NATAMYCIN RESISTANT FUNGAL KERATITIS: A CASE REPORT

*Diksha Prakash, *Abhishek Chandra, *Govind V. Khalkho, **OPS Maurya

Introduction

Mycotic keratitis is a challenging condition in ophthalmological practice. Ocular trauma, particularly trauma caused by vegetative material, is reported as the most common predisposing risk factor [1, 2]. Treatment options are limited, and many cases require surgery to maintain corneal integrity [3, 4]. Overall, the most common causes of filamentous mycotic keratitis worldwide are the Aspergillus and Fusarium genera [5, 6]. In the Aspergillus group, Aspergillus fumigatus followed by Aspergillus flavus (section Flavi) are the most commonly encountered opportunistic pathogens. This is an interventional case report describing the course and treatment of natamycin resistant Aspergillus flavus keratitis in an elderly male.

Case report

A 62 year old male presented with chief complaints of pain, redness and decreased vision in his left eye for 7 days. On examination his right eye had vision of 6/18 and NS 2 cataract. His left eye had vision of CF 1m. There was diffuse conjunctival congestion along with central 6mm corneal infiltrate and overlying epithelial defect (Fig. 1 and 2). The posterior view was hazy.

A diagnosis of OS fungal keratitis was made and corneal scraping was sent for smear and culture-sensitivity. He was started on topical natamycin 5% eye drops half hourly along with atropine sulphate 1% eye drops and oral anti-inflammatory tablets for pain.

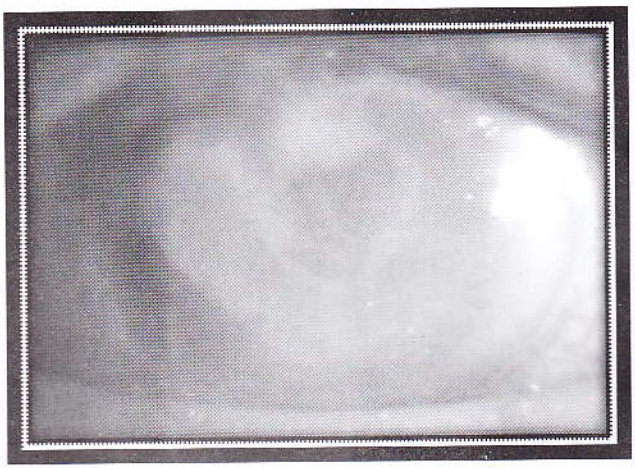

Figure 1

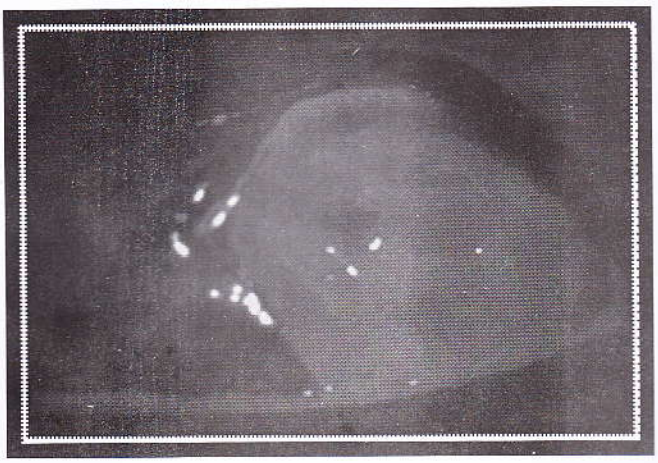

Figure 2

On the next follow up after 10 days, the corneal infiltrates had increased along with presence of hypoyon which suggested worsening of keratitis (Fig. 3). The culture report showed Aspergillus flavus which was susceptible to voriconazole and itraconazole. So voriconazole (10mg/ml) was started at half hourly interval and patient was called after a week.

After a week, patient showed symptomatic and clinical improvement. The corneal infiltrates had decreased and hypopyon was also reduced (Fig. 4). The same treatment was continued and patient was called again after one week.

Chandra Eye Care, Varanasi, U.P.
Department of Ophthalmology, Institute of Medical Sciences, BHU.

