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IOL cutter small size, strength boons to IOL explantation procedure

The 19-gauge instrument can fit through 1.2-mm paracentesis incision, according to surgeon

Publish date: Sep 15, 2008
 By: Lynda Charters

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Ophthalmology Times

- Whether because of patient complaints of halos or malpositioning of the IOL, it may occasionally become necessary to exchange a refractive IOL. Having a reliable lens cutter is particularly important in such a setting,
- The size and bulk of many traditional instruments can make it difficult to maintain a deep ophthalmic viscoelastic device-filled anterior chamber due to gapping of the incision. It may be difficult to fixate and immobilize the optic, which can strike the corneal endothelium if it twists and rocks. The length and size of the blades create the risk of inadvertently cutting the iris or capsule



Los Altos, CA—A proprietary lens cutter (Packer/Chang IOL Cutter, MicroSurgical Technology [MST]) is a micro-scissors designed for insertion through a paracentesis incision while the surgeon holds the optic with a forceps through the phacoemulsification incision. David F. Chang, MD, in private practice in Los Altos, CA, and Mark Packer, MD, in private practice in Eugene, OR, designed the 19-gauge instrument, which can fit through a 1.2-mm incision.

Dr. Chang

"In this era of premium refractive IOLs, it has become more important than ever to explant and exchange an IOL safely," Dr. Chang said. "Whether because of patient complaints of halos or malpositioning of the IOL, it occasionally may be necessary to exchange a refractive IOL. Having a reliable lens cutter is particularly important in such a setting in which avoiding complications is an absolute must."



Figure 1 The lens cutter (Packer-Chang IOL Cutter, MicroSurgical Technology) is a 19-gauge micro-scissors designed to facilitate the safe removal of IOLs through a 1.2-mm incision. Similar to the design of a bolt cutter, the instrument is made from a single piece of metal bent on itself to create two blades. (Photos courtesy of MicroSurgical Technology)



The instrument offers some advantages over traditional IOL cutters, according to Dr. Chang. "The size and bulk of many traditional instruments can make it difficult to maintain a deep ophthalmic viscoelastic device (OVD)-filled anterior chamber due to gapping of the incision," he said. "It may be difficult to fixate and immobilize the optic, which can strike the corneal endothelium if it twists and rocks. Finally, the length and size of the blades create the risk of inadvertently cutting the iris or capsule."

The cutter is one of a number of interchangeable microincisional instrument tips that can be attached to universal squeeze handles available from the manufacturer. When operating through a phaco incision, the cutter will not cause the wound to gape when it is used to cut the lens. Traditional IOL cutters tend to result in "burping" OVD out of the eye as they are being used to cut, which results in progressive shallowing of the anterior chamber, according to Dr. Chang.

Strength of blades

Blade strength is another advantage of the IOL cutter. Traditional scissors are made by joining two blades with one weld upon which the blades pivot. Similar to the design of a bolt cutter, Dr. Chang said, the cutter is a single piece of metal bent on itself to create two blades.

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"The advantage of this design is that it affords greater blade strength that allows the cutter to transect the stiffest hydrophobic acrylic material—such as a proprietary posterior chamber lens (Sensor, Advanced Medical Optics [AMO]) or multifocal refractive lens (ReZoom, AMO)—without resulting in tilting or rocking of the optic," he said.

Dr. Chang also said that a separate set of micro-forceps can be operated through a paracentesis with the opposite hand to hold and fixate the optic as it is cut. This option prevents the optic from tilting or slipping as the scissor blades are advanced and closed.

"The added control of a bimanual technique to cut an IOL optic is much safer because trauma to the iris or capsule can be avoided more easily," he said. "In addition, the presence of short, powerful scissor blades means that much smaller cuts can be made. This reduces the chances of accidentally cutting or perforating the capsule or iris compared with larger cutting motions when using a traditional IOL scissors with longer blades."

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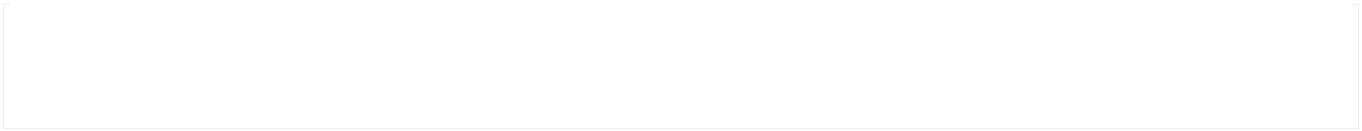
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