

Case Report

COLLETOTRICHUM TRUNCATUM- UNUSUAL PATHOGEN OF KERATITIS- A CASE REPORT

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ABSTRACT

keratitis caused by rare fungi poses a diagnostic challenge. Colletotrichum species belonging to class Coelomycetes are emerging as important opportunistic fungi causing soft tissue infections. *Colletotrichum truncatum* is one such fungus mainly causing anthracnosis in soya bean plant. Here we report a case of keratitis caused by *Colletotrichum truncatum* following an injury by sugar cane leaf in an immunocompetant individual.

Keywords: Keratitis, *Colletotrichum Truncatum*

INTRODUCTION

Corneal infections are leading cause of ocular morbidity. Around 6.5 million people are affected and 1.3 million eyes become blind due to corneal ulcer every year. 0.9% of blindness is due to Corneal opacity. Early diagnosis and treatment go a long way in preventing the complications like hypopyon formation, perforation, endophthalmitis and loss of vision. Advances in antimicrobial therapy and surgical techniques have improved their prognosis. Among different causes fungi are emerging as important pathogens. Mycotic keratitis was first reported in 1879 (Norman, 1971) since then many hyphomycetes, yeasts, Zygomycetes have been reported as cause of mycotic keratitis (Ajello and Wilson, 1998). The aetiologic fungi vary in geographical area as factors like, climate, socioeconomic conditions, occupation of the patient play important role. Among hyaline hyphomycetes *Aspergillus* and *Fusarium* spps, and among phaeoids, *Curvularia* spps are commonly associated with mycotic keratitis (Gopinath *et al.*, 2002). Fungal keratitis constitute large proportion of cases in developing countries, these infections can cause devastating damage if allowed to progress unchecked. Therefore prompt recognition, aggressive therapy of fungal infections are extremely important.

Keratitis due to *Colletotrichum truncatum* is rare, review of literature showed a single report of five cases from PGIMER, Chandigarh (Shivprakash *et al.*, 2011). Here we report a case of corneal ulcer due to *Colletotrichum truncatum*.

Colletotrichum was first reported by Tode (1760) in the genus *Vermicularia*. *Colletotrichum* itself was introduced by Corda (1831) and is now known to comprise “coelomycetes” with a *Glomerella* teleomorph stage. It encompasses species with endophytic, epiphytic, saprobic and phytopathogenic lifestyles as well as human pathogens. *Colletotrichum* is one of the most economically important genera of fungi causing anthracnose disease affecting a wide host range, especially on tropical and subtropical crops as well as fruit trees. Above ground plant parts like stem, leaves, flowers, and fruits can be affected (Hyde *et al.*, 2009).

CASES

A 60 year old female was admitted in the department of Ophthalmology, SCSM General Hospital Solapur in August 2010, with complaints of pain, redness, watering and diminished vision in the right eye following the trauma by sugarcane leaf in the farm 15 days ago. She was not diabetic, did not have cardiac problems. She had never used contact lenses nor instilled any medication in the eye.

Patient was moderately built woman, whose systemic examination did not reveal any abnormality. She was conscious, well oriented, coherent and afebrile. Complete Haemogram and blood chemistry results were within normal range.

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On examination visual acuity in the right eye was reduced to perception of hand movements with accurate projection of rays. The right eye showed oedema of both eyelids, circum –corneal congestion. Slit lamp bioscopy further showed a kidney shaped ulcer involving the centre and infero –temporal quadrant of the cornea measuring about 6mm X 3mm with surrounding corneal oedema. The ulcer had feathery edges and the base of the ulcer was covered with yellowish white creamy exudates. The anterior chamber showed a streak of hypopyon. The pupil was of normal size and reacting to light. The lens appeared clear and ophthalmoscopic examination showed red fundus glow. The left eye was normal with visual acuity of 6/6. The provisional diagnosis of right eye fungal keratitis was made.

Corneal scrapings were taken under slit lamp by the ophthalmologist using sterile no-15 Bard Parker blade after instillation of 4% lignocaine without preservative. Scrapings were taken from the margins and base of the ulcer. Scraped material was taken on three glass slides for KOH, Lactophenol Cotton blue and gram staining. The scraped material was inoculated on 5% Sheep blood agar, Sabouraud's dextrose agar without antibiotics (two slants) and Brain Heart Infusion agar.

