Superficial punctate keratitis: A diagnostic dilemma

Rashmi Mittal

A 30-year-old immunocompetent male presented to our outpatient department with complaints of pain, redness, and watering and hazy vision in the left eye for the past 1 week. He had a history of swimming in a pond 10 days back. Visual acuity was 6/6 in the right eye and 6/9 in the left eye. Slit-lamp biomicroscopic examination revealed diffuse, multifocal, coarse, raised, punctate epithelial lesions on the cornea that stained negatively with fluorescein [Figure 1]. The underlying stroma was normal. The conjunctiva showed a papillary response. The raised corneal lesions were scraped using number 15 blade, smeared on a glass slide, and stained with Gram stain. Microbiology examination of the slide revealed numerous Gram-positive, oval, nonbudding bodies under ×100 oil immersion field [Figure 2]. The oval bodies were 1% acid fast. He was treated with topical gatifloxacin 0.5% eye drops six times a day for 10 days. The lesions healed completely, and vision returned to 6/6 after 10 days.

1. What is the diagnosis?
   a. Microsporidial epithelial keratoconjunctivitis
   b. Adenoviral keratoconjunctivitis (AK)
   c. Thygeson’s superficial punctate keratopathy (TSPK)
   d. Keratitis medicamentosa.

2. Which is the peak season for this condition?
   a. Winter
   b. Summer
   c. Rainy
   d. Spring.

3. What is the best treatment option for this patient?
   a. Observation
   b. Topical antibiotics plus steroids
   c. Corneal scraping alone
   d. Scraping plus topical antibiotics.
Clinical Quiz

Microsporidia are unicellular, spore-forming parasites. Conventionally, these were considered as Protozoans, but, more recently, these have been classified as fungi. There are two distinct forms of keratitis caused by this organism – epithelial keratoconjunctivitis and stromal keratitis. Keratoconjunctivitis is more common form of the disease. Contrary to the olden belief, this infection can be seen in immunocompromised as well as immunocompetent individuals. The incidence rises dramatically during the rainy season, as contaminated water is the most common source of infection. Clinically, it needs to be differentiated from other causes of superficial punctate keratitis such as AK and TSPK. Microsporidial keratoconjunctivitis is characterized by unilateral, diffuse, monomorphic, coarse, elevated SPKs with round borders. There is no associated lymphadenopathy, and all lesions heal well with supportive therapy alone, without any scarring. Corneal scraping helps in laboratory diagnosis as well as debulks the infectious load. Prophylactic topical antibiotics prevent secondary infection. Topical steroids should be avoided as they can lead to persistence of the organism within the epithelial cells. In contrast, SPKs of AK are less coarse and are usually associated with subepithelial infiltrates involving the anterior stroma. This can be very well appreciated on anterior segment optical coherence tomography. Lesions are pleomorphic and are usually associated with preauricular lymphadenopathy. Treatment usually requires antibiotics and steroids and scarring is common despite adequate treatment. TSPK, on the other hand, presents with chronic remissions and exacerbations. SPKs are typically central, are monomorphic, and have “crenated” edges. They respond dramatically to topical steroids and heal without scarring.

Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

References
1. Garg P. Microsporidia infection of the cornea – A unique and challenging disease. Cornea 2013;32 Suppl 1:S33-8.
2. Thanathanee O, Athikulwongse R, Anutarapongpan O, Laummaunwai P, Maleewong W, Intapan PM, et al. Clinical features, risk factors, and treatments of Microsporidial epithelial keratitis. Semin Ophthalmol 2016;31:266-70.
3. Das S, Sharma S, Sahu SK, Nayak SS, Kar S. Diagnosis, clinical features and treatment outcome of microsporidial keratoconjunctivitis. Br J Ophthalmol 2012;96:793-5.