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All the Clinical News in Sight

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Cornea

New instrument allows viewing of corneal incisions

Surgeons can see incisions in real time; tool has other ophthalmic applications, too

New Product Focus

By Lynda Charters

Jacksonville, FL—A new instrument (Gulani Incision Viewing Instrument, Volk Optical, Mentor, OH) is available that allows surgeons to visualize clear corneal incisions while they are being made.

The tool allows surgeons to construct reproducible corneal incisions consistently, which facilitates achieving astigmatically neutral, watertight, and sutureless incisions. The instrument shows surgeons how their corneal incisions look while they are being made," explained Arun C. Gulani, MD, designer of the ophthalmic tool. Dr. Gulani is director of refractive surgery, chief of cornea and external disease, and assistant professor, department of ophthalmology, University of Florida, Jacksonville.

Dr. Gulani explained that while the clear corneal incision has revolutionized phaco-emulsification, surgeons are not actually able to see the incision while it is being made, which is a great handicap.

"Because the construction of the incision could not be visualized, surgeons almost always have to imagine the incision construction using the keratome movement, direction, and dimension guidance factors, all of which are only circumstantial," he added. "This makes our goal—an incision that is astigmatically neutral, watertight, and sutureless—difficult to achieve."

Also at the present time, where postoperative endophthalmitis is attributed to leaking corneal incisions, the secure construction of a watertight corneal incision cannot be overemphasized, Dr. Gulani added.

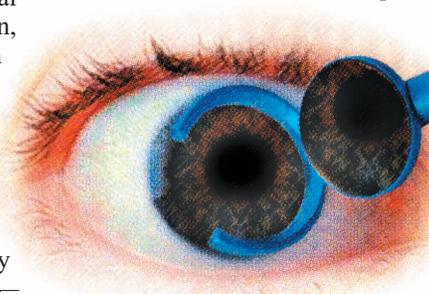
"We do end up occasionally with incisions that are quite different from the ones that we initially intended to make," he said.

Designed with surgeon in mind

The instrument has two user-friendly features: a fixation ring that holds the eye in place during the creation of the incision, and a specially angled mirror on a hinge that provides visualization during advancement of the blade into the cornea.

"This allows surgeons to see the plane and the site at which the eye is being entered, and the site and the direction in which the blade is emerging," Dr. Gulani said. "Most importantly, the surgeon can see the width of the incision."

He explained that at the end of the phacoemulsification procedure, in most cases the incision has changed in size and contour, so the surgeon's assessment of the ability of the wound closure without sutures might be inconsistent. At this time, surgeons must check for internal lip alignment and watch for internal lip collapse or malalignment in order to be confident about the surgical wound at the end of the surgery. The decision then is made about whether a suture will be placed.



Clear corneal incisions can be easily seen as they are being constructed using the Incision Viewing Instrument.

with which surgeons were familiar—thus eliminating any learning curve that might be associated with the use of the new instrument.

Because the incisions now can be visualized in real time, there are no more doubts

about alignment," he emphasized.

During the planning of the instrument, Dr. Gulani kept the design as close as possible to the instruments

He has routinely used this instrument during phacoemulsification and believes that it has improved his outcomes because it has eliminated any guesswork associated with the surgery.

"I can now see the consistency in my incision, which is extremely important," Dr. Gulani said. "This also provides positive feedback for residents and inexperienced surgeons who are learning the phacoemulsification technique. When they can actually see the creation of the incision, the complication rate can be decreased."

Other applications

In addition to making clear corneal incisions during phacoemulsification, the instrument has other uses.

During implantation of anterior chamber IOLs, both phakic and aphakic implants, the instrument allows visualization of the footplates of anterior chamber IOLs, so the surgeon can be certain that they are in the right position in the angle without an iris tuck.

The instrument also can be used during trabeculectomy to see the site during glaucoma filtering surgery. The actual internal opening of the fistula, according to Dr. Gulani, can be seen clearly and assessed. **OT**

FYI

Dr. Gulani first released and introduced the instrument at the annual meeting of the American Society of Cataract and Refractive Surgery.

