

## LETTER TO EDITOR

**Ocular Geotrichosis**Rohini Suryawanshi<sup>\*</sup>, Shantanu Deo, Milind Suryawanshi<sup>1</sup>Wanless Hospital, Miraj-416410(Maharashtra) India**Abstract**

We report a case of *Geotrichum candidum* infection in a 45 year old male patient with diabetes mellitus and traumatic corneal ulcer. *Geotrichum candidum*, yeast of low virulence, is an emerging pathogen associated with infections in immune-compromised individuals but it is a rare cause of keratitis.

**Keywords:** *Geotrichum candidum*, Fungal keratitis

**Introduction:**

*Geotrichum candidum* is a fungus which is a saprophyte and is found on a variety of fruits and vegetables. It is believed to be part of the normal skin and gut flora. It affects immune-suppressed people with systemic diseases like diabetes mellitus and those with neoplasms [1]. Clinically it is similar to candidiasis and may cause oral, vaginal, skin or systemic infection. There are a few reports in literature in which *Geotrichum* has invaded normal tissue. Disseminated infection has also been reported in literature in patients with malignancy [2].

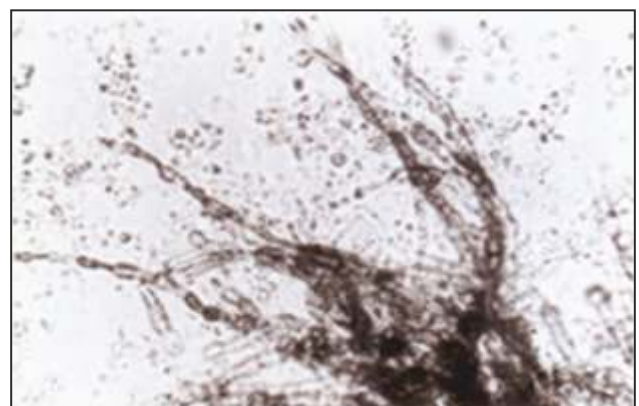
**Case Report:**

A 45 year old male patient, known diabetic on irregular treatment presented with pain, watering and redness of right eye for 18days. There was history of trauma with a wooden stick to the right eye one month back. He had an episode of fever lasting for 2 days before the onset of ocular symptoms.

On examination, visual acuity in right was counting fingers close to face. The eye was congested and a corneal ulcer measuring 5mm x 6mm in inferior-temporal quadrant of the cornea

was seen. A blackish brown mass was covering the ulcer. Anterior chamber had hypopion measuring 3mm in height. Anterior chamber was shallow. Pupil was peaked towards inferio-temporal side with iris incarcerated in the ulcer suggesting corneal ulcer was already perforated at the time of examination. Lens was normal and in place.

After anaesthetising cornea and conjunctival sac with proparacain 0.5% solution (Paracain, Sunways, India), the mass was scrapped with 15 number surgical blade and was sent for microbiological study. 10% KOH mount showed bunch of cylindrical, barrel shaped cells measuring 4-5 micron in diameter. The hyphae and lateral branches were septate with presence of arthrospores as shown in (Fig.1). Gram staining showed gram positive, barrel shaped cells as shown in (Fig 2).



**Fig.1: Hyphal Forms and Arthrospores in 10% KOH Mount X 400**



**Fig.2: *Geotrichum candidum* in Gram Staining X 1000**

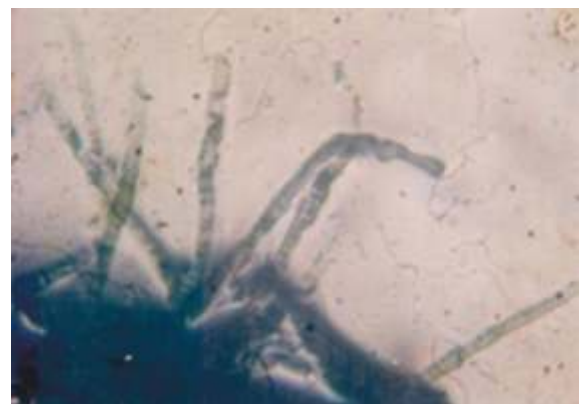
White to cream colonies which later on became hairy colonies was grown on blood agar, chocolate agar and MacConkey agar. The growth was scanty at 37° C but grew well at room temperature. On Sabouraud's dextrose agar slant colonies were, white to cream, dry and finely suede-like with no reverse pigment grew fast after 48 hours incubation at room temperature (Fig 3).



