INTERNATIONAL JOURNAL OF EYE BANKING

## PICTURE CHALLENGE

# What *is* this?

Test your knowledge with a real-life case. These figures show the same cornea using different photographic techniques. Should this cornea be transplanted?

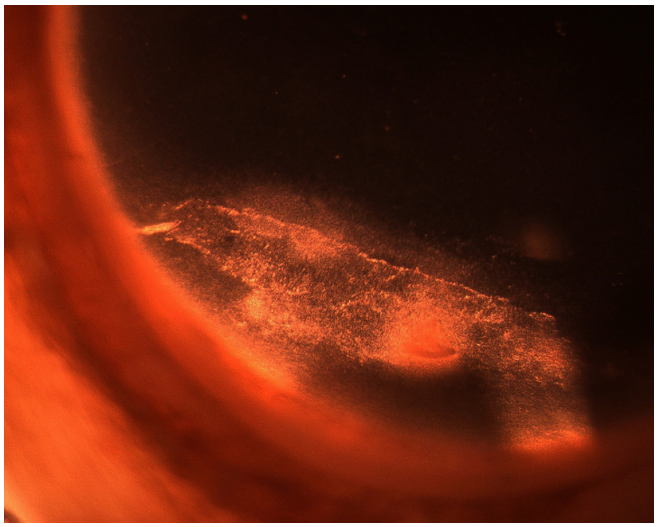

Fig. 1

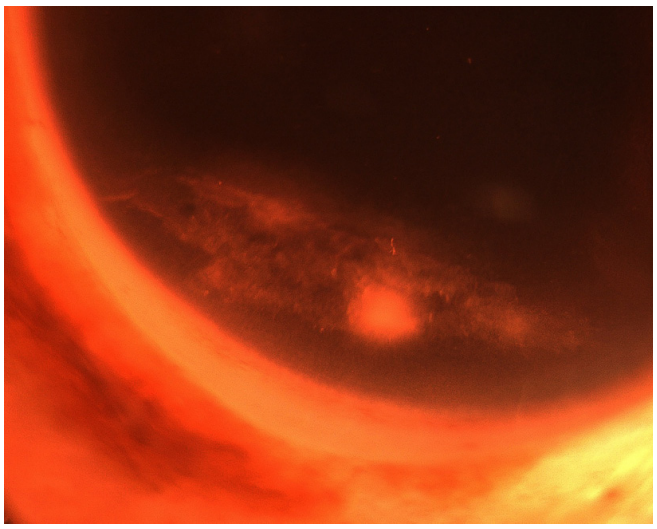

Fig. 2

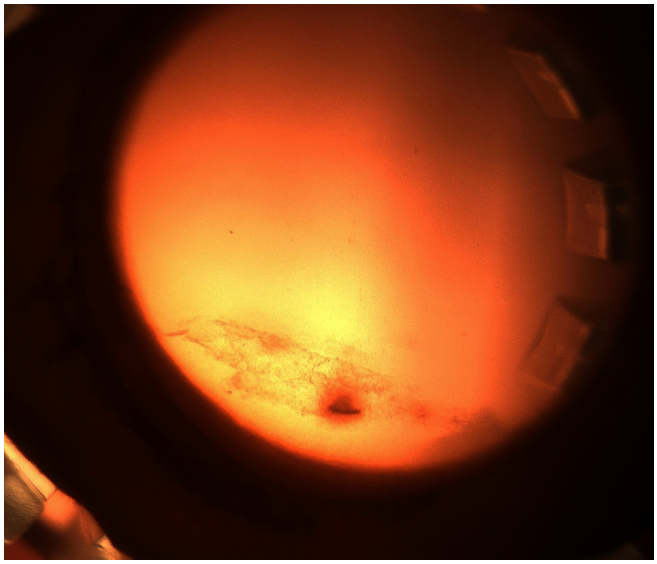

Fig. 3

Photos: Mike Hanson, University of Kentucky Department of Ophthalmology, Lexington, Kentucky

The author states that he has no conflicts of interest to disclose.

