New in the Cataract Toolbox

Surgeons provide a step-by-step analysis of some of the most watched videos on Eyetube.net.

BY THIERRY AMZALLAG, MD; CAROL A. DRAKE, MD; R. BRUCE WALLACE III, MD; AND JEFFREY WHITMAN, MD

THIERRY AMZALLAG, MD

eyetube.net/?v=hivuf

To protect the corneal epithelium during cataract surgery, I present a technique called "corneal on-demand irrigation system" that allows the surgeon to irrigate the cornea as often as necessary without the risk of collapsing the anterior chamber. As the video demonstrates, I use a corneal knife to create a 2-mm longitudinal slit 2 mm from the axis of the irrigation halls on the anterior face of the silicone sleeve (Figure 1). This system uses some of the irrigation flow from the ultrasound handpiece. By moving the ultrasound probe 1 to 2 mm forward and backward, I can irrigate the cornea during the sculpting and quadrants phase of phacoemulsification. The level at which I withdraw, angulate, and rotate the handpiece allows me to control the exact zone and quantity of the corneal epithelium that is irrigated (Figure 2). This technique is a simple innovation that protects the corneal epithelium perioperatively, thus leading to patients' satisfaction on the first postoperative day. In addition to standard cataract cases, it is particularly useful for hard nuclei and long, delicate procedures. The same principle can be applied when removing the cortical material.

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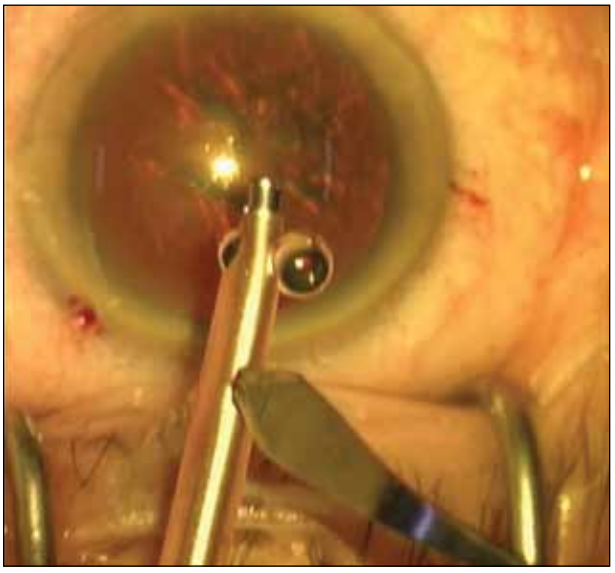

Figure 1. The surgeon performs a 2-mm longitudinal slit with a corneal knife 2 mm from the axis of the irrigation halls on the anterior face of the silicone sleeve.

CAROL A. DRAKE, MD

This video shows cataract surgery in a 6-year-old with megalocornea (14 mm), microspherophakia (8-9 mm), and congenital hypoplasia of the dilator pupillary muscle. He had peripheral transillumination defects of the iris and marked iridodonesis. His vision was 20/80 OD and 20/60 OS due to posterior subcapsular cataracts.

eyetube.net/?v=mamoh

Procedures on both eyes were similar. I enlarged the nondilating pupil with iris hooks. As shown in the video of the surgery on the patient's left eye, the edge of the capsular bag reaches the tips of the hooks. I stained the anterior capsule with capsular dye and performed a circular tear capsulorhexis. It was critical to keep the capsulorhexis small. With 23-gauge instrumentation and a bimanual technique, I removed the cataract. A Softec hydrophilic acrylic IOL (Lenstec Inc.; Figure 3) was implanted in the left eye. On the first postoperative day, the patient's visual acuity was 20/40 OS.

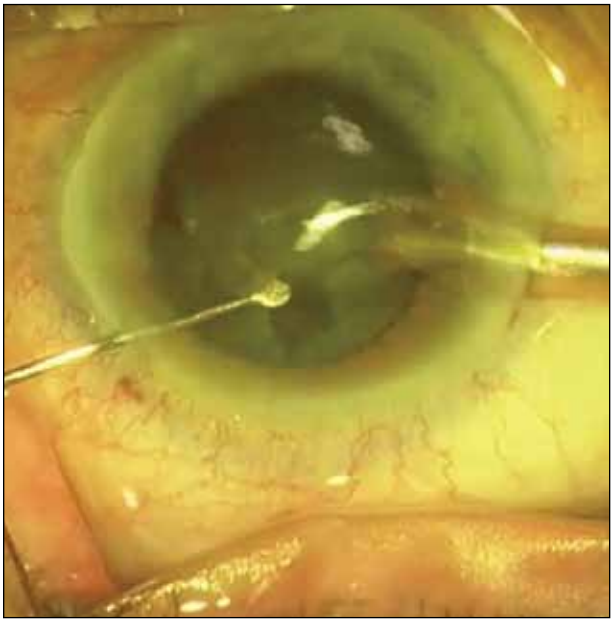

Figure 2. The surgeon controls the exact zone and quantity of the corneal epithelium that is irrigated through the level at which the ultrasound handpiece is withdrawn, angulated, and rotated.

