

PICTURE CHALLENGE

What is this?

Test your knowledge with a real-life case. These figures show the same donor cornea photographed from different aspects. Should this cornea be transplanted?



Fig. 1



Fig. 2

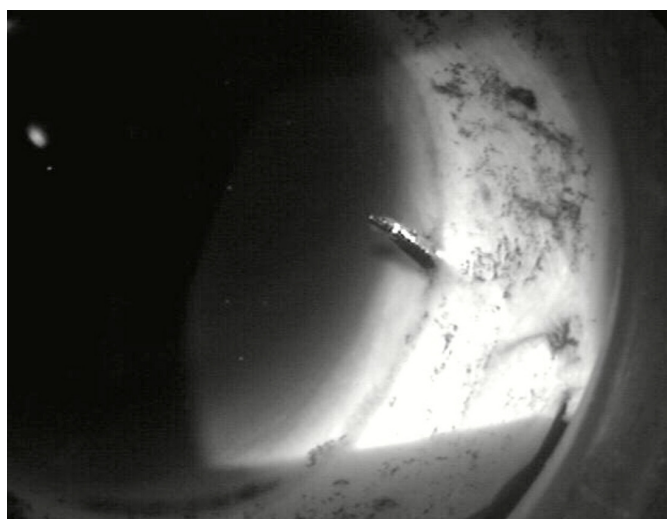


Fig. 3



Fig. 4

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

Photos: David E. Korroch, CEBT
Lions Medical Eye Bank and Research
Center of Eastern Virginia, Inc.

PICTURE CHALLENGE

What is this?



Fig. 1. An anterior view of cornea with anomaly, photographed with a slit lamp biomicroscope.



Fig. 2. Low-magnification view of entire cornea from posterior aspect.

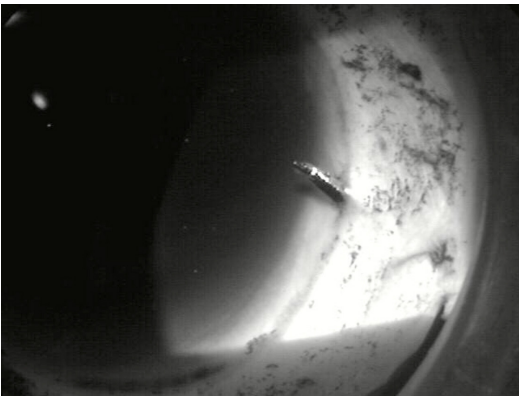


Fig. 3. Middle-magnification view from posterior aspect.



Fig. 4. High-magnification view of anomaly from posterior aspect.

Answer:

These images show the same donor cornea. They were photographed using a Topcon SL-7E Slit Lamp biomicroscope (Topcon Medical Systems, Oakland, New Jersey) at optic power settings of $\times 6$ to $\times 40$ with an attached digital camera and both direct and retroillumination.

The device pictured is an implanted Ex-PRESS Mini Glaucoma Shunt (Alcon Laboratories, Ft. Worth, Texas). This device employs a 27-gauge (400- μm outside diameter) shaft with a penetrating tip, retention spur, 3 intake orifices that allow flow of aqueous humor, and external plate. The penetrating tip and orifices can be seen in the photographs.

The procurement technician who performed a pre-excision penlight examination did not see the metal shunt. This cornea was deemed unsuitable for transplant because the device likely would further damage the cornea when the surgeon prepared the tissue (e.g., trephination or lamellar dissection).

Commentary:

I often use these photographs when teaching technicians about performing slit lamp examination of donor corneas, because the metal shunt is not visible from the anterior, or epithelial, aspect. Unlike many glaucoma filtration devices, this one does not employ a capillary tube to carry aqueous humor away from the anterior chamber. If it had, the procurement technician would have seen the shunt. Because the condition of the epithelium was poor and only the very tip of the shunt crossed into the clear portion of the cornea, the device was detected only after turning over the cornea during microscopic examination.

KEYWORDS: corneal transplantation, Ex-PRESS, glaucoma, shunt

David E. Korroch, CEBT

Chief Executive Officer, Lions Medical Eye Bank and Research Center of Eastern Virginia, Inc. Norfolk, Virginia (drroch@lionseyebank.org)