

## Case Report

# A case report of pregnant female with right eye acromonium keratitis

Vaibhavee Noticewala\*, Manisha Shastri, Rupalee Desai, Khushnood Sheikh

Department of Ophthalmology, SMIMER Medical College, Surat, Gujarat, India

**Received:** 03 May 2017

**Revised:** 04 August 2017

**Accepted:** 18 August 2017

### \*Correspondence:

Dr. Vaibhavee Noticewala,

E-mail: Vaibhavi.noticewala@gmail.com

**Copyright:** © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

### ABSTRACT

Study report a case of a 22-years-old female with history of vegetative trauma in right eye with 7<sup>th</sup> running months of amenorrhoea (RMOA). She came after 10 days of trauma, with chief complaint of pain, watering and diminution of vision in right eye. Her visual acuity was PLPR4 in affected eye and 6/9 in other. Central corneal ulcer with abscess and hypopyon was noted with inability to see fundal glow. To study response of fungal keratitis to voriconazole and natamycin eye drop. Corneal tissue obtained by a corneal scrape was plated on Sabouraud's agar, KOH mount, gram and giemsa staining was performed. SDA shows a filamentous colony of fungus is grown upon aerobic incubation at 37°C for 5-7 days. Patient was treated with combination therapy of voriconazole and natamycin eye drop. Patient responded well to combination therapy of voriconazole and natamycin eye drop. Patient developed corneal healing with little amount of fibrosis. We lost patient on follow up after that. Patient responded well to combination therapy of voriconazole and natamycin eye drop. The most common risk factors for acromonium fungal keratitis is ocular trauma, and acromonium fungal keratitis might be treated better with natamycin and voriconazole than other alternatives. our results are clinically significant and may provide some useful information on the diagnosis and management of acromonium fungal keratitis.

**Keywords:** DNA- deoxyribonucleic acid, KOH potassium hydroxide, LASIK- laser-assisted in situ keratomileusis, RMOA- running months of amenorrhea, SDA- sabour dextrose agar, USG-ultrasonography

## INTRODUCTION

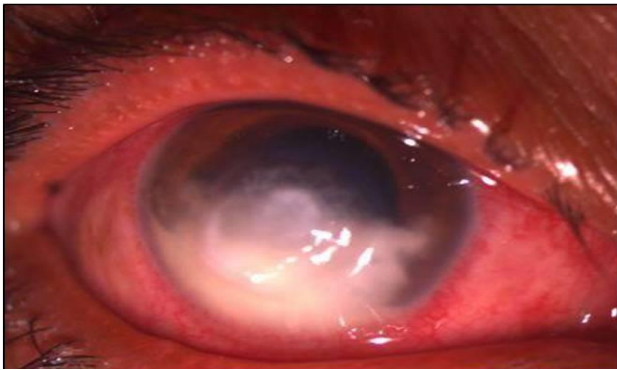
Fungal keratitis is an unusual but potentially sight-threatening ocular infection. In fungal keratitis, acromonium fungal keratitis in a pregnant female may be considered as rare considering the complexity involved due to associated pregnancy. The majority of fungal keratitis cases occur after corneal injury, usually as a result of contact with a fungus-contaminated vegetative material.<sup>1</sup> Acromonium are filamentous fungi commonly isolated from plant debris and soil.<sup>2</sup> Acromonium are an opportunistic environmental pathogen that lead to a superficial infection. Das et al, reported a total of 17

cases between 1971 and 2010 of worldwide clinical ocular infections caused by different species of acromonium, which described symptoms including keratitis and endophthalmitis in these patients.<sup>3</sup>

Alfonso et al reported four cases of acromonium fungal keratitis associated with laser-assisted in situ keratomileusis (LASIK) that were performed by different surgeons during the same time period in the same operating room.<sup>4</sup> Aside from these instances, until recently, there had been no other reported case series of acromonium fungal keratitis.

## CASE REPORT

A 22-years-old female from western part of India presented with 7<sup>th</sup> running months of amenorrhea (RMOA), had history of fall of some vegetative material in right eye, while was working in backyard of her house. She came after 10 days of trauma, with chief complaint of pain, watering and diminution of vision in right eye. Her visual acuity was PLPR4 in affected eye and 6/9 in other.