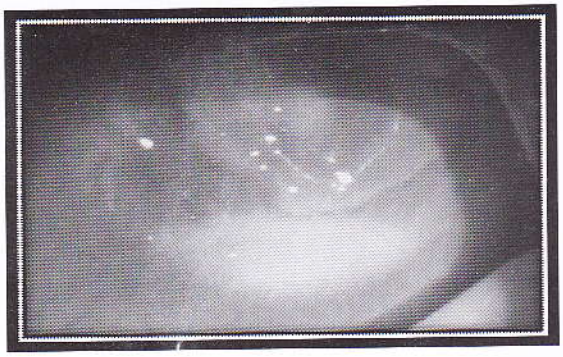

Figure 3

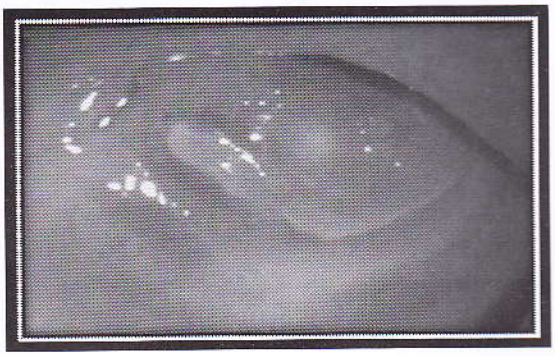

Figure 4

On the next follow up, the corneal ulcer had healed with scarring and hypopyon had completely resolved (Fig. 5). His vision was CFCF.

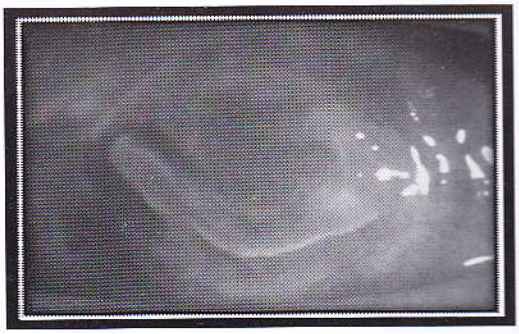

Figure 5

Discussion : The treatment of mycotic keratitis is challenging because of the poor corneal penetration of medications and the limited efficacy of the available drugs. Voriconazole is a second-generation triazole that shows good corneal penetration [7]. In our case, Natamycin was not efficacious so we used voriconazole after the culture-sensitivity report. Despite intensive antifungal treatment, perforation is not uncommon, so adjuvant treatments may be needed to prevent complications [8].

Conclusion : As natamycin 5% is the first line of management of fungal keratitis in our set up, resistance to this drug is of major concern. In all the cases of corneal ulcer, corneal scraping should be sent for culture and sensitivity as the culture report in our case helped us in saving the eye of our patient. Voriconazole is the drug of choice for treatment of Aspergillus spp. that show resistance to topical natamycin and amphotericin B. In our other case series of 24 patients, we observed that although A.fumigatus was susceptible to natamycin but A.flavus was highly resistant to natamycin and susceptible to voriconazole.

References

1. Manikandan P, Varga J, Kocsube S, et al. Epidemiology of Aspergillus keratitis at a tertiary care eye hospital in South India and antifungal susceptibilities of the causative agents. Mycoses. 2013; 56:26–33.
2. Thomas PA, Kaliamurthy J. Mycotic keratitis: epidemiology, diagnosis and management. Clin Microbiol Infect. 2013; 19:210–20.
3. Jurkuna U, Behlau I, Colby K. Fungal keratitis: changingpathogens and risk factors. Cornea. 2009; 28:638–43.
4. Chen WL, Wu CY, Hu FR, et al. Therapeutic penetratingkeratoplasty for microbial keratitis in Taiwan from 1987–2001. Am J Ophthalmol. 2004; 137:736–43.
5. Tanure MA, Cohen EJ, Sudesh S, et al. Spectrum of fungalkeratitis at Wills Eye Hospital, Philadelphia, Pennsylvania. Cornea. 2000; 19:307–12.
6. Thomas PA. Current perspectives on ophthalmic mycoses.Clin Microbiol Rev. 2003;16:730–97.
7. Johnson LB, Kauffman CA. Voriconazole: a new triazoleantifungal agent. Clin Infect Dis. 2003; 36:630–7.
8. Prajna NV, Mascarenhas J, Krishnan T, et al. Comparison ofnatamycin and voriconazole for the treatment of fungal keratitis. Arch Ophthalmol. 2010; 128:672–8.