

Commentary: *Pseudopestalotiopsis theae* keratitis

Fungi are important causes of keratitis, especially in countries with a tropical climate. The organism group accounts for nearly 40% of all isolates from corneal ulcer cases.^[1,2] In the last decade, we have witnessed a lot of interest in the study of infections caused by fungi. The outbreak of *Fusarium* keratitis in contact lens users probably provided stimulus in generating this interest and necessary financial support. One of the fields that got attention of researchers is improvement in the identification of fungal isolates.

Classically, most laboratories use culture characteristics and morphology of spores for the identification of fungal isolates. Unfortunately, samples positive for fungus on microscopic examination might fail to grow on culture. Further, colonies on culture media might fail to sporulate. Both these factors result in a significant proportion of fungi remaining unidentified or isolates identified to the genus level only.

It is increasingly being recognized that accurate diagnosis of fungi to species level will throw new light in understanding the epidemiology, drug susceptibility, and treatment outcomes of mycotic keratitis cases. The most commonly used technique for species identification is sequence-based molecular identification, wherein a fragment from a specific locus is amplified by polymerase chain reaction (PCR), followed by the analysis of the resulting sequence with a nucleotide–nucleotide BLAST search in the nucleotide sequence collection of the National Center for Biotechnology Information (NCBI). The locus most frequently applied for species identification is the internal transcribed spacer (ITS) region of the ribosomal RNA gene cluster (rDNA). The application of this approach has resulted in the identification of several uncommon fungi from keratitis cases. Prominent among these isolates are *Lagenidium* and *Pythium* species from the Oomycota division.^[3]

Using these techniques, an Indo–Hungarian Fungal Keratitis (IHFK) Working Group demonstrated an impressive phylogenetic diversity of the genus *Fusarium* causing human keratomycosis in South India.^[4] The diversity was reflected in antimicrobial susceptibility as well. The group highlighted the need for species-level identification of fungal isolates both for understanding precise epidemiology as well as appropriate drug treatment.

In this issue of the journal, you will find an article^[5] where authors described a case of keratitis caused by a plant pathogen *Pseudopestalotiopsis theae*. The organism belongs to Pestalotiopsis group that contains two genera *Neopestalotiopsis* and *Pseudopestalotiopsis*.

This is probably the first report of human infection caused by the organism and the precise identification was possible because of the use of molecular technique. The case reiterates the importance of definitive diagnosis of fungal isolates to species level.

To conclude, because in India fungi play an important role in the causation of keratitis, a potentially blinding disorder, it is time that few well-established laboratories must start adopting techniques that help identifying fungal isolates to species levels on a routine basis. This combined with antimicrobial susceptibility will help better define the epidemiology, medical management, and help understand the causes of treatment failure besides identifying uncommon pathogens.

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References

1. Shah A, Sachdev A, Coggon D, Hossain P. Geographic variations in microbial keratitis: An analysis of the peer-reviewed literature. *Br J Ophthalmol* 2011;95:762-7.
2. Kredics L, Narendran V, Shobana C, Group I-H. Filamentous fungal infections of the cornea: A global overview of epidemiology and drug sensitivity. *Mycoses* 2015;58:243-60.
3. Sharma S, Balne PK, Motukupally SR, Das S, Garg P, Sahu SK, et al. *Pythium insidiosum* keratitis: Clinical profile and role of DNA sequencing and zoospore formation in diagnosis. *Cornea* 2015;34:438-42.
4. Hassan AS, Al-Hatmi AM, Shobana CS, Group I-H. Antifungal susceptibility and phylogeny of opportunistic members of the genus *Fusarium* causing human keratomycosis in South India. *Medical Mycology* 2016;54:287-94.

5. Sane S, Sharma S, Konduri R, Fernandes M. Emerging corneal pathogens: First report of *Pseudopestalotopsis theae* keratitis. Indian J Ophthalmol 2019;67:150-2.

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