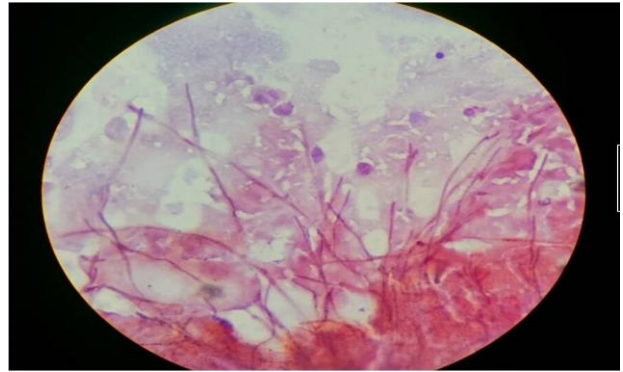
**Figure 1: Acremonium fungal keratitis.**

Central corneal ulcer with abscess and hypopyon was noted with inability to see fundal glow. In investigations, corneal tissue obtained by a corneal scrape was plated on Sabouraud's agar, KOH mount, gram and giemsa staining was performed. In SDA, filamentous colony of fungus is grown upon aerobic incubation at 37°C for 5-7 days. In KOH, fungal hyphae and micro conidia morphological resembling acremonium species. In gram stain gram positive, fungal hyphae and micro-conidium resembling acremonium species.



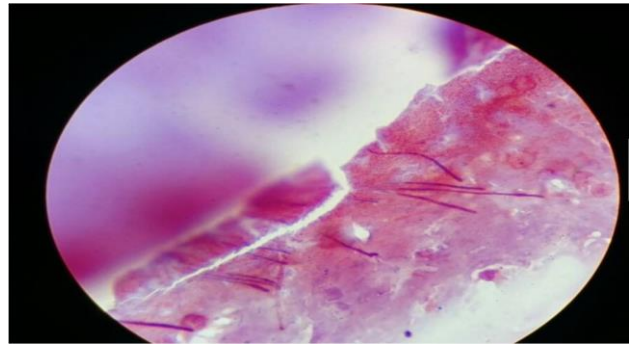
**Figure 2: Pregnant female with acremonium fungal keratitis.**

Abdominal USG for fetal wellbeing was S/o placenta previa (posterior low-lying placenta) with 30 weeks single fetus cephalic presentation with good cardiac activity. She was prescribed systemic medication including cap. amoxicillin 500 mg twice a day for 5 days, tab. fluconazole 300 mg twice a day for 7 days, tab. avva 250 mg twice a day with coconut water, tab. rantac twice a day and tab. paracetamol sos.



**Figure 3: Acremonium fungal keratitis gram stain I.**

For local application, fortified vancomycin eye drops 50 mg/ml 1 hourly for 1<sup>st</sup> 12 days, Fortified amikacin eye drops 50 mg/ml 1 hourly for 1<sup>st</sup> 12 days. Voriconazole eye drop 10 mg/ml 2 hourly from 4<sup>th</sup> day of treatment along with atropine eye ointment. Natamycin eye drops 1 hourly in day time and 2 hourly in night and Zymaxid eye drops 1 hourly from 13<sup>th</sup> day of treatment were added.



**Figure 4: Acremonium fungal keratitis gram stain II.**

On the 11<sup>th</sup> day of therapy, as patient was suffering from placenta previa, she was given injection betamethasone 12 mg 12 hourly and injection isoxsuprine 10 mg 8 hourly under proper informed consent regarding risk and benefit of ocular condition and health of baby.



**Figure 5: Acremonium fungal keratitis colonies on SDA.**

On 32<sup>nd</sup> day of treatment, she developed central corneal perforation, and was treated with bandage contact lens

with glue application after inj. Mannitol 100 cc iv and was prescribed inj. Augmentin followed by oral course and pad and bandage therapy for next 7 days till central corneal perforation was sealed.