**Fig. 3: Sabouraud's Dextrose Agar Slant Showing White to Cream, Dry Hairy Colonies after 48 Hrs**

The smear from the colony showed arthroconidia with septate hyphae and no blastoconidia in LPCB mount (Fig.4). This yeast like fungus did not ferment sugar but assimilated glucose, galactose and xylose. It was also urease negative. His blood investigations were normal except fasting blood sugar was 150 mg/dl and post prandial was 320 mg/dl at the time of first visit. He was non reactive for HIV I and II antibodies by ELISA.

Patient was treated with local instillation of natamycin 5% eye drops six times a day (Natoptic, FDC India) and tablet fluconazole 150 mg per day for 1 month (Zocon FDC, India). To treat suspected associated bacterial infection moxifloxacin 0.5% eye drops (Mosi, FDC India) were given four times a day for 15 days. Atropine 1% eye drops (Atrosulph, Entod India) three times a day were instilled to relieve ciliary spasm. Repeat sample taken after eight days grew same colonies on Sabouraud's dextrose agar. After one month treatment, corneal ulcer healed completely leaving behind a dense corneal opacity in inferior temporal quadrant with iris adhesion on its posterior part. Vision was counting finger at five meter.



**Fig. 4: Smear from Colony Showing Arthroconidia with Septate Hyphae in LPCB mount**

**Discussion:**

*Geotrichum candidum* is an ubiquitous saprophyte which belongs to the class Hemiascomycetaceae, order Saccharomycetales family Dipodascaceae found on a variety of fruits and vegetables. It is part of the normal skin and gut flora. It affects immuno-suppressed people due to diabetes mellitus, tuberculosis, neoplasms, AIDS and those on long term steroid therapy. Clinical presentation is similar to candidiasis with superficial oral, vaginal, skin infections or systemic infection invading deeper tissues. Disseminated infection has been reported in patients with malignancy. Lungs are affected commonly but ulcerative lesions and septicaemia are also reported [1, 2]. In eye keratitis and dacryocystitis has been reported [3, 4].

Mycotic keratitis is important cause of blindness worldwide. A wide spectrum of fungi implicated in causation of proved cases of fungal keratitis suggested *Aspergillus* and *Fusarium* were common species [5, 6]. To the best of our

knowledge only single case where *Geotrichum candidum* was part of polymicrobial keratomycosis is been reported [3]. The reason for this could be mistaking it for candidiasis and thus making it under-or wrongly diagnosed.

Since, *Geotrichum candidum* is ubiquitous in man's environment, mere isolation of the fungus from any specimen does not establish the diagnosis. It has to be co-related with demonstration of the fungus on the culture or confirmed by repeated isolation from specimen. We were able to demonstrate the hyphal forms and arthrospores in the repeat sample after eight days. Culture on Sabouraud's dextrose agar also showed similar colonies after inoculating the repeat specimen.

Accurate identification of causative organism in mycotic keratitis is of paramount importance in planning treatment strategy so that not only will it reduce ocular morbidity but will prevent mortality in immune-compromised patients.

**References:**

- 1 Bonifaz A, Vazquez-Goanzalez D, Macias B, Parades-Farrera F, Hernandez M A, Araiza J, Ponce RM. Oral Geotrichosis: report of 12 cases. *J Oral Sci* 2010; 52(3):477-483.
- 2 Rippon JW. Medical mycology: the pathogenic fungi and pathogenic actinomycetes. 2<sup>nd</sup> Edition, WB Saunders co. Philadelphia 1882; 642-645.
- 3 Parentin F, Liberali T, Perissutti P. Polymicrobial keratomycosis in a three-year-old child. *Ocul Immunol Inflamm* 2006; 14(2):129-131.
- 4 Hanada K, Miyokawa N, Sano A, Iqarashi S, Yoshida A. Fungal dacryocystitis with cacosmia after penetrating keratoplasty-taxonomy and identification of pathogenic fungi based on DNA sequence analysis. *Nihon Ganka Gakkai Zasshi* 2012; 116(12):1144-1149.
- 5 Nath R, Baruah S, Saikia L, Devi B, Borthakur A K, Mahanta J. Mycotic corneal ulcers in upper Assam. *Indian J Ophthalmol* 2011; 59(5):367-371.
- 6 Punia R S, Kundu R, Chander J, Arya S K, Handa U, Mohan H. Spectrum of fungal keratitis: clinicopathological study of 44 cases. *Int J Ophthalmol* 2014; 7(1):114-117.

\*Author for Correspondence: Dr. Rohini Suryawanshi, Arpan, Plot no. 12, Rama Udyan, Pandharpur road, Miraj-416410, Maharashtra, India Cell: 9881626940, Email: rohini178@yahoo.co.in