# Punctate epithelial keratoconjunctivitis: A microsporidial infestation

A 6-year-old female child presented with redness, eyelid swelling associated with a mucopurulent discharge in the left eye, which started after taking a bath in river water 1 month ago. Local eye doctor diagnosed her having an allergy and advised topical steroids that worsened the condition. Left eye revealed mixed conjunctival reaction [Fig. 1a and b] with a palpable preauricular lymph node. Cornea revealed numerous raised punctate intraepithelial lesions [Fig. 1c] that were better seen after fluorescein staining [Fig. 1d]. Diagnostic scrapings (calcofluor white stain, 400×) [Fig. 1e] confirmed microsporidial spores. Her condition resolved after simple corneal debridement [Fig. 1f].

The punctate epithelial keratitis (PEK) is a distinct clinical entity characterized by coarse, raised intraepithelial lesions surrounded by focal inflammatory cells, with punctate staining as well as areas of negative staining on fluorescein. PEK is often a clinical picture common to various cornea pathologies.[1] The challenge lies in using it as a diagnostic tool to differentiate it from other two distinct clinical entities, that is, Thygeson's punctate keratitis and post-adenoviral punctate keratitis. Therefore, it is important to distinguish each of the above clinical entity accurately and initiate appropriate intervention to maximize clinical success.

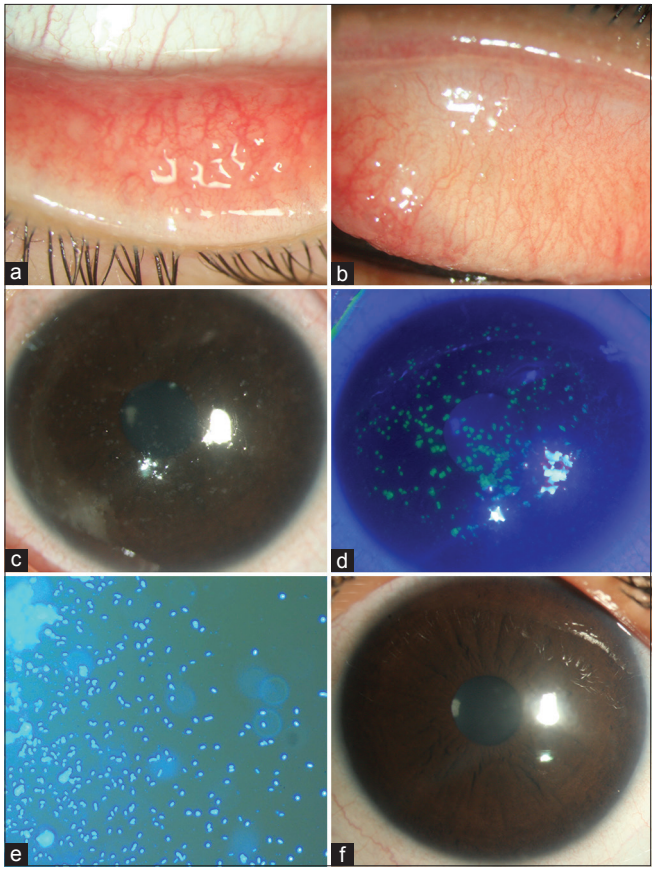


**Figure 1:** (a-e) Left eye slit lamp images of microsporidial keratoconjunctivitis. (a and b) Showing the mixed conjunctival reaction. (c) Numerous, coarse, raised punctate intraepithelial lesions surrounded by focal inflammatory cells. (d) On fluorescein staining, punctate lesions were better appreciated. (e) Diagnostic scraping (Calcoflour white staining, ×400) confirmed presence of Microsporidial spores. (f) Punctate keratitis resolved after a simple debridement

Microsporidial keratoconjunctivitis is a typically self-limiting parasitic infestation of the ocular surface caused by obligate intracellular parasites and prevalent throughout the year.[2] Microsporidial keratoconjunctivitis mostly unilateral, conjunctiva may show a papillary or follicular response, rarely associated with mucopurulent discharge with or without regional lymph node involvement. Cornea shows diffuse, multifocal, coarse, raised, intraepithelial punctate epithelial lesions, typically less than a millimeter in diameter. Negatively stains on fluorescein.[1-4] Underlying stroma may be normal and as elegantly demonstrated on high-resolution AS-OCT.[3] Diagnostic scrapings on Grams and Giemsa stain shows uniform, oval nonbudding spores. These spores are even more distinctly seen in KOH with calcofluor white and modified acid-fast (1% $H_2SO_4$) stain. There has not been an effective treatment regimen for microsporidial keratoconjunctivitis and published reports evidence that use of topical steroids can promote the persistence of infection.[5] Mostly, it is self-limiting and heals without any sequelae. Although a thorough epithelial debridement helpful in eradicating the corneal infestation but active conjunctivitis does persist for a while.

## Conclusion

Microsporidial keratoconjunctivitis is a self-limiting ocular surface infestation: mostly unilateral, associated with the mucoid discharge, typical raised punctate intraepithelial lesions and that were better appreciated on fluorescein staining. Meticulous debridement eradicates the corneal infestation. Steroids should not be used in this entity.

### 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.

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Nil.

### Conflicts of interest

There are no conflicts of interest.

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