Patient was discharged with local application voriconazole eye drop 10 mg/ml 2 hourly, natamycin eye drops 1 hourly in day time and 2 hourly in night, atro eye ointment three times a day and zymaxid eye drops one hourly. Patient went on missing for some follow up but she appeared after one month with healed central corneal scar without any ulcer, abscess or perforation with visual acuity PLPR4.

## DISCUSSION

Though aspergillus fungus is more common in western part of India, acromonium species is more common in young immunocompromised patients with vegetative trauma. Patient was treated with voriconazole and natamycin combination which responded well to topical medication combination and ulcer healed well inspite of immunocompromised state of patient. Acremonium is a large polyphyletic fungal genus that comprises approximately 150 species, most of them being sap-robres in soil and pathogens of plants.<sup>5</sup>

In most cases, acremonium is diagnosed with microscopic morphology. To confirm acremonium species, deoxyribonucleic acid (DNA)-based method is essential but technical problems like no defined reference sequence and cost and time. Limitations makes this method difficult.<sup>5</sup> Therefore, this report also has the limitation that acremonium species was not confirmed via the DNA-based method. Acremonium can be easily isolated on modified Sabouraud's dextrose agar at a temperature of 25°C-37°C (optimum 30°C). In this report, we follow the above procedure. Colony characteristics of Acremonium vary according to their growth, ranging from white, powdery, and suede-like colonies to smooth, waxy, and velvety colonies, with colour variations from white to gray to rose, displaying light yellow or light pink on the reverse side of the culture plate after 4-5 days of incubation.

Microscopically, acremonium form delicate, thin hyaline septate hyphae with inter-twining ropes, and bear narrow, unbranched tapering conidiophores at right angles to the hyphae, which have elliptical or crescent-shaped unicellular conidia.<sup>2</sup> These mycological characteristics are remarkably consistent with the findings in our patient. Corneal trauma from an insult with vegetable matter is the leading risk factor for the development of fungal keratitis in tropical regions or developing countries. Therefore, demographic factors may also influence host

susceptibility to corneal trauma and subsequent infection. Management of fungal keratitis can be difficult, particularly as there are no standard therapies for infections caused by acremonium. From several studies, acremonium is known to be sensitive to amphotericin B, natamycin, and voriconazole, but initial treatment with amphotericin B and fluconazole failed in four cases out of five patients in a study. Therefore, natamycin or voriconazole might be a better choice of treatments for acremonium fungal keratitis than amphotericin B or fluconazole (Kim et al). In present study, we used combination therapy of voriconazole and natamycin eye drop, to which patient respond well.

Patient responded well to combination therapy of voriconazole and natamycin eye drop. The most common risk factors for acremonium fungal keratitis is ocular trauma, and acremonium fungal keratitis might be treated better with natamycin and voriconazole than other alternatives. Study results are clinically significant and may provide some useful information on the diagnosis and management of acremonium fungal keratitis.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: Not required*

## REFERENCES

1. Kim SJ, Cho YW, Seo SW, Kim SJ, Yoo JM. Clinical Ophthalmol. 2014;8;283-7.
2. Fincher RM, Fisher JF, Lovell RD, Newman CL, Espinel-Ingroff A, Shadomy HJ. Infection due to the fungus acremonium (cephalosporium). Med (Baltimore). 1991;70(6):398-409.
3. Das S, Saha R, Dar SA, Ramachandran VG. Acremonium species: a review of the etiological agents of emerging hyalohyphomycosis. Mycopathologia. 2010;170(6):361-75.
4. Alfonso JF, Baamonde MB, Santos MJ, Astudillo A, Fernandez-Vega L. Acremonium fungal infection in 4 patients after laser in situ keratomileusis. J Cataract Refract Surg. 2004;30:262-72.
5. Perdomo H, Sutton DA, García D, Fothergill AW, Cano J, Gene J, et al. Spectrum of clinically relevant acremonium species in the United States. J Clin Microbiol. 2011;49(1):243-56.

**Cite this article as:** Noticewala V, Shastri M, Desai R, Sheikh K. A case report of pregnant female with right eye acremonium keratitis. Int J Res Med Sci 2017;5:4623-5.