

katena GLOBE NEWS

FOR OPHTHALMIC PROFESSIONALS

VOLUME 11 NUMBER 2

LASEK . . . The Epithelial Flap

A New Chapter in Refractive Surgery

LASEK (Laser Sub Epithelial Keratomileusis) surgery was popularized at the 1999 ASCRS meeting by **Dr. Massimo Camellin**, of Rovigo, Italy. The LASEK procedure offers a number of advantages over LASIK and PRK including fewer complications, less haze and more rapid healing. A distinct advantage over LASIK is the elimination of flap complications due to microkeratomes. LASEK consists of cutting the epithelium with a specially designed trephine which leaves an 80° uncut margin for the hinge. An alcohol well is then placed over the flap and filled with a solution of alcohol and water to loosen the epithelium. After approximately 30 seconds the alcohol is removed with a sponge spear. The epithelial edge is then gently lifted and the flap is peeled back toward the hinge. Following laser ablation the flap is returned to its original position. Many surgeons, including **Drs. Durrie**,

Shahinian and **Sloane**, are perfecting their own techniques to further refine and enhance the procedure. Working with them, Katena has produced a comprehensive group of instruments for LASEK which will be described in this issue.

Epithelial Trephination

LASEK surgery starts with the creation of an epithelial flap. The first step is to cut through the epithelium with a specially designed trephine. Katena offers several different trephines for this purpose. The original style, designed by **Dr. Camellin**, features a 270° semi-sharp, precalibrated edge for the creation of an epithelial flap with an 80° hinge. Two marks on top of the trephine identify the hinge location. The trephine is offered in 8mm and 9mm diameters. A double-end version of the trephine is available with the appropriately sized alcohol well on the opposite end.



K2-7810 8mm
K2-7812 9mm

Herman Sloane, MD, of Oak Brook, IL, desired a sharper trephine which would enable him to obtain a cleanly cut epithelial flap. He modified a standard corneal trephine by adding a 75 micron depth guard with a 90° cutout for the hinge. The cutout in the side of the trephine allows for clear visibility of the hinge location. This trephine is available in both 8mm and 9mm sizes and is supplied in an autoclavable nylon block to protect its sharp edge.



Sloane Trephine
K2-7800 8mm
K2-7802 9mm

Dr. Lee Shahinian, of Mountain View, CA, has developed a similar trephine which features a 270° sharp cutting edge with a precalibrated 75 micron depth guard and a built-in knurled handle for improved control in the surgeon's



Shahinian Trephine
K2-7806 8mm
K2-7808 9mm

(continued on page 2)

Langerman Nucleus Chopper



Dr. David Langerman, of Orangeburg, NY, designed this instrument for chopping, dividing and manipulating the nucleus as well as for retracting the iris for better visibility. It features an elongated Kuglen style push-pull tip with wedge shaped superior and inferior edges for forward and backward nucleus chopping. The tip is angulated for chopping toward the phaco probe when used through a sideport incision.



K3-2372

hand. The inside diameter of the trephine is tapered to provide maximum visibility when centering the instrument on the cornea, while a notch on the top of the handle identifies the center of the hinge location. This trephine is available in 8mm and 9mm diameter.

Alcohol Wells

Once the flap has been cut, the epithelium is loosened by an alcohol solution which is placed into an alcohol well over the precut flap. Dr. Camellin designed an alcohol well with dual fixation grooves which prevent leakage and stabilize the eye. The diameter of the alcohol well is slightly larger than the flap to ensure penetration of the solution into the precut margin. The alcohol well is available individually and as a double end instrument combined with an epithelial trephine.



K2-7830 8mm Trephine & 8.5mm Alcohol Well
K2-7832 9mm Trephine & 9.5mm Alcohol Well



K3-1820 8.5mm
K3-1822 9.5mm

Dr. Lee Shahinian has developed a new alcohol well which features dual fixation rings for tight seal and is cone shaped to provide maximum visibility for the surgeon while centering the instrument over the precut flap. The handle is mounted at a 55° angle for applying direct pressure on the ring to ensure a secure seal. The Shahinian alcohol well is available in 9mm and 10mm diameter, 1mm larger than the Shahinian trephine.



Shahinian Well
K3-1830 9mm
K3-1832 10mm

Lifting and Peeling the Flap

Once the alcohol solution has been applied and removed, the surgeon begins to lift the flap. The Sloane Micro-Hoe was developed for lifting the precut margin of the epithelial flap. It features a delicate, 2mm wide semi-circular tip with a beveled edge to assist the surgeon in finding and lifting the perimeter of the epithelial flap. After the entire precut margin of the flap has been lifted, the remaining central portion of the epithelial flap is gently peeled back with the Sloane Epi-Peeler in preparation for laser ablation. Its 1x5mm spatula has semi-sharp edges to efficiently undermine and fold back the flap.



