Corneal ulcers - Do you culture?

Katherine Bickle, O.D.

Infectious keratitis remains a serious and potential sight-threatening condition requiring prompt treatment. The estimated incidence of contact lens-related microbial keratitis range from 1.2 to 25.4 (rigid gas permeable and overnight silicone hydrogel wear, respectively) per 10,000 contact lens wearers.1

Your patient’s history and clinical findings, practice setting, and past experience may influence how often you culture corneal ulcers. Currently, practitioners do not commonly culture small, peripheral ulcers, but, instead, treat these patients empirically. However, large, deeply ulcerated, central, nonresponsive or worsening ulcers should be cultured. Cultures should also be performed on immunocompromised or monocular patients or those who report an unusual history (exposure to vegetative matter, tap water, hot tubs).2,3

To obtain a culture:

1. Culture prior to initiating treatment, if possible.
2. Instill a topical anesthetic (ideally, nonpreserved) into the affected eye.
3. Remove any mucus from the ulcer’s surface while avoiding contamination with other areas of the ocular surface or adnexa.
4. Obtain a sample from the base and edge of the ulcer. Obtaining a sample of the discharge and patient’s contact lens case can also aid in the diagnosis. A new or sterilized collection device should be used to obtain each sample.

Simplified systems are available that allow for a swab with the sample to be placed directly into a tube containing a medium allowing for future analysis.4 If you do not already work with a laboratory, consider contacting a local hospital to arrange for proper delivery and analysis.

Samples can also be obtained with instruments requiring transfer of the sample to an agar plate (blood, sabouraud dextrose, chocolate) or broth (thioglycollate). For practitioners who do not commonly culture, the costs can be significant as the materials expire quickly. Additional information regarding this approach is included in the American Academy of Ophthalmology Preferred Practice Pattern: Bacterial Keratitis.5

References:


Dr. Bickle is a clinical instructor and Ph.D. student in Vision Science at The Ohio State University College of Optometry. She is a graduate of The Ohio State University where she received her doctor of optometry and Master of Science degrees.

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