She was explained the condition along with prognosis and put on oral ciprofloxacin (500mg BD), Tablet Fluconazole (150 mg BD). Locally fortified Gentamycin eye drops (2 hourly), Fluconazole eye drops (2 hourly), Natamycin (5%) hourly and atropine (1%) eye drops QID.

One inoculated sabouraud dextrose agar slant was incubated at 37⁰ C and the other at room temperature (25⁰C). Inoculated 5% sheep Blood agar was incubated at 37⁰ C. 10% KOH and LCB mount showed branching septate hyaline hyphae. Gram stain revealed pus cells and fungal elements.

Sabouraud Dextrose agar incubated at 25⁰C showed growth after 7 days. Initially colonies were grayish, wooly, which on further incubation turned brownish black, reverse also turned black. They consisted of numerous black granules (sclerotia). Then the fungus was subcultured on Potato Dextrose agar (PDA). Lactophenol blue preparation of Slide culture using PDA showed the hyaline septate branched hyphae and presence of appressoria. Saucer shaped falcate, non septate, uninucleate conidia and acervular conidiomata with characteristic erect unbranched darkly pigmented setae. Perithecia was obpyriform, Asci were cylindrical with eight ascospores arranged linearly. Paraphyses were observed in crush mounts. Based on colony morphology and microscopic observations identification of *Colletotrichum* spp was made. The strain was sent to Department of Mycology, PGIMER, Chandigarh, who confirmed the strain as *Colletotrichum truncatum*. They had confirmed it by sequencing of internal spacer regions of ribosomal DNA.

Antifungal susceptibility was undertaken as per CLSI guidelines M38-A2. Discs and media were obtained from Hi-Media. The minimum inhibitory concentrations for amphotericin, ketoconazole and itraconazole after 72 hours were 0.5 µg/ml, 1 µg/ml and 0.5 µg/ml respectively

The patient responded to the treatment with disappearance of hypopyon and improvement in the ocular signs and symptoms. The patient was discharged on request after nine days of treatment. She did not come for follow up.

DISCUSSION

Filamentous fungi in the genus *Colletotrichum* are mainly pathogens of plants having worldwide importance causing diseases of wide range of economic crops and ornamental plants. It is one of the most studied genera of phytopathogenic fungi. *Colletotrichum* spp are known cause disease of proteaceae (Lubbe *et al.*, 2004). *Colletotrichum gleosporioides* are associated with diseases of banana and chilli plants. *Colletotrichum dematium* is associated with diseases of tomato, mulberry and soya bean plants (Hyde *et al.*, 2009). *Colletotrichum truncatum* is isolated from Soya bean plants (Jagtap and Sontakke, 2009). These plants may act as source of infection to man. In recent years ophthalmic infections from different species of this fungus are reported. Pathogenicity of this fungus is demonstrated by Manire *et al.*, (2002) in the animal Ridley Sea Turtle and Shukla *et al.*, (1983) in Rabbit eye (Manire *et al.*, 2002; Shukla *et al.*, 1983).

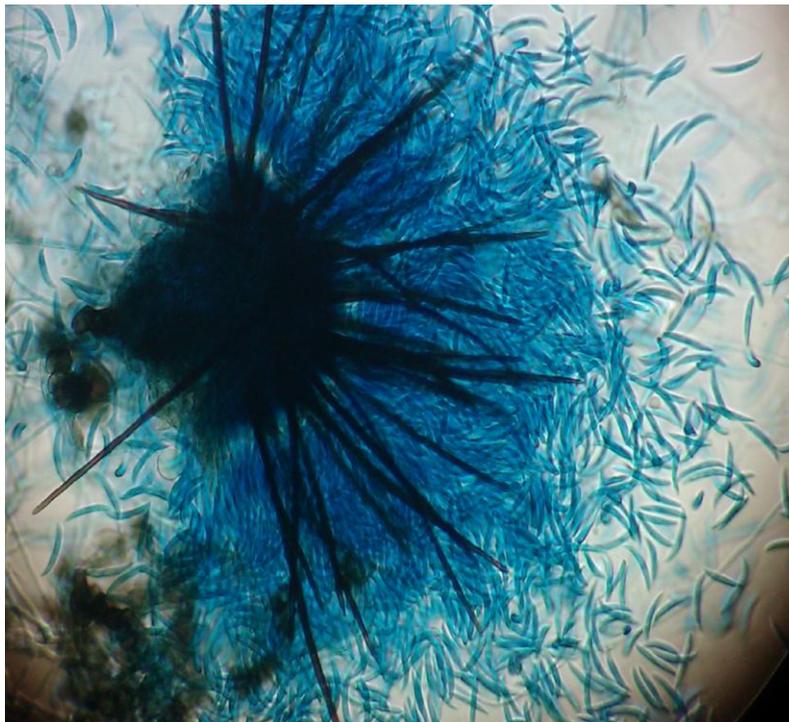
Marangon *et al.*, (2004) from Florida, USA in their analysis of 419 cases of keratitis and 122 endophthalmitis cases found *Colletotrichum* spp as fifth most common mould (4.1%) (Marangon *et al.*,