K3-1840
 Micro-Hoe



K3-1845
 Epi-Peeler



K3-1848 Micro-Hoe and Epi-Peeler

Katena also offers the Sloane Micro-Hoe and Epi-Peeler on one handle. With this double-end instrument the surgeon can lift and peel the entire epithelial flap.

Repositing the Flap

After laser ablation the epithelial flap is returned to its original position using the Sloane Repositor. This very delicate instrument has a slightly curved, bi-convex tip with blunt sides to easily slip under the flap and unroll it in a gentle sweeping motion.



K3-1855 Sloane
 Flap Repositor

Alcohol Cannula

When filling the alcohol well it is important to avoid scratching the epithelium or dripping solution on the conjunctiva. Katena offers this 25 gauge olive tip cannula for safely placing the alcohol solution in the well.



K7-3805

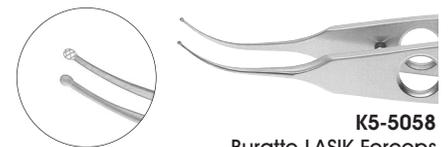
Suggested LASEK Set

- K1-5671** Lieberman Speculum
- K2-7830** Trephine & Well 8/8.5mm
- K2-7832** Trephine & Well 9/9.5mm
- K3-1848** Micro-Hoe & Epi-Peeler
- K3-1855** Flap Repositor
- K7-3805** Alcohol Cannula
- K9-2026** Sterilizing Case

Free LASEK CD-ROM available

New! CHU LASIK FLAP RE-LIFTING TECHNIQUE

Dr. Ralph Chu, of Minneapolis, MN, has devised a new flap lifting technique for LASIK retreatment surgery. Dr. Chu uses Katena's Buratto LASIK forceps in the closed position to gently sweep and depress the cornea to find the original flap edge. Once identified, he uses one of the delicate disc shaped tips of the forceps to push through the adhesion and



K5-5058
 Buratto LASIK Forceps

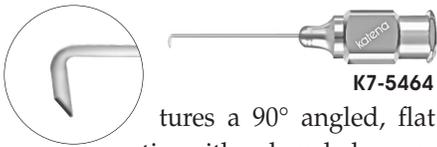
slide beneath the flap. He then grasps the flap and gently peels it back toward the hinge, exposing the stromal bed. The Buratto forceps is ideal for this technique as the delicate tips are fine enough to slip under the flap while the serrated inside surfaces provide excellent traction.

Free technique video available on request.

New! PHACO INSTRUMENTS

CHANG HYDRODISSECTION CANNULA

Dr. David Chang, of Los Altos, California, designed this 27 gauge hydrodissection cannula for his cataract extraction technique. It fea-



K7-5464

tures a 90° angled, flat tip with a beveled opening. The flat tip provides a broad stream of fluid and can be easily inserted under the capsular rim to hydrodissect in the 10 to 2 o'clock sector. Dr. Chang uses the point of the beveled tip to rotate the nucleus to ensure that it is completely separated.

COPE PHACO BAFFLE

Designed by Winston T. Cope, MD, of Seminole, Florida, this nucleus manipulator is a Sinsky Hook with a 3mm long flattened section in the shaft at 1mm from the tip. The Sinsky hook tip is used



K3-5155

to manipulate and chop the nucleus while the flattened section serves as a fluid baffle to inhibit vortex formation in the anterior chamber, thus decreasing the energy of any circulating nucleus chips. The baffle also acts as an effective barrier between the phacoemulsification region and a threatening posterior capsule.

MINARDI PHACO CHOPPER

Dr. Lawrence Minardi, of Charleston, WV, designed this instrument for the



K3-2370

“Quick Chop” technique of nucleus division. It features a short Maloney “Quick Chop” tip which is long enough to crack the nucleus while minimizing the chance of contacting the posterior capsule. It fits through a standard paracentesis and works well in a shallow anterior chamber.

AGARWAL “PHAKONIT” TECHNIQUE

Dr. Amar Agarwal, of Chennai (Madras), India, has developed a new technique of cataract removal through an incision as small as 0.9mm. He named the technique “PHAKONIT” which stands for phacoemulsification (**PHAKO**) performed with a needle (**N**) through a very small incision (**I**) with a sleeveless ultrasound tip (**T**). Dr. Agarwal has also pioneered the development of “No Anesthesia Cataract Surgery”. Comprehensive descriptions of these new techniques can be found on Dr. Agarwal’s website at www.dragarwal.com. Three new instruments developed by Dr. Agarwal are described below.