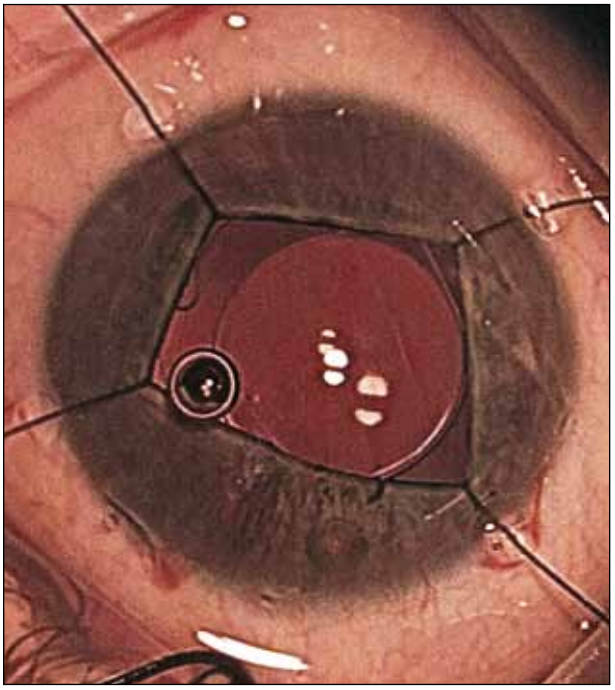

Figure 3. The patient's left eye immediately after cataract surgery.

The Softec's hydrophilic material made its insertion less traumatic and resulted in less ovaling of the bag in comparison to the AcrySof hydrophobic IOL (Alcon Laboratories, Inc.), which was used in the right eye. I performed Nd:YAG capsulotomies in both eyes 6 months postoperatively. The patient is now 7 years old with a refraction of +0.75 D sphere OD and +0.25 +0.50 X 9 OS with a visual acuity of 20/20-2 in each eye. There is almost no iridodonesis.

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R. BRUCE WALLACE III, MD

I encourage surgeons who may be on the fence about performing limbal relaxing incisions (LRIs) with presbyopia-correcting IOLs for their cataract patients to embrace the technique. As I mention in my video, there are video-based online resources that feature myself or other experienced surgeons that demonstrate how to use LRIs in combination with presbyopia-correcting IOLs. One of my videos even teach viewers how to set up an LRI wetlab at home. Additionally, instrument kits such as Storz Ophthalmic Instruments' Wallace LRI Kit are available to help surgeons readily equip their ORs with the best available tools.

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JEFFREY WHITMAN, MD

The enVista IOL is the first single-piece hydrophobic acrylic IOL to be approved by the FDA as a glistening-free lens. The enVista has an especially hard surface that resists dents and scratches from instruments and folding. It is also aberration free. I was fortunate to be the first in the United States to implant the enVista after the clinical trials.

When the enVista is ready for insertion, I begin by creating a 2-mm entry wound with a diamond blade. I had already filled the capsular bag with viscoelastic.

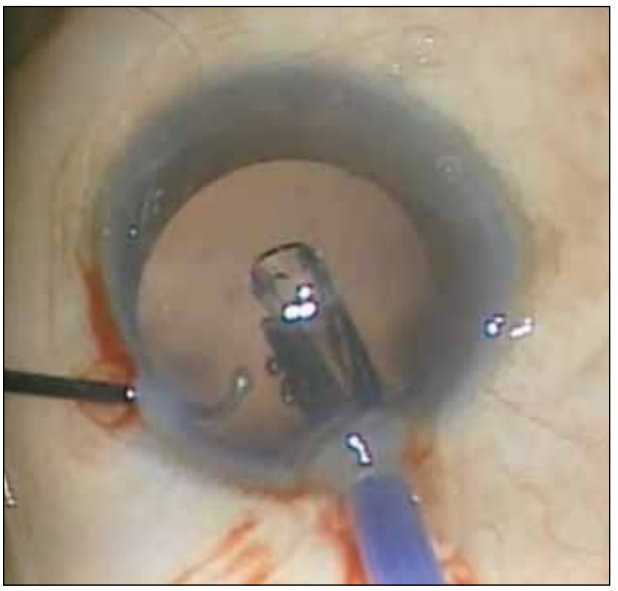

Figure 4. The surgeon delivers the enVista IOL (Bausch + Lomb) with an injector with a wound-assisted technique. The secondary instrument in the paracentesis is pushed toward the injector, which is lodged in the lip of the 2.2-mm wound.

Using a plunger-type injector, I insert the enVista via a wound-assisted technique, in which only the tip of the injector is engaged into the operative wound (Figure 4). The lens is then injected into the anterior chamber and positioned into the capsular bag using a Connor Wand (Rhein Medical). I position the IOL during the 20 to 30 seconds it takes for the IOL to unfold. After the lens is positioned, I use I/A to remove the viscoelastic. Hydrating the Wong incisions that I created at the main wound and at the paracentesis concludes the case. ■

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