and *Candida* species. This is mainly due to the agricultural trauma and washing in contaminated water. In North Indian climates fungal keratitis is less common.

Keratitis caused by *Curvularia lunata* can be successfully treated with Amphotericin B and Pimaricin 5% solution ⁽¹⁴⁾. In our rural kancheepuram there is no previous case of *Curvularia lunata* keratitis have been reported, although it is well recognized in other parts. In our case there was a history of agricultural activity along with trauma due to dust particles which has predisposed the infection. This case brought the importance of recognizing and identifying the fungal infection, as use of antifungal agents can reduce the morbidity.

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