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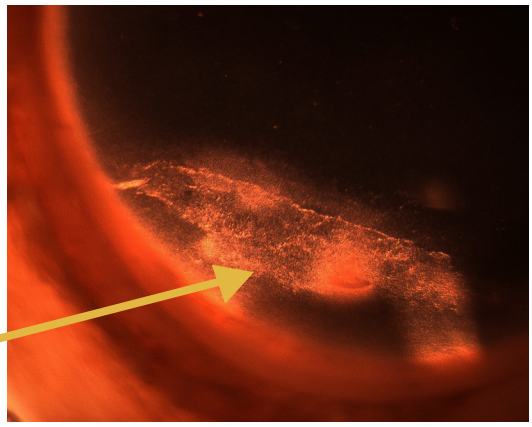

Fig. 1. Visible on side illumination (sclerotic scatter), the epithelial defect in the mid-stromal, peripheral cornea is caused by chronic exposure; the ventilated patient's lids remained open in the intensive care unit.

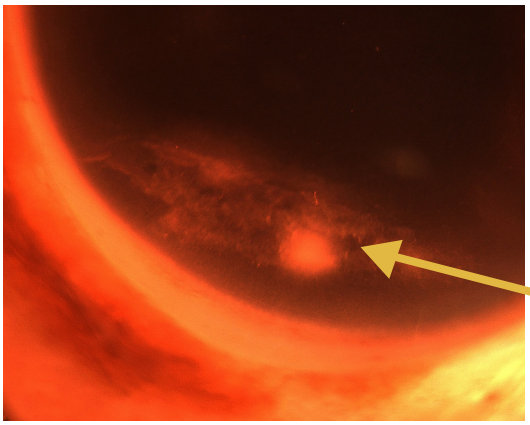

Fig 2. Viewed on direct illumination, the white opacity in the center of the exposure defect represents infectious keratitis (corneal ulcer) in the cornea of this potential donor.

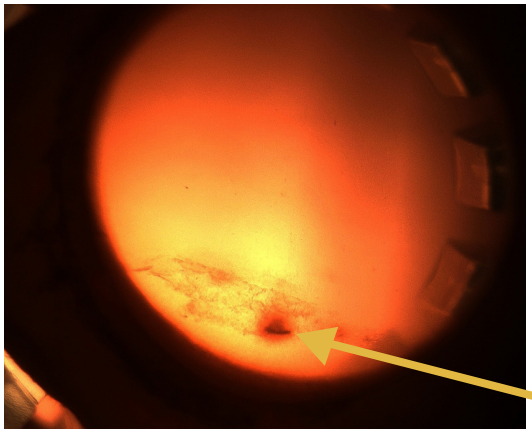

Fig. 3. The infectious keratitis can readily be seen with retroillumination of the cornea in preservation medium. The opacity may not be readily visible on penlight examination.

**Answer:**

The cornea illustrated was from a tissue donor who had been a patient in the ICU for a closed head injury for 10 days prior to death.

On examination, each cornea showed evidence of exposure with an epithelial defect caused by open lids in a ventilated patient. The right cornea is shown in Fig. 1. The opacity in the center of the right cornea was not seen on penlight examination, but was picked up subsequently on slit lamp examination of the cornea in storage medium (Fig. 2).

All three pictures are of the same cornea. Only the exposure defect was initially noted on penlight exam, and the infiltrate was not readily visible. The infiltrate lights up beautifully on retroillumination during slit lamp examination, and the exposure defect can be seen there as well (Fig. 3). The infiltrate is a sign of potential infection and is a risk factor for postoperative infection (infectious keratitis or endophthalmitis). The cornea was not used for surgery and was subsequently discarded.

The lesson from this case is that globes with a history of exposure should be examined closely for evidence of infection (infiltrates). Use careful retroillumination to visualize infiltrates that might not be seen on penlight exam. Infiltrates may be expected in donors with chronic exposure keratitis.

**KEYWORDS:** corneal infiltrates, corneal opacity, epithelial defect, exposure keratitis

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