



Mystery Case #3 | Eyeballs are Gross

Discussion

- ***Curvularia spp*** – a dematiaceous filamentous fungi. Produces rapidly growing, wooly colonies
- Fungal keratitis is much less common than bacterial or viral – generally 5 to 10% of corneal infections in the US
- Most common fungal species implicated in US studies are *Fusarium*, *Candida*, *Aspergillus*, *Curvularia*
- More common in warm/humid environments (Helloooo, South Texas!)
- Topical corticosteroid use may increase the risk of fungal keratitis

**CLUE
#4**



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TABLE 113.1 Partial List of Causative Agents in Microbial Keratitis

Bacteria

Gram-Positive Cocci

Staphylococcus aureus
Staphylococcus epidermidis
Streptococcus pneumoniae, *Streptococcus pyogenes*, *viridans streptococci*
Enterococcus faecalis
Peptostreptococcus spp.

Gram-Positive Bacilli

Bacillus coagulans, *Bacillus cereus*, *Bacillus licheniformis*
Brevibacillus (Bacillus) brevis, *Brevibacillus (Bacillus) laterosporus*
Corynebacterium diphtheriae
Clostridium perfringens, *Clostridium tetani*

Gram-Negative Coccobacilli

Neisseria gonorrhoeae
Moraxella lacunata, *Moraxella nonliquefaciens*, *Moraxella catarrhalis*
Acinetobacter calcoaceticus
Pasteurella multocida
Achromobacter xylosoxidans

Gram-Negative Bacilli

Pseudomonas aeruginosa, *Pseudomonas stutzeri*, *Pseudomonas fluorescens*
Burkholderia (Pseudomonas) mallei
Proteus mirabilis
Serratia marcescens
Escherichia coli
Klebsiella pneumoniae
Morganella morganii
Aeromonas hydrophila
Bartonella henselae

Mycobacteria

Mycobacterium tuberculosis, *Mycobacterium chelonae*, *Mycobacterium gordonae*, *Mycobacterium mucogenicum*

Actinomycetes

Nocardia spp.

Spirochetes

Treponema pallidum
Borrelia burgdorferi

Viruses

Herpes simplex virus
Varicella-zoster virus
Adenovirus
Vaccinia virus
Epstein-Barr virus
Rubeola
Enteroviruses
Coxsackievirus

Fungi

Fusarium spp.
Candida spp.
Aspergillus spp.
Acremonium spp.
Alternaria spp.
Penicillium spp.
Bipolaris spp.
Nosema spp.
Vittaforma (Nosema) corneae
Encephalitozoon spp.
Edenia gomezpompae
Exophiala phaeomuriformis

Chlamydia

Chlamydia trachomatis

Parasites

Acanthamoeba polyphaga, *Acanthamoeba castellanii*
Onchocerca volvulus
Leishmania brasiliensis
Trypanosoma spp.

**CLUE
#4**



Mystery Case #4 | Eyeballs are Gross

Discussion (cont.)

- Treatment options are limited — topicals include natamycin (commercially available), and amphotericin B or voriconazole (compounded by your pharmacy)

CLUE #4

- Important to note that this patient's polymicrobial infection confers a higher risk of treatment failure
- **What treatment would you recommend?** Would you give oral antifungals as well?



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Key Points

- Fungal keratitis is a diagnostic and therapeutic challenge – often difficult to establish the diagnosis, isolate the causative agent

CLUE #4

- Management is challenging in part because of limited commercial availability of topical antifungals
- Consider a polymicrobial infection for patients who aren't improving as expected – delayed diagnosis in fungal keratitis is common, often because there simply isn't suspicion for it