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2004) Fernandez *et al.*, (2002) also from Florida, USA, found Colletotrichum in 10 of 360 cases (Fernandes *et al.*, 2002). Song *et al.*, (2006) found Colletotrium keratitis in Korea followed by injury from rice leaves (Song *et al.*, 2006).

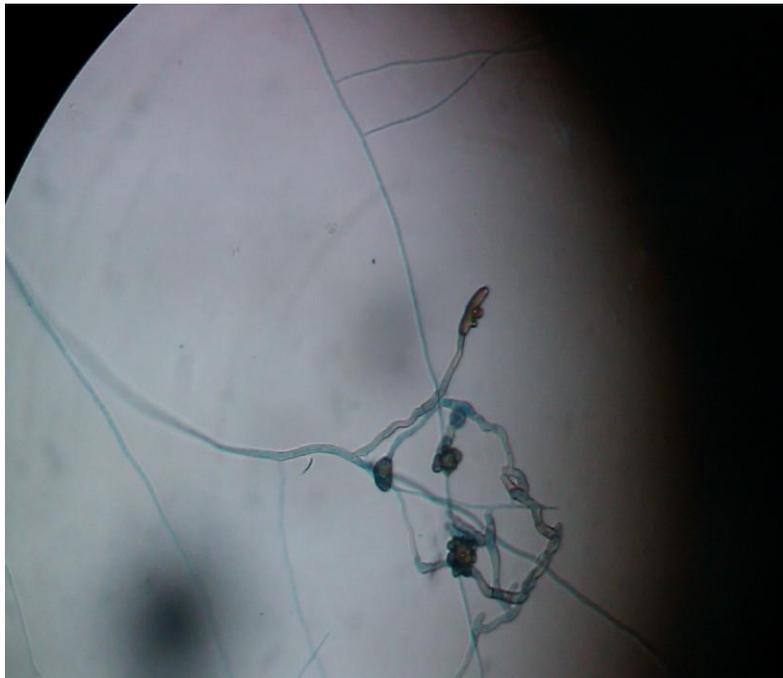


Culture of Colletotrichum truncatum



LCB mount of Colletotrichum truncatum

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Appressoria of *Colletotrichum truncatum*

Yamamoto *et al.*, (2001) has described the fungal keratitis caused by *Colletotrichum gloeosporioides* from a 82 year old man with myelodysplastic syndrome (Yamamoto *et al.*, 2001). Giaconi *et al.*, (2004) reported two cases of keratitis due to *Colletotrichum dematium* (Giaconi *et al.*, 2006), which did not respond to voriconazole. Fernandes *et al.*, (2002) from Hyderabad reported keratitis from *Colletotrichum dematium* following stone injury, again this fungus was reported next year by Mendiratta *et al.*, (2005) from Wardha in a case of keratitis following injury from a branch of Soya bean plant (Fernandes and Sharma, 2004; Mendiratta *et al.*, 2005). Chakrabarti *et al.*, (2008) in their data analysis of Fungal keratitis of 14 years found *Colletotrichum dematium* (Chakrabarti *et al.*, 2008).

Ritterband *et al.*, (1997) reported first case of Corneal infection by *Colletotrichum graminicola* from New York as a post operative complication (Ritterband *et al.*, 1997). Yegneshwaran *et al.*, (2010) reported the same fungus from Manipal, India, who had no history of previous trauma (Yegneshwaran *et al.*, 2010).

Shivprakash *et al.*, (2011) reported five cases of mycotic keratitis due to *Colletotrichum truncatum*, which is the only report we came across from this fungus.

Thus the spectrum of fungi causing corneal infection is increasing. May be due to increased knowledge and advances in diagnostic tools. Since *Colletotrichum* keratitis responds to natamycin and azoles, its early identification definitely helps in the patient management and prevention of blindness.

ACKNOWLEDGEMENT

Authors are thankful to Dr. Arunaloke Chakrabarti and his team at PGIMER, Chandigarh, for confirming our strain.

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