“Phakonit” Irrigating Phaco Chopper

This instrument features a 20 gauge cannula with dual irrigating ports and a semi-sharp cutting edge for effective karate phaco chopping of even the densest cataracts. According to Dr. Agarwal, once chopped, the cataract can be emulsified with minimal ultrasound energy through a 0.9mm incision.

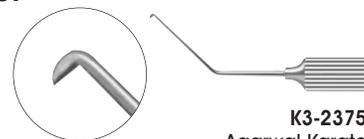


K7-4705

Agarwal “Phakonit” Irrigating Phaco Chopper

Agarwal Karate Phaco Chopper

Featuring a short tip with a semi-sharp edge, this instrument is used for karate chopping of hard and soft cataracts in preparation for phacoemulsification. Dr. Agarwal states that “using this method of chopping the nucleus, effectively reduces the ultrasound time”. The chopper is designed to fit easily through a standard paracentesis.



K3-2375

Agarwal Karate Phaco Chopper

Nucleus Manipulator and Globe Stabilizer



K3-2345 Agarwal Nucleus Manipulator & Globe Stabilizer



This double end instrument features a Y-shaped tip on one end and a smooth, blunt rod on the opposite end. It was designed by Dr. Agarwal for his technique of “No Anesthesia



Cataract Surgery”. According to Dr. Agarwal, the blunt rod is used to stabilize the globe with no patient discomfort and to avoid subconjunctival hemorrhages which can occur when using a forceps. The Y-shaped tip is used to rotate and manipulate the nucleus as well as to push back the iris in the case of a small pupil.

Free technique video available.

New! LASIK SPATULAS

ALIO-RODRIGUEZ LASIK SPATULA

This instrument was developed by Drs. Jorge Alio and Jose Rodriguez, of Alicante, Spain, to manipulate the flap during LASIK surgery. It features parallel 12mm long, 0.25mm diameter arms which are vaulted to closely approximate the curvature of the cornea. The spatula can be used for many purposes including lifting and repositing the flap, smoothing and cleaning the stromal bed, protecting the flap hinge during laser ablation, as well as for ironing and drying the stromal bed following laser ablation. Dr. Alio also uses the instrument for undermining and dissecting the flap for enhancement procedures.

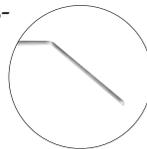
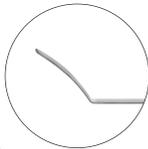


K3-2315 Alio-Rodriguez LASIK Spatula

Free video available on request.

BANAJI LASIK SPATULA

The gently curved spatula is designed to dissect the corneal flap. Its extremely thin duckbill shaped tip is used for dissecting the flap edge and to find the plane of dissection under the flap, while its semi-sharp sides create a superb cleavage and cut any septa formed between the flap and the stromal bed. The straight spatula is especially useful for "man hole cover" flaps. It slips easily under the flap without tenting or folding the edge.



Designed by Burjor Banaji, MD, of Bombay, India



K3-2525 Banaji LASIK Spatula

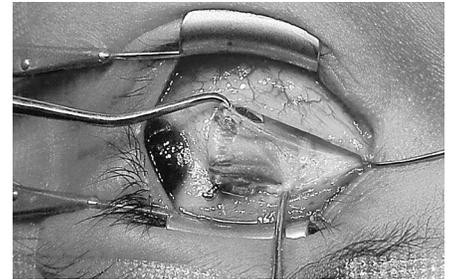
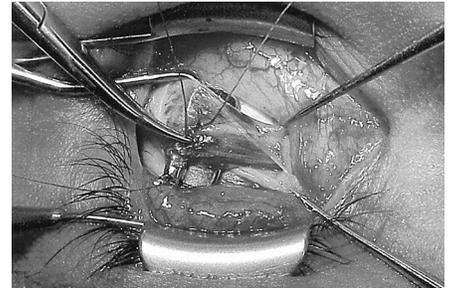
BISHOP MUSCLE HOOK WITH PROTECTIVE PLATE

This unique hook was designed by Dr. John E. Bishop, of Corpus Christi, Texas, for use in surgery on tight rec-



K3-6854 Bishop Muscle Hook

tus muscles. The instrument is similar to a Jameson muscle hook with the addition of a thin stainless steel protective plate which is hinged around the hook. It is small enough to easily slip under the muscle while the protective plate provides an extra margin of safety so that needles placed into the muscle cannot penetrate the